# LONGHORN ARMY AMMUNITION PLANT KARNACK, TEXAS

# ADMINISTRATIVE RECORD

**Volume 23**

**2024**

**Bate Stamp Numbers**
**01253906 – 01255884**

**Prepared for**

**Department of the Army**
**Longhorn Army Ammunition Plant**

**1976–2024**

***LONGHORN ARMY AMMUNITION PLANT***
***KARNACK, TEXAS***
**ADMINISTRATIVE RECORD – CHRONOLOGICAL INDEX**

VOLUME 23

2024

| | | |
|---|---|---|
| A. | Title: | Report (Cont'd) – Appendix C, File 2 to Quarterly Evaluation Report, 3rd Quarter (July-September) 2023, Groundwater Treatment Plant, Longhorn Army Ammunition Plant Karnack, Texas |
| | Author(s): | PCI-Bhate JV |
| | Recipient: | Environmental Protection Agency and Texas Commission on Environmental Quality |
| | Date: | May 16, 2024 |
| | Bate Stamp: | 01253906–01254778 |

| | | |
|---|---|---|
| B. | Title: | Report – Draft Final Ninth Annual Remedial Action Operation Report, LHAAP-46 (Plant 2 Area), Longhorn Army Ammunition Plant (LHAAP), Karnack, Texas, June 2024 |
| | Author(s): | Department of the Army |
| | Recipient: | Environmental Protection Agency and Texas Commission on Environmental Quality |
| | Date: | June 21, 2024 |
| | Bate Stamp: | 01254779–01255164 |

| | | |
|---|---|---|
| C. | Title: | Report (Cont'd) – Appendix D to Draft Final Ninth Annual Remedial Action Operation Report, LHAAP-46 (Plant 2 Area), Longhorn Army Ammunition Plant (LHAAP), Karnack, Texas, June 2024 |
| | Author(s): | Department of the Army |
| | Recipient: | Environmental Protection Agency and Texas Commission on Environmental Quality |
| | Date: | June 21, 2024 |
| | Bate Stamp: | 01255165–01255884 |

# Chromatograms and Selected Ion Monitoring

**ALS Environmental - Houston HRMS**
10450 Stancliff Rd., Suite 320, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

**20230914-817192**

# Injection Log

LCMS01 -Shimadzu 8050

**1st Review: XM**
**2nd Review: KN**

**ICAL Date:** 8/2/2023
**Cal. Std. xp:** 02/02/2024
**ICAL ID:** EC2300012

**Mobile Phases : A:**20mM ammonium acetate in water 231240 **B:**Acetonitrile 229152

| | Sample Name | | File Name | Acquisition Method | Dilution | Comments | Date/Time |
|---|---|---|---|---|---|---|---|
| 1 | IB | | 2230914-001 | Perchlorate6850c.lcm | 1x | | 9/14/2023 9:58 |
| 2 | LODV | | 2230914-002 | Perchlorate6850c.lcm | 1x | 230386 | 9/14/2023 10:04 |
| 3 | ICS | | 2230914-003 | Perchlorate6850c.lcm | 1x | 32103051 | 9/14/2023 10:39 |
| 4 | CCV | | 2230914-004 | Perchlorate6850c.lcm | 1x | 230380 | 9/14/2023 10:44 |
| 5 | EQ2300447-01 | | 2230914-005 | Perchlorate6850c.lcm | 1x | | 9/14/2023 10:51 |
| 6 | EQ2300447-03 | | 2230914-007 | Perchlorate6850c.lcm | 1x | | 9/14/2023 11:02 |
| 7 | EQ2300447-02 | | 2230914-006 | Perchlorate6850c.lcm | 1x | | 9/14/2023 11:26 |
| 8 | E2300826-001x5 | | 2230914-008 | Perchlorate6850c.lcm | 5x | | 9/14/2023 11:32 |
| 9 | E2300826-002 | | 2230914-009 | Perchlorate6850c.lcm | 1x | | 9/14/2023 11:38 |
| 10 | E2300827-001 | | 2230914-010 | Perchlorate6850c.lcm | 1x | | 9/14/2023 11:43 |
| 11 | E2300828-001x1k | | 2230914-011 | Perchlorate6850c.lcm | 1000x | | 9/14/2023 11:49 |
| 12 | K2310104-001 | | 2230914-012 | Perchlorate6850c.lcm | 1x | | 9/14/2023 11:54 |
| 13 | K2310104-002 | | 2230914-013 | Perchlorate6850c.lcm | 1x | | 9/14/2023 12:00 |
| 14 | K2310104-003 | | 2230914-014 | Perchlorate6850c.lcm | 1x | | 9/14/2023 12:05 |
| 15 | CCV | | 2230914-015 | Perchlorate6850c.lcm | 1x | 230380 | 9/14/2023 12:11 |
| 16 | E2300814-001 | | 2230914-016 | Perchlorate6850c.lcm | 1x | | 9/14/2023 12:17 |
| 17 | E2300814-002 | | 2230914-017 | Perchlorate6850c.lcm | 1x | | 9/14/2023 12:22 |
| 18 | E2300814-003 | | 2230914-018 | Perchlorate6850c.lcm | 1x | | 9/14/2023 12:28 |
| 19 | E2300814-004x500 | | 2230914-019 | Perchlorate6850c.lcm | 500x | | 9/14/2023 12:33 |
| 20 | E2300814-005x500 | | 2230914-020 | Perchlorate6850c.lcm | 500x | | 9/14/2023 12:39 |
| 21 | E2300814-006x5k | | 2230914-021 | Perchlorate6850c.lcm | 5000x | | 9/14/2023 12:45 |
| 22 | EQ2300447-04x5k | | 2230914-022 | Perchlorate6850c.lcm | 5000x | | 9/14/2023 12:50 |
| 23 | EQ2300447-05x5k | | 2230914-023 | Perchlorate6850c.lcm | 5000x | | 9/14/2023 12:56 |
| 24 | CCV | | 2230914-024 | Perchlorate6850c.lcm | 1x | 230380 | 9/14/2023 13:07 |

**ALS Group USA, Corp. dba ALS Environmental**

QA/QC Report

| | | | |
|---|---|---|---|
| **Client:** | ALS Environmental - US | **Service Request:** | E2300827 |
| **Project:** | HS23090714 | **Date Analyzed:** | 9/14/23 10:44 |

**Internal Standard Area and RT Summary**

**Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry**

| | | | |
|---|---|---|---|
| **File ID:** | I:\LCMS01\DATA\20230914\2230914-004 | **Lab Code:** | EQ2300448-01 |
| **Instrument ID:** | E-LCMS-01 | **Analysis Lot:** | 817192 |
| **Analytical Method:** | 6850 | **Signal ID:** | 1 |

| | | Sodium Perchlorate-18O4 | |
|---|---|---|---|
| | | **Area** | **RT** |
| | **ICAL Average ==>** | 297,129 | 3.57 |
| | **Upper Limit ==>** | 445,694 | 5.57 |
| | **Lower Limit ==>** | 148,565 | 1.57 |
| ***Associated Analyses*** | | | |
| Continuing Calibration Verification | EQ2300448-01 | 276,448 | 3.57 |
| Method Blank | EQ2300447-01 | 329,992 | 3.57 |
| Duplicate Lab Control Sample | EQ2300447-03 | 339,139 | 3.57 |
| Lab Control Sample | EQ2300447-02 | 347,265 | 3.58 |
| LH18/24-SP650_091223_AIX | E2300827-001 | 365,922 | 3.58 |

**Results flagged with an asterisk (*) indicate values outside control criteria.**

**ALS Group USA, Corp. dba ALS Environmental**

QA/QC Report

**Client:** ALS Environmental - US
**Project:** HS23090714

**Service Request:** E2300827
**Date Analyzed:** 9/14/23 12:11

## Internal Standard Area and RT Summary
## Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

**File ID:** I:\LCMS01\DATA\20230914\2230914-015
**Instrument ID:** E-LCMS-01
**Analytical Method:** 6850

**Lab Code:** EQ2300448-02
**Analysis Lot:** 817192
**Signal ID:** 1

| | | Sodium Perchlorate-18O4 | |
|---|---|---|---|
| | | **Area** | **RT** |
| | **ICAL Average ==>** | 297,129 | 3.57 |
| | **Upper Limit ==>** | 445,694 | 5.57 |
| | **Lower Limit ==>** | 148,565 | 1.57 |
| ***Associated Analyses*** | | | |
| Continuing Calibration Verification | EQ2300448-02 | 292,197 | 3.57 |

**Results flagged with an asterisk (*) indicate values outside control criteria.**

**ALS Group USA, Corp. dba ALS Environmental**

QA/QC Report

| | | | |
|---|---|---|---|
| **Client:** | ALS Environmental - US | **Service Request:** | E2300827 |
| **Project:** | HS23090714 | **Date Analyzed:** | 9/14/23 13:07 |

**Internal Standard Area and RT Summary**

**Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry**

| | | | |
|---|---|---|---|
| **File ID:** | I:\LCMS01\DATA\20230914\2230914-024 | **Lab Code:** | EQ2300448-03 |
| **Instrument ID:** | E-LCMS-01 | **Analysis Lot:** | 817192 |
| **Analytical Method:** | 6850 | **Signal ID:** | 1 |

| | | Sodium Perchlorate-18O4 | |
|---|---|---|---|
| | | **Area** | **RT** |
| | **ICAL Average ==>** | 297,129 | 3.57 |
| | **Upper Limit ==>** | 445,694 | 5.57 |
| | **Lower Limit ==>** | 148,565 | 1.57 |
| ***Associated Analyses*** | | | |
| Continuing Calibration Verification | EQ2300448-03 | 287,057 | 3.57 |

**Results flagged with an asterisk (*) indicate values outside control criteria.**

**ALS Group USA, Corp. dba ALS Environmental**

QA/QC Report

**Client:** ALS Environmental - US
**Project:** HS23090714

**Service Request:** E2300827
**Date Analyzed:** 9/14/23

## Continuing Calibration Verification Summary
## Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

**Analytical Method:** 6850
**File ID:** I:\LCMS01\DATA\20230914\2230914-004

**Calibration Date:** 8/2/23
**Calibration ID:** EC2300012
**Analysis Lot:** 817192
**Units:** ng/mL

| Analyte Name | Expected | Result | Average RF | CCV RF | %D | %Drift | Criteria | Curve Fit |
|---|---|---|---|---|---|---|---|---|
| Perchlorate | 10.0 | 9.76 | 0.1475 | 0.1440 | -2.4 | NA | ± 15 % | Average RF |

**ALS Group USA, Corp. dba ALS Environmental**

QA/QC Report

**Client:** ALS Environmental - US
**Project:** HS23090714

**Service Request:** E2300827
**Date Analyzed:** 9/14/23

## Continuing Calibration Verification Summary
## Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

**Analytical Method:** 6850
**File ID:** I:\LCMS01\DATA\20230914\2230914-015

**Calibration Date:** 8/2/23
**Calibration ID:** EC2300012
**Analysis Lot:** 817192
**Units:** ng/mL

| Analyte Name | Expected | Result | Average RF | CCV RF | %D | %Drift | Criteria | Curve Fit |
|---|---|---|---|---|---|---|---|---|
| Perchlorate | 10.0 | 9.88 | 0.1475 | 0.1457 | -1.2 | NA | ± 15 % | Average RF |

**ALS Group USA, Corp. dba ALS Environmental**

QA/QC Report

**Client:** ALS Environmental - US
**Project:** HS23090714

**Service Request:** E2300827
**Date Analyzed:** 9/14/23

## Continuing Calibration Verification Summary
## Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

**Analytical Method:** 6850
**File ID:** I:\LCMS01\DATA\20230914\2230914-024

**Calibration Date:** 8/2/23
**Calibration ID:** EC2300012
**Analysis Lot:** 817192
**Units:** ng/mL

| Analyte Name | Expected | Result | Average RF | CCV RF | %D | %Drift | Criteria | Curve Fit |
|---|---|---|---|---|---|---|---|---|
| Perchlorate | 10.0 | 9.99 | 0.1475 | 0.1473 | -0.1 | NA | ± 15 % | Average RF |

# Insight Report

Printed at 9/14/2023 1:26:53 PM

Method File: I:\LCMS01\DATA\20230914\20230914.lcm
Project File: I:\LCMS01\DATA\20230914\20230914.damlp

## IB

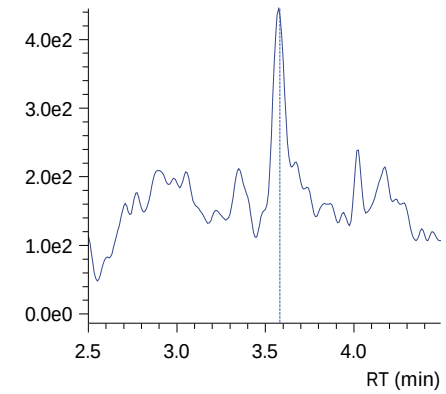
Sample ID: IB
Date Acquired: 9/14/2023 9:58:39 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230914\2230914-001.lcd
Vial: 4 | Inj. Volume: 10.0000uL | Tray: 0

| Name | Mode ID | Found RT | Area | ISTD Area | Conc. | Unit | Ref 1 m/z | Ref 1 Actual Ratio | Comment 1 |
|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | ND(W/B) | ---- | ---- | 445314 | ---- | ng/mL | 101.00 >85.00 | 0.00 | 19.12-35.51 |
| Sodium Perchlorate-18O4_IS | Auto | 3.575 | 445314 | 445314 | 1.0000 | ng/mL | ---- | ---- | |

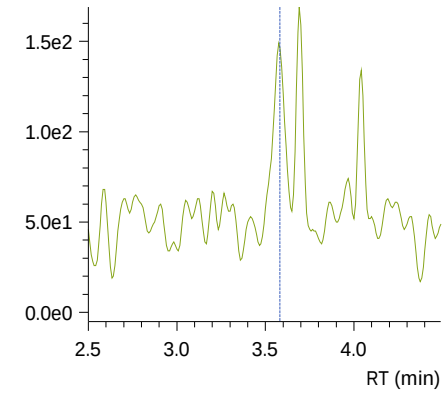
### Perchlorate

Conc ----
R#1 0.00 (27.31)

Q 99.00>83.00 (-) 4.45e2



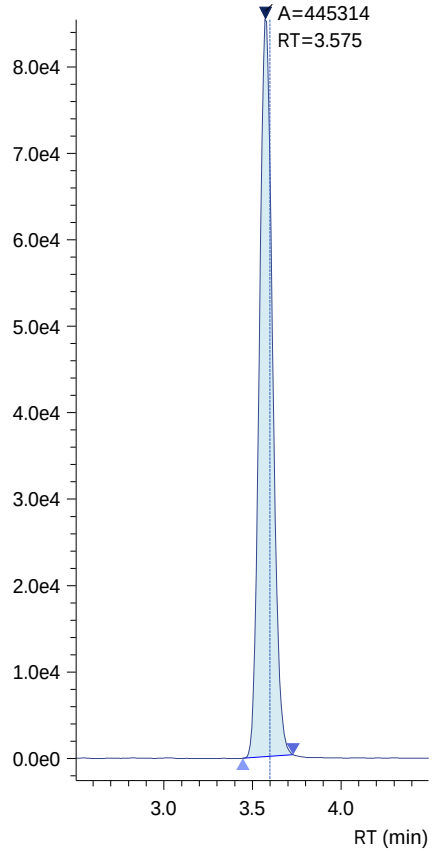

R1 101.00>85.00 (-) 1.69e2




### Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 8.55e4



# Insight Report

Printed at 9/14/2023 1:26:53 PM

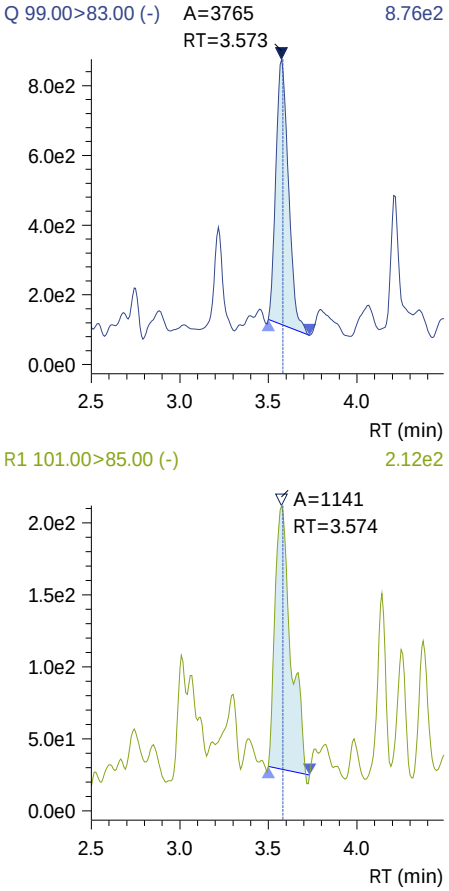
## LODV

Sample ID: LODV
Date Acquired: 9/14/2023 10:04:17 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230914\2230914-002.lcd
Vial: 12 | Inj. Volume: 10.0000uL | Tray: 1

| Name | Mode ID | Found RT | Area | ISTD Area | Conc. | Unit | Ref 1 m/z | Ref 1 Actual Ratio | Comment 1 |
|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | Auto | 3.573 | 3765 | 401553 | 0.0636 | ng/mL | 101.00 >85.00 | 30.30 | 19.12-35.51 |
| Sodium Perchlorate-18O4 _IS | Auto | 3.574 | 4015 53 | 401553 | 1.0000 | ng/mL | ---- | ---- | |

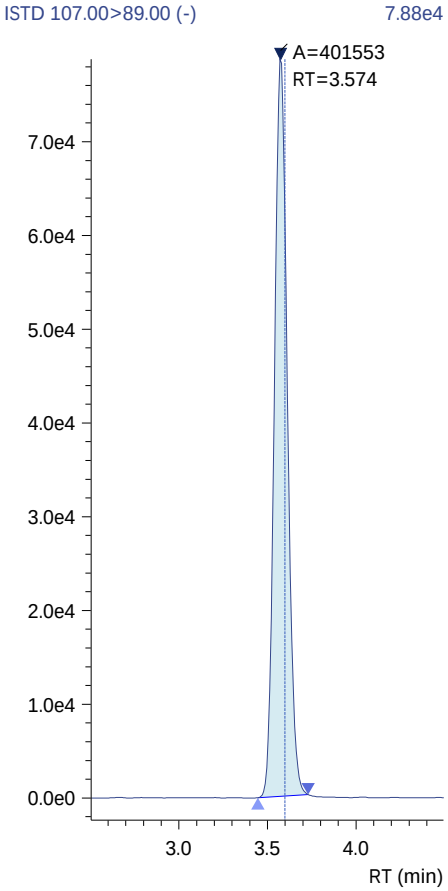
### Perchlorate

Conc 0.0636
R#1 30.30 (27.31)




### Sodium Perchlorate-18O4_IS

Conc 1.0000



# Insight Report

Printed at 9/14/2023 1:26:53 PM

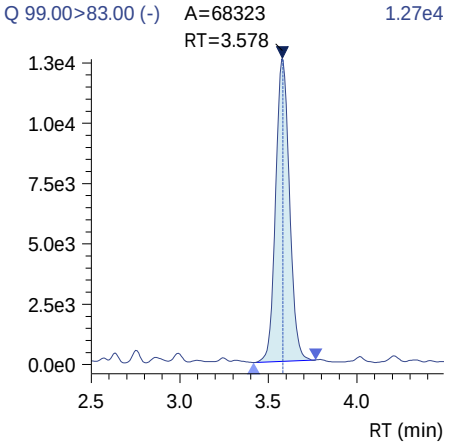
## ICS

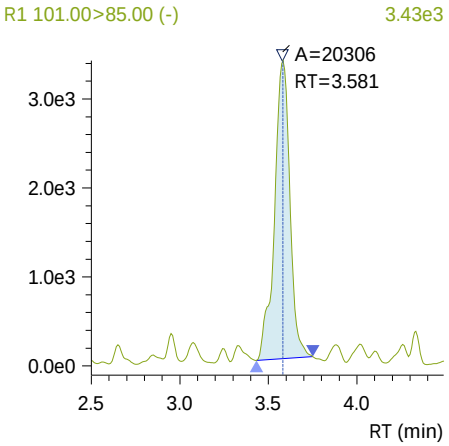
Sample ID: ICS
Date Acquired: 9/14/2023 10:39:02 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230914\2230914-003.lcd
Vial: 2 | Inj. Volume: 10.0000uL | Tray: 0

| Name | Mode ID | Found RT | Area | ISTD Area | Conc. | Unit | Ref 1 m/z | Ref 1 Actual Ratio | Comment 1 |
|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | Auto | 3.578 | 68323 | 419340 | 1.1049 | ng/mL | 101.00 >85.00 | 29.72 | 19.12-35.51 |
| Sodium Perchlorate-18O4 _IS | Auto | 3.575 | 4193 40 | 419340 | 1.0000 | ng/mL | ---- | ---- | |

### Perchlorate

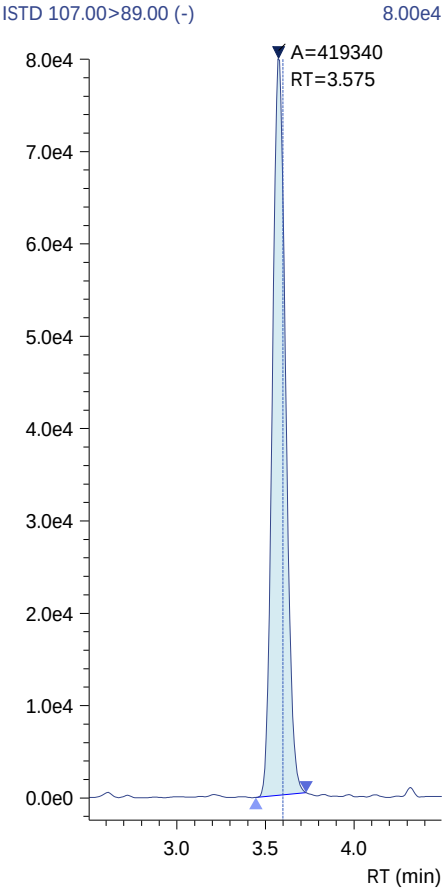
Conc 1.1049
R#1 29.72 (27.31)




### Sodium Perchlorate-18O4_IS

Conc 1.0000



# Insight Report

Printed at 9/14/2023 1:26:53 PM

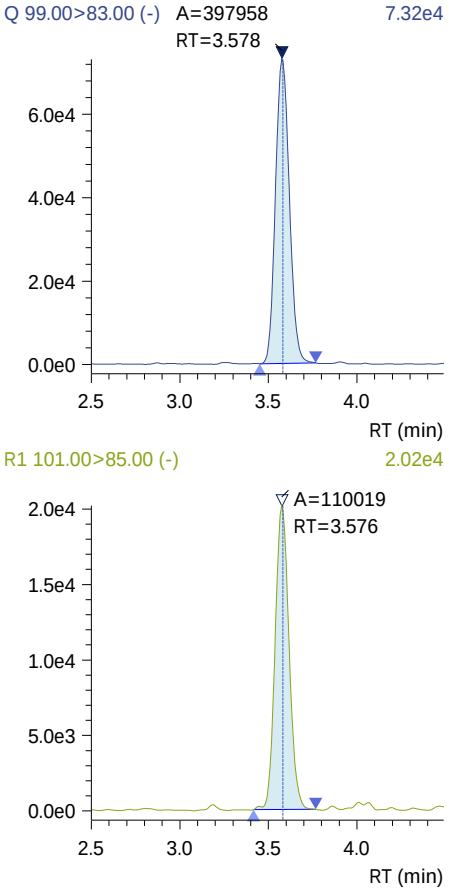
## CCV

Sample ID: CCV
Date Acquired: 9/14/2023 10:44:37 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230914\2230914-004.lcd
Vial: 7 | Inj. Volume: 10.0000uL | Tray: 1

| Name | Mode ID | Found RT | Area | ISTD Area | Conc. | Unit | Ref 1 m/z | Ref 1 Actual Ratio | Comment 1 |
|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | Auto | 3.578 | 397958 | 276448 | 9.7621 | ng/mL | 101.00 >85.00 | 27.65 | 19.12-35.51 |
| Sodium Perchlorate-18O4_IS | Auto | 3.574 | 276448 | 276448 | 1.0000 | ng/mL | ---- | ---- | |

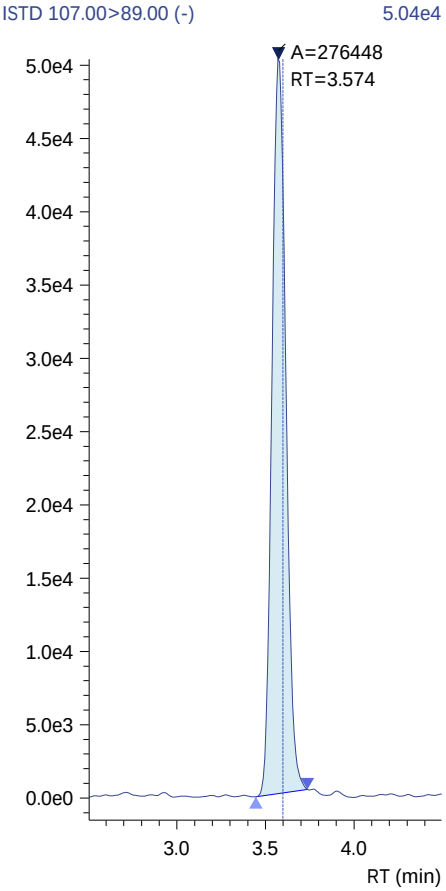
### Perchlorate

Conc 9.7621
R#1 27.65 (27.31)




### Sodium Perchlorate-18O4_IS

Conc 1.0000



# Insight Report

Printed at 9/14/2023 1:26:53 PM

## EQ2300447-01

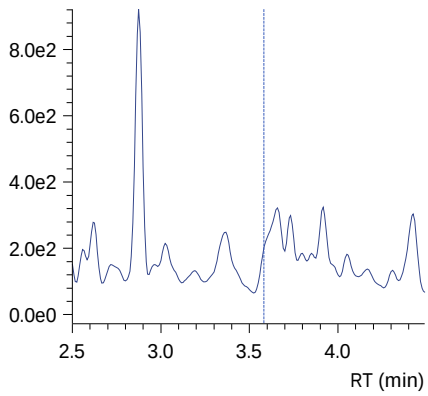
Sample ID: EQ2300447-01
Date Acquired: 9/14/2023 10:51:06 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230914\2230914-005.lcd
Vial: 22 | Inj. Volume: 10.0000uL | Tray: 3

| Name | Mode ID | Found RT | Area | ISTD Area | Conc. | Unit | Ref 1 m/z | Ref 1 Actual Ratio | Comment 1 |
|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | ND(W/B) | ---- | ---- | 329992 | ---- | ng/mL | 101.00 >85.00 | 0.00 | 19.12-35.51 |
| Sodium Perchlorate-18O4_IS | Auto | 3.573 | 329992 | 329992 | 1.0000 | ng/mL | ---- | ---- | |

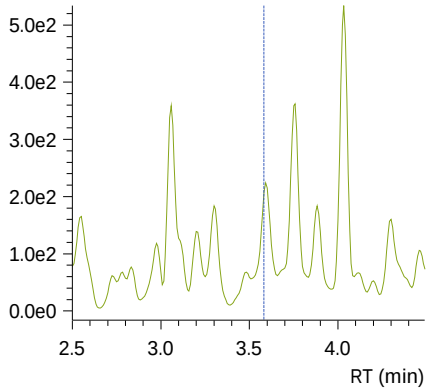
### Perchlorate

Conc ----
R#1 0.00 (27.31)

Q 99.00>83.00 (-) 9.22e2



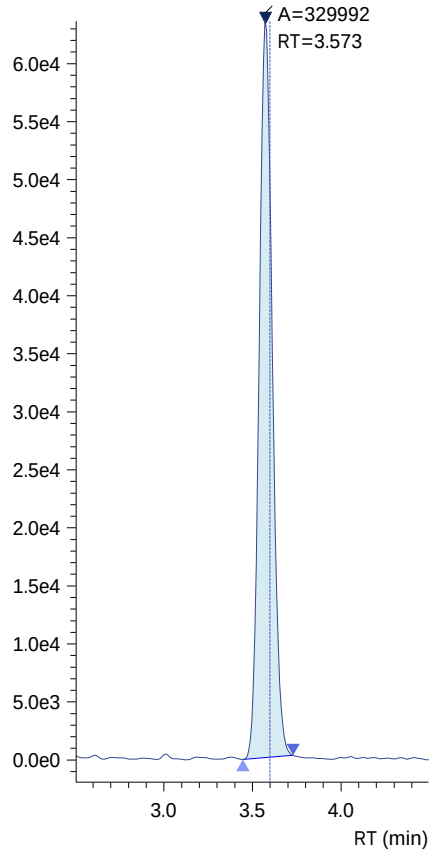

R1 101.00>85.00 (-) 5.34e2




### Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 6.37e4



# Insight Report

Printed at 9/14/2023 1:26:53 PM

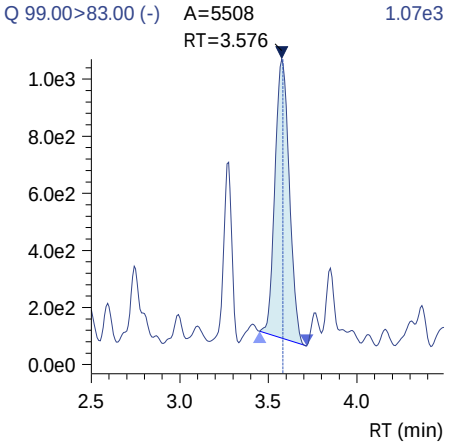
## EQ2300447-02

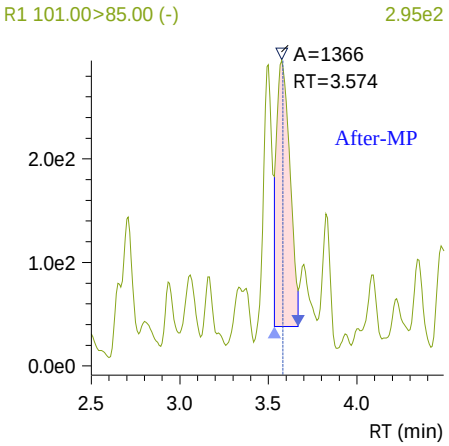
Sample ID: EQ2300447-02
Date Acquired: 9/14/2023 11:26:00 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230914\2230914-006.lcd
Vial: 23 | Inj. Volume: 10.0000uL | Tray: 3

| Name | Mode ID | Found RT | Area | ISTD Area | Conc. | Unit | Ref 1 m/z | Ref 1 Actual Ratio | Comment 1 |
|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | MI R1 | 3.576 | 5508 | 347265 | 0.1076 | ng/mL | 101.00 >85.00 | 24.80 | 19.12-35.51 |
| Sodium Perchlorate-18O4 _IS | Auto | 3.575 | 3472 65 | 347265 | 1.0000 | ng/mL | ---- | ---- | |

### Perchlorate

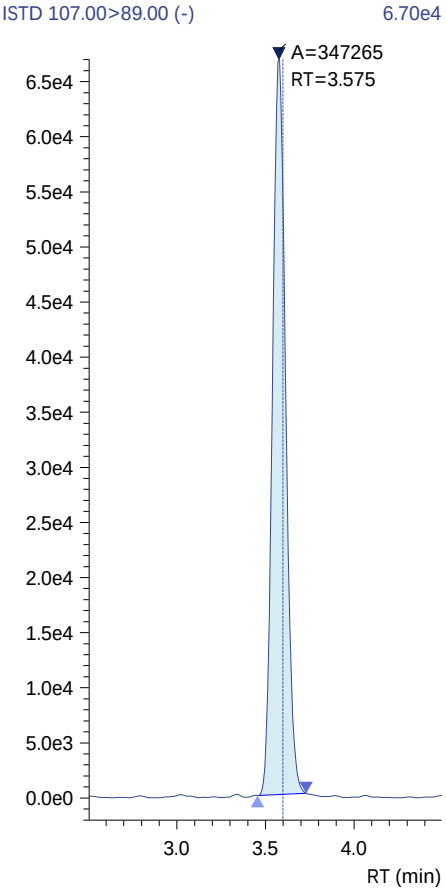
Conc 0.1076
R#1 24.80 (27.31)




### Sodium Perchlorate-18O4_IS

Conc 1.0000



# Insight Report

Printed at 9/14/2023 1:27:41 PM

Method File: I:\LCMS01\DATA\20230914\20230914.lcm
Project File: I:\LCMS01\DATA\20230914\20230914.damlp

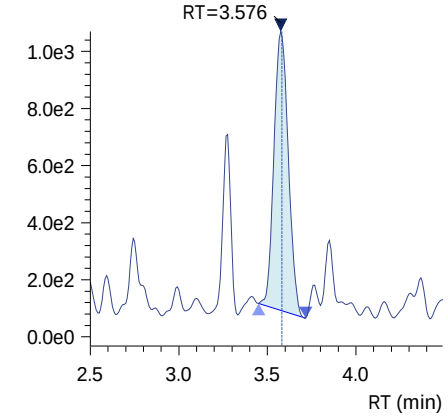
## EQ2300447-02

Sample ID: EQ2300447-02
Date Acquired: 9/14/2023 11:26:00 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230914\2230914-006.lcd
Vial: 23 | Inj. Volume: 10.0000uL | Tray: 3

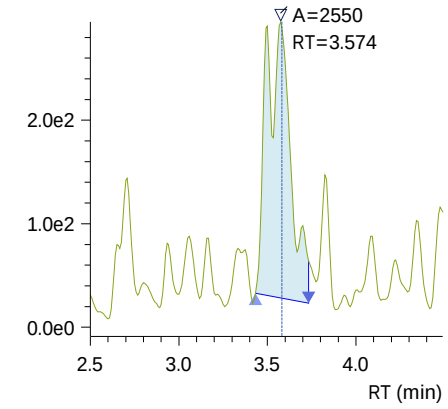
### Perchlorate

Conc 0.1076
R#1 46.30 (27.31)

Q 99.00>83.00 (-) A=5508 1.07e3



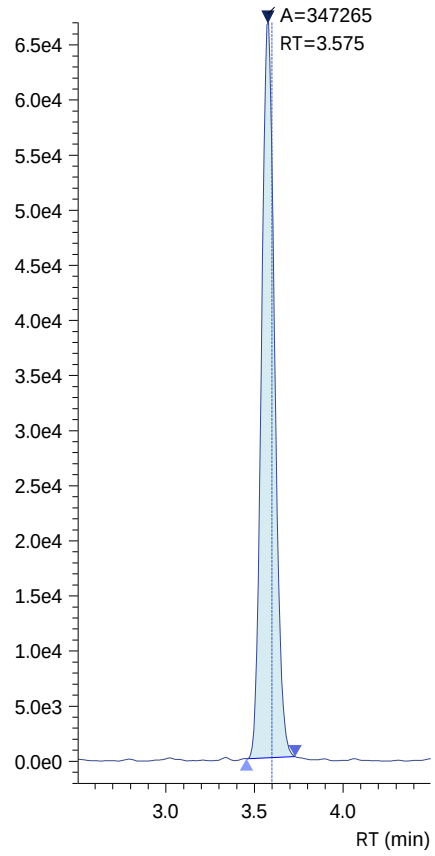

R1 101.00>85.00 (-) 2.95e2




### Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 6.70e4



# Insight Report

Printed at 9/14/2023 1:26:53 PM

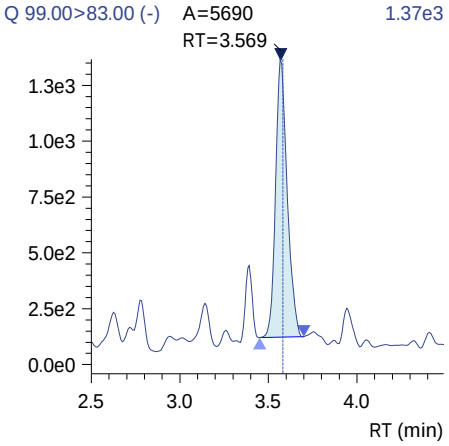
## EQ2300447-03

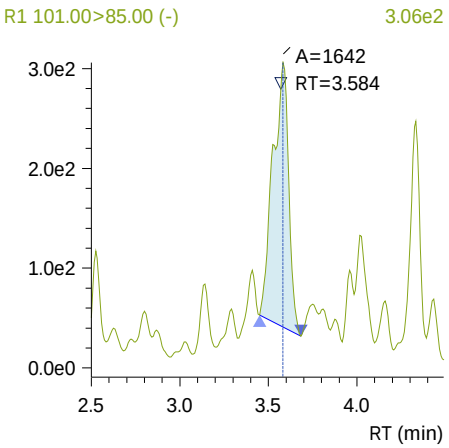
Sample ID: EQ2300447-03
Date Acquired: 9/14/2023 11:02:07 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230914\2230914-007.lcd
Vial: 24 | Inj. Volume: 10.0000uL | Tray: 3

| Name | Mode ID | Found RT | Area | ISTD Area | Conc. | Unit | Ref 1 m/z | Ref 1 Actual Ratio | Comment 1 |
|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | Auto | 3.569 | 5690 | 339139 | 0.1138 | ng/mL | 101.00 >85.00 | 28.86 | 19.12-35.51 |
| Sodium Perchlorate-18O4 _IS | Auto | 3.574 | 3391 39 | 339139 | 1.0000 | ng/mL | ---- | ---- | |

### Perchlorate

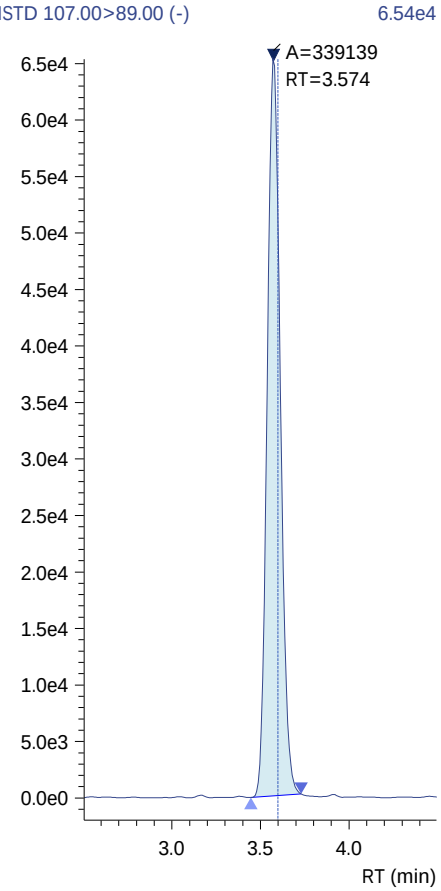
Conc 0.1138
R#1 28.86 (27.31)




### Sodium Perchlorate-18O4_IS

Conc 1.0000



# Insight Report

Printed at 9/14/2023 1:26:53 PM

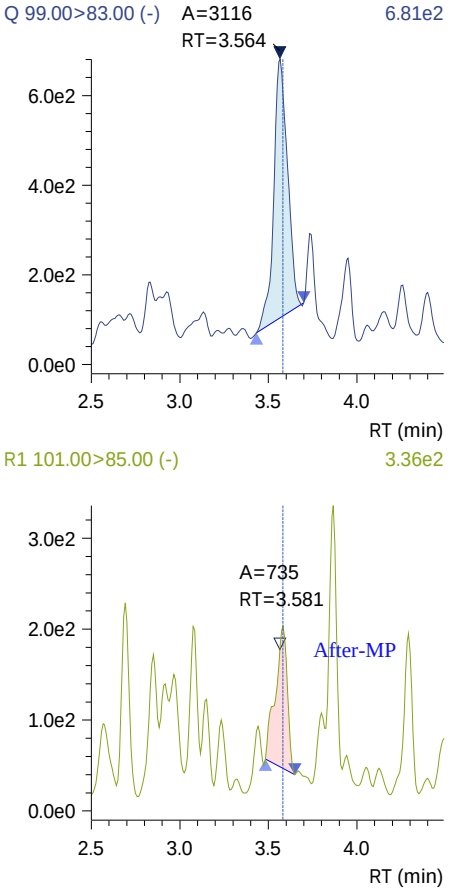
## E2300827-001

Sample ID: E2300827-001
Date Acquired: 9/14/2023 11:43:48 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230914\2230914-010.lcd
Vial: 27 | Inj. Volume: 10.0000uL | Tray: 3

| Name | Mode ID | Found RT | Area | ISTD Area | Conc. | Unit | Ref 1 m/z | Ref 1 Actual Ratio | Comment 1 |
|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | MI R1 | 3.564 | 3116 | 365922 | 0.0578 | ng/mL | 101.00 >85.00 | 23.58 | 19.12-35.51 |
| Sodium Perchlorate-18O4 _IS | Auto | 3.575 | 3659 22 | 365922 | 1.0000 | ng/mL | ---- | ---- | |

### Perchlorate

Conc 0.0578
R#1 23.58 (27.31)

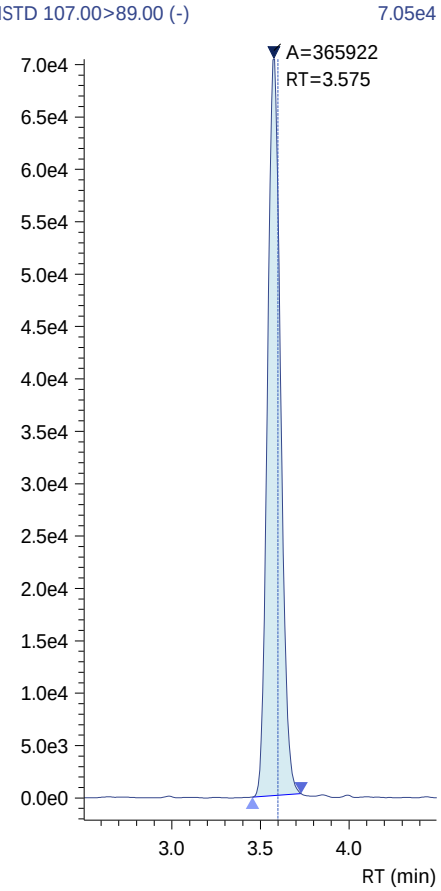






### Sodium Perchlorate-18O4_IS

Conc 1.0000



# Insight Report

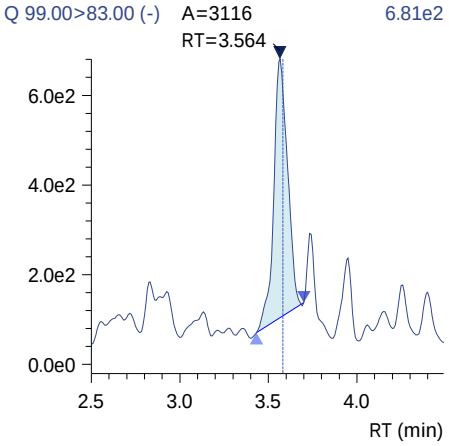
Printed at 9/14/2023 1:27:41 PM

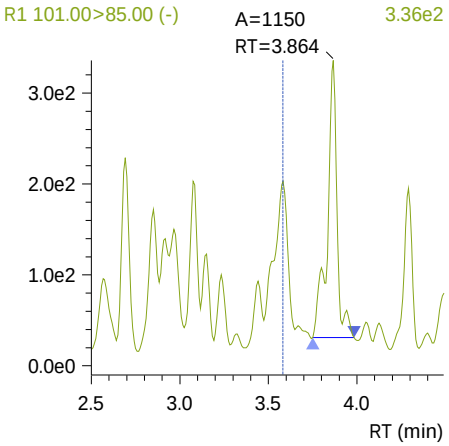
## E2300827-001

Sample ID: E2300827-001
Date Acquired: 9/14/2023 11:43:48 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230914\2230914-010.lcd
Vial: 27 | Inj. Volume: 10.0000uL | Tray: 3

### Perchlorate

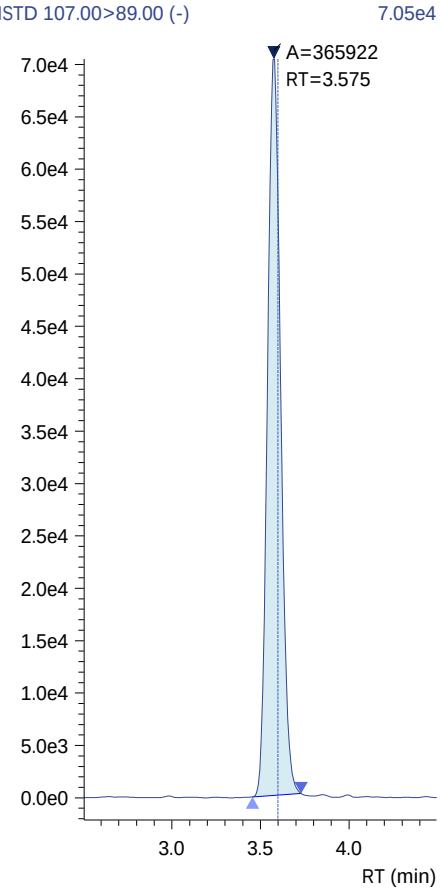
Conc 0.0578
R#1 0.00 (27.31)




### Sodium Perchlorate-18O4_IS

Conc 1.0000



# Insight Report

Printed at 9/14/2023 1:26:53 PM

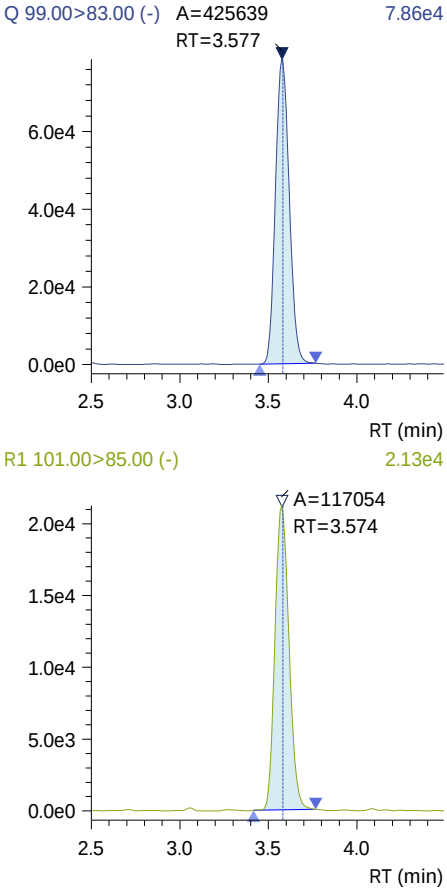
## CCV

Sample ID: CCV
Date Acquired: 9/14/2023 12:11:30 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230914\2230914-015.lcd
Vial: 7 | Inj. Volume: 10.0000uL | Tray: 1

| Name | Mode ID | Found RT | Area | ISTD Area | Conc. | Unit | Ref 1 m/z | Ref 1 Actual Ratio | Comment 1 |
|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | Auto | 3.577 | 425639 | 292197 | 9.8784 | ng/mL | 101.00 >85.00 | 27.50 | 19.12-35.51 |
| Sodium Perchlorate-18O4_IS | Auto | 3.573 | 292197 | 292197 | 1.0000 | ng/mL | ---- | ---- | |

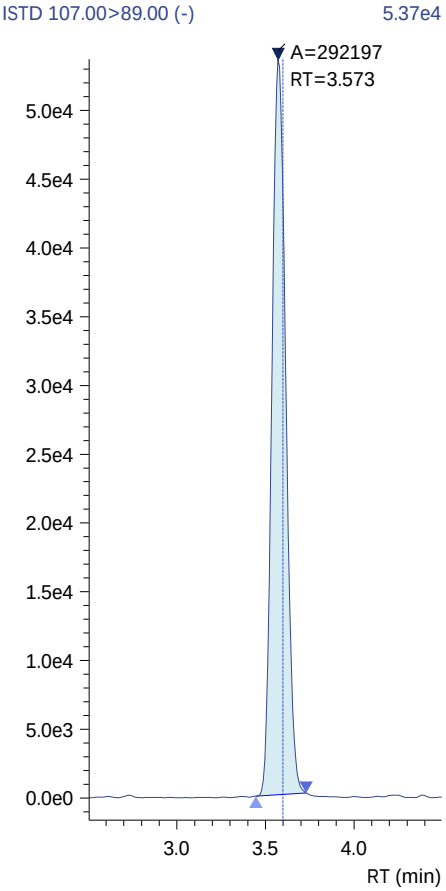
### Perchlorate

Conc 9.8784
R#1 27.50 (27.31)




### Sodium Perchlorate-18O4_IS

Conc 1.0000



# HS23090716 GROUNDWATER TREATMENT PLANT WEEKLY SAMPLES Cover Page

ALS WO# HS23090716

ALS Environmental
ALS Group USA, Corp
10450 Stancliff Road, Suite 210
Houston, TX 77099
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**F :** +1 281 530 5887
**www.alsglobal.com**

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Chromatograms and Selected Ion Monitoring

10450 Stancliff Rd. Suite 210
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F: +1 281 530 5887
alsglobal.com

# WorkOrder: HS23090716

## GROUNDWATER TREATMENT PLANT WEEKLY SAMPLES

**Bhate Environmental Associates, Inc.**

Marcia Olive
445 Union Blvd Ste 129
Lakewood CO 80228

**25-Sep-2023**

# HS23090716 GROUNDWATER TREATMENT PLANT WEEKLY SAMPLES Final

ALS WO# HS23090716

10450 Stancliff Rd. Suite 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887

September 21, 2023

Marcia Olive
Bhate Environmental Associates, Inc.
445 Union Blvd Ste 129
Lakewood, CO 80228

Work Order: **HS23090716**

Laboratory Results for: **GROUNDWATER TREATMENT PLANT WEEKLY SAMPLES**

Dear Marcia Olive,

ALS Environmental received 3 sample(s) on Sep 13, 2023 for the analysis presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

**Generated By: JUMOKE.LAWAL**
James Guin

**ALS Houston, US** Date: 21-Sep-23

**Client:** Bhate Environmental Associates, Inc.
**Project:** GROUNDWATER TREATMENT PLANT WEEKLY SAMPLES
**Work Order:** HS23090716

## SAMPLE SUMMARY

| Lab Samp ID | Client Sample ID | Matrix | TagNo | Collection Date | Date Received | Hold |
|---|---|---|---|---|---|---|
| HS23090716-01 | LH18/24-SP650_091223 | Water | | 12-Sep-2023 13:00 | 13-Sep-2023 09:55 | ☐ |
| HS23090716-02 | LH18/24-SP650_091223_BIX | Water | | 12-Sep-2023 13:00 | 13-Sep-2023 09:55 | ☐ |
| HS23090716-03 | LH18/24-SP650_091223_AIX | Water | | 12-Sep-2023 13:00 | 13-Sep-2023 09:55 | ☐ |

**ALS Houston, US** Date: 21-Sep-23

**Client:** Bhate Environmental Associates, Inc. **CASE NARRATIVE**
**Project:** GROUNDWATER TREATMENT PLANT WEEKLY SAMPLES
**Work Order:** HS23090716

## Work Order Comments

- The analysis for Perchlorate was subcontracted to ALS Houston High-Res Lab. Final report attached

## WetChemistry by Method E415.1

### Batch ID: R446349

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

## WetChemistry by Method E350.3

### Batch ID: R446349

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

## WetChemistry by Method E365.3

### Batch ID: R446168

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

**ALS Houston, US** Date: 21-Sep-23

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**

Project: GROUNDWATER TREATMENT PLANT WEEKLY SAMPLES WorkOrder:HS23090716

Sample ID: LH18/24-SP650_091223 Lab ID:HS23090716-01

Collection Date: 12-Sep-2023 13:00 Matrix:Water

| ANALYSES | RESULT | QUAL | DL | LOD | LOQ | UNITS | DILUTION FACTOR | DATE ANALYZED |
|---|---|---|---|---|---|---|---|---|
| **AMMONIA AS N BY E350.3(ISE)** | | **Method:E350.3** | | | | | | Analyst: AB |
| **Nitrogen, Ammonia (As N)** | **24** | a | **0.10** | **0.20** | **0.20** | **mg/L** | 1 | 19-Sep-2023 17:14 |
| **ORTHO PHOSPHATE (PO4) AS P BY E365.3-1978** | | **Method:E365.3** | | | | | | Analyst: AB |
| **Phosphorus, Total Orthophosphate (As P)** | **4.38** | a | **0.0500** | **0.125** | **0.125** | **mg/L** | 5 | 13-Sep-2023 11:28 |
| **TOTAL ORGANIC CARBON BY E415.1** | | **Method:E415.1** | | | | | | Analyst: DW |
| **Organic Carbon, Total** | **42.0** | a | **0.500** | **1.00** | **1.00** | **mg/L** | 1 | 21-Sep-2023 11:09 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

**ALS Houston, US** Date: 21-Sep-23

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**

Project: GROUNDWATER TREATMENT PLANT WEEKLY SAMPLES WorkOrder:HS23090716

Sample ID: LH18/24-SP650_091223_BIX Lab ID:HS23090716-02

Collection Date: 12-Sep-2023 13:00 Matrix:Water

| ANALYSES | RESULT | QUAL | DL | LOD | LOQ | UNITS | DILUTION FACTOR | DATE ANALYZED |
|---|---|---|---|---|---|---|---|---|
| **SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)** | | **Method:NA** | | | | | | Analyst: SUB |
| Subcontract Analysis | See Attached | | 0 | 0 | | NA | 1 | 14-Sep-2023 14:50 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

**ALS Houston, US** Date: 21-Sep-23

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**

Project: GROUNDWATER TREATMENT PLANT WEEKLY SAMPLES WorkOrder:HS23090716

Sample ID: LH18/24-SP650_091223_AIX Lab ID:HS23090716-03

Collection Date: 12-Sep-2023 13:00 Matrix:Water

| ANALYSES | RESULT | QUAL | DL | LOD | LOQ | UNITS | DILUTION FACTOR | DATE ANALYZED |
|---|---|---|---|---|---|---|---|---|
| **SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)** | | **Method:NA** | | | | | | Analyst: SUB |
| Subcontract Analysis | See Attached | | 0 | 0 | | NA | 1 | 14-Sep-2023 14:50 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

**Client:** Bhate Environmental Associates, Inc.
**Project:** GROUNDWATER TREATMENT PLANT WEEKLY SAMPLES
**WorkOrder:** HS23090716

**DATES REPORT**

| Sample ID | Client Samp ID | Collection Date | Leachate Date | Prep Date | Analysis Date | DF |
|---|---|---|---|---|---|---|
| **Batch ID:** R446168 ( 0 ) | **Test Name :** ORTHO PHOSPHATE (PO4) AS P BY E365.3-1978 | | | | **Matrix:** Water | |
| HS23090716-01 | LH18/24-SP650_091223 | 12 Sep 2023 13:00 | | | 13 Sep 2023 11:28 | 5 |
| **Batch ID:** R446349 ( 0 ) | **Test Name :** SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850) | | | | **Matrix:** Water | |
| HS23090716-02 | LH18/24-SP650_091223_BIX | 12 Sep 2023 13:00 | | | 14 Sep 2023 14:50 | 1 |
| HS23090716-03 | LH18/24-SP650_091223_AIX | 12 Sep 2023 13:00 | | | 14 Sep 2023 14:50 | 1 |
| **Batch ID:** R446788 ( 0 ) | **Test Name :** AMMONIA AS N BY E350.3(ISE) | | | | **Matrix:** Water | |
| HS23090716-01 | LH18/24-SP650_091223 | 12 Sep 2023 13:00 | | | 19 Sep 2023 17:14 | 1 |
| **Batch ID:** R447002 ( 0 ) | **Test Name :** TOTAL ORGANIC CARBON BY E415.1 | | | | **Matrix:** Water | |
| HS23090716-01 | LH18/24-SP650_091223 | 12 Sep 2023 13:00 | | | 21 Sep 2023 11:09 | 1 |

**ALS Houston, US** Date: 21-Sep-23

**Client:** Bhate Environmental Associates, Inc.
**Project:** GROUNDWATER TREATMENT PLANT WEEKLY SAMPLES
**WorkOrder:** HS23090716

**QC BATCH REPORT**

**Batch ID:** R446168 ( 0 ) **Instrument:** UV-2450 **Method:** ORTHO PHOSPHATE (PO4) AS P BY E365.3-1978

**MBLK** Sample ID: **MBLK-R446168** Units: **mg/L** Analysis Date: **13-Sep-2023 11:28**
Client ID: Run ID: **UV-2450_446168** SeqNo: **7540187** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Phosphorus, Total Orthophosphate (As P) | 0.0250 | 0.0250 | | | | | | | | U |

**LCS** Sample ID: **LCS-R446168** Units: **mg/L** Analysis Date: **13-Sep-2023 11:28**
Client ID: Run ID: **UV-2450_446168** SeqNo: **7540186** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Phosphorus, Total Orthophosphate (As P) | 0.27 | 0.0250 | 0.25 | 0 | 108 | 85 - 115 | | | | |

**MS** Sample ID: **HS23090566-02MS** Units: **mg/L** Analysis Date: **13-Sep-2023 11:28**
Client ID: Run ID: **UV-2450_446168** SeqNo: **7540206** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Phosphorus, Total Orthophosphate (As P) | 0.71 | 0.0250 | 0.25 | 0.488 | 88.8 | 80 - 120 | | | | |

**MS** Sample ID: **HS23090566-01MS** Units: **mg/L** Analysis Date: **13-Sep-2023 11:28**
Client ID: Run ID: **UV-2450_446168** SeqNo: **7540189** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Phosphorus, Total Orthophosphate (As P) | 0.506 | 0.0250 | 0.25 | 0.286 | 88.0 | 80 - 120 | | | | |

**MSD** Sample ID: **HS23090566-02MSD** Units: **mg/L** Analysis Date: **13-Sep-2023 11:28**
Client ID: Run ID: **UV-2450_446168** SeqNo: **7540205** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Phosphorus, Total Orthophosphate (As P) | 0.714 | 0.0250 | 0.25 | 0.488 | 90.4 | 80 - 120 | 0.71 | 0.562 | 20 | |

**MSD** Sample ID: **HS23090566-01MSD** Units: **mg/L** Analysis Date: **13-Sep-2023 11:28**
Client ID: Run ID: **UV-2450_446168** SeqNo: **7540188** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Phosphorus, Total Orthophosphate (As P) | 0.507 | 0.0250 | 0.25 | 0.286 | 88.4 | 80 - 120 | 0.506 | 0.197 | 20 | |

**The following samples were analyzed in this batch:** HS23090716-01

**ALS Houston, US** Date: 21-Sep-23

**Client:** Bhate Environmental Associates, Inc.
**Project:** GROUNDWATER TREATMENT PLANT WEEKLY SAMPLES
**WorkOrder:** HS23090716

**QC BATCH REPORT**

**Batch ID: R446788 ( 0 )** **Instrument: WetChem_HS** **Method: AMMONIA AS N BY E350.3(ISE)**

**MBLK** Sample ID: **MBLK-R446788** Units: **mg/L** Analysis Date: **19-Sep-2023 17:14**
Client ID: Run ID: **WetChem_HS_446788** SeqNo: **7552832** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Nitrogen, Ammonia (As N) | 0.20 | 0.20 | | | | | | | | U |

**LCS** Sample ID: **LCS-R446788** Units: **mg/L** Analysis Date: **19-Sep-2023 17:14**
Client ID: Run ID: **WetChem_HS_446788** SeqNo: **7552831** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Nitrogen, Ammonia (As N) | 8.803 | 0.20 | 10 | 0 | 88.0 | 80 - 120 | | | | |

**MS** Sample ID: **HS23090449-01MS** Units: **mg/L** Analysis Date: **19-Sep-2023 17:14**
Client ID: Run ID: **WetChem_HS_446788** SeqNo: **7552834** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Nitrogen, Ammonia (As N) | 11.56 | 0.20 | 10 | 1.869 | 96.9 | 80 - 120 | | | | |

**MSD** Sample ID: **HS23090449-01MSD** Units: **mg/L** Analysis Date: **19-Sep-2023 17:14**
Client ID: Run ID: **WetChem_HS_446788** SeqNo: **7552833** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Nitrogen, Ammonia (As N) | 11.33 | 0.20 | 10 | 1.869 | 94.6 | 80 - 120 | 11.56 | 2.04 | 20 | |

**The following samples were analyzed in this batch:** HS23090716-01

**ALS Houston, US** Date: 21-Sep-23

**Client:** Bhate Environmental Associates, Inc.
**Project:** GROUNDWATER TREATMENT PLANT WEEKLY SAMPLES
**WorkOrder:** HS23090716

**QC BATCH REPORT**

**Batch ID: R447002 ( 0 )** **Instrument: TOC_04** **Method: TOTAL ORGANIC CARBON BY E415.1**

**MBLK** Sample ID: **MBLK-09202023** Units: **mg/L** Analysis Date: **21-Sep-2023 10:26**
Client ID: Run ID: **TOC_04_447002** SeqNo: **7557892** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Organic Carbon, Total | 1.00 | 1.00 | | | | | | | | U |

**LCS** Sample ID: **LCS-09202023** Units: **mg/L** Analysis Date: **21-Sep-2023 10:40**
Client ID: Run ID: **TOC_04_447002** SeqNo: **7557893** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Organic Carbon, Total | 9.818 | 1.00 | 10 | 0 | 98.2 | 85 - 115 | | | | |

**LCSD** Sample ID: **LCSD-09202023** Units: **mg/L** Analysis Date: **21-Sep-2023 10:55**
Client ID: Run ID: **TOC_04_447002** SeqNo: **7557894** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Organic Carbon, Total | 9.899 | 1.00 | 10 | 0 | 99.0 | 85 - 115 | 9.818 | 0.822 | 20 | |

**MS** Sample ID: **HS23091099-01MS** Units: **mg/L** Analysis Date: **21-Sep-2023 13:30**
Client ID: Run ID: **TOC_04_447002** SeqNo: **7557905** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Organic Carbon, Total | 18.89 | 1.00 | 10 | 8.951 | 99.4 | 80 - 120 | | | | |

**The following samples were analyzed in this batch:** HS23090716-01

**ALS Houston, US** Date: 21-Sep-23

**Client:** Bhate Environmental Associates, Inc.
**Project:** GROUNDWATER TREATMENT PLANT WEEKLY SAMPLES
**WorkOrder:** **HS23090716**

**QUALIFIERS, ACRONYMS, UNITS**

| Qualifier | Description |
|---|---|
| * | Value exceeds Regulatory Limit |
| a | Not accredited |
| B | Analyte detected in the associated Method Blank above the Reporting Limit |
| E | Value above quantitation range |
| H | Analyzed outside of Holding Time |
| J | Analyte detected below quantitation limit |
| M | Manually integrated, see raw data for justification |
| n | Not offered for accreditation |
| ND | Not Detected at the Reporting Limit |
| O | Sample amount is > 4 times amount spiked |
| P | Dual Column results percent difference > 40% |
| R | RPD above laboratory control limit |
| S | Spike Recovery outside laboratory control limits |
| U | Analyzed but not detected above the MDL/SDL |

| Acronym | Description |
|---|---|
| DCS | Detectability Check Study |
| DUP | Method Duplicate |
| LCS | Laboratory Control Sample |
| LCSD | Laboratory Control Sample Duplicate |
| MBLK | Method Blank |
| MDL | Method Detection Limit |
| MQL | Method Quantitation Limit |
| MS | Matrix Spike |
| MSD | Matrix Spike Duplicate |
| PDS | Post Digestion Spike |
| PQL | Practical Quantitaion Limit |
| SD | Serial Dilution |
| SDL | Sample Detection Limit |
| TRRP | Texas Risk Reduction Program |

## CERTIFICATIONS,ACCREDITATIONS & LICENSES

| Agency | Number | Expire Date |
|---|---|---|
| Arkansas | 88-00356 | 27-Mar-2024 |
| California | 2919; 2024 | 30-Apr-2024 |
| Dept of Defense | L23-358 | 31-May-2025 |
| Florida | E87611-38 | 30-Jun-2024 |
| Illinois | 2000322023-11 | 30-Jun-2024 |
| Kansas | E-10352 2023-2024 | 31-Jul-2024 |
| Louisiana | 03087 2023-2024 | 30-Jun-2024 |
| Maryland | 343; 2023-2024 | 30-Jun-2024 |
| North Carolina | 624-2023 | 31-Dec-2023 |
| North Dakota | R-193 2023-2024 | 30-Apr-2024 |
| Texas | T104704231-23-31 | 30-Apr-2024 |
| Utah | TX026932023-14 | 31-Jul-2024 |

**ALS Houston, US** Date: 21-Sep-23

## Sample Receipt Checklist

**Work Order ID:** HS23090716 **Date/Time Received:** 13-Sep-2023 09:55

**Client Name:** Bhate Environmental **Received by:** Corey Grandits

| **Completed By:** | /S/ Corey Grandits | 13-Sep-2023 11:43 | **Reviewed by:** | /S/ Nieka.Carson | 13-Sep-2023 14:16 |
|---|---|---|---|---|---|
| | eSignature | Date/Time | | eSignature | Date/Time |

Matrices: W Carrier name: FedEx

| | | | |
|---|---|---|---|
| Shipping container/cooler in good condition? | Yes ☑ | No ☐ | Not Present ☐ |
| Custody seals intact on shipping container/cooler? | Yes ☑ | No ☐ | Not Present ☐ |
| Custody seals intact on sample bottles? | Yes ☐ | No ☐ | Not Present ☑ |
| VOA/TX1005/TX1006 Solids in hermetically sealed vials? | Yes ☐ | No ☐ | Not Present ☑ |
| Chain of custody present? | Yes ☑ | No ☐ | 1 Page(s) |
| Chain of custody signed when relinquished and received? | Yes ☑ | No ☐ | |
| Samplers name present on COC? | Yes ☑ | No ☐ | |
| Chain of custody agrees with sample labels? | Yes ☑ | No ☐ | |
| Samples in proper container/bottle? | Yes ☑ | No ☐ | |
| Sample containers intact? | Yes ☑ | No ☐ | |
| Sufficient sample volume for indicated test? | Yes ☑ | No ☐ | |
| All samples received within holding time? | Yes ☑ | No ☐ | |
| Container/Temp Blank temperature in compliance? | Yes ☑ | No ☐ | |

| | | |
|---|---|---|
| Temperature(s)/Thermometer(s): | 1.9UC/1.8C | IR31 |
| Cooler(s)/Kit(s): | 50156 | |
| Date/Time sample(s) sent to storage: | 9/13/23 | |

| | | | |
|---|---|---|---|
| Water - VOA vials have zero headspace? | Yes ☑ | No ☐ | No VOA vials submitted ☐ |
| Water - pH acceptable upon receipt? | Yes ☑ | No ☐ | N/A ☐ |
| pH adjusted? | Yes ☐ | No ☑ | N/A ☐ |
| pH adjusted by: | | | |

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

Corrective Action:

# CHAIN OF CUSTODY

Name Of Lab Shipping To: ALS 10450 Stancliff Rd. Suite 210 Houston, TX. 77099 (281) 530-5656 ATTN: James Guin



**Project:** BHATE
LONGHORN ARMY AMMN. PLANT (LHAAP)
GROUNDWATER TREATMENT PLANT (GWTP)
KARNACK, TEXAS

**Project No.** JVPCIBH.0001

**Job:** GROUNDWATER TREATMENT PLANT WEEKLY SAMPLES

**Prepared By:** Scott Beesinger

**P.O. Number**

**HS23090716**

Bhate Environmental Associates, Inc.
GROUNDWATER TREATMENT PLANT WEEKLY S

| Field Sample I.D. | Sample Matrix | Date / Time | MS / MSD | No. OF CONTAINERS | Analyses: AMMONIA-N | TOTAL ORGANIC CARBON | ORTHO-PHOSPHATE | PERCHLORATE | Remarks (Preservatives, etc.) | Lab I.D.# |
|---|---|---|---|---|---|---|---|---|---|---|
| LH18/24-SP650_091223 | Water | 09/12/23 / 13:00 | | 3 | X | X | | | H2SO4 | |
| LH18/24-SP650_091223 | Water | 09/12/23 / 13:00 | | 1 | | | X | | NONE | |
| LH18/24-SP650_091223_BIX | Water | 09/12/23 / 13:00 | | 1 | | | | X | NONE | |
| LH18/24-SP650_091223_AIX | Water | 09/12/23 / 13:00 | | 1 | | | | X | NONE | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

**Additional Remarks:** 24 HR. TAT on Perchlorate Samples. Standard TAT on all other parameters

| Relinquished By: | Date | Time | Received By: | Date | Time | Relinquished By: | Date | Time | Received By: | Date | Time |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Scott Beesinger | 09/12/23 | 13:30 | CG | 9-13-23 | 0755 | | | | | | |

**For Lab Use Only**

| Received At Lab By: | Date | Time | Airbill No. | Opened By: | Date | Time | Temp of Container | Seal No. | Condition |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |

**Remarks:**

5019B 1831 1.9°

(Word) S:\1-ces\Forms\Chain of Custody - BiWeekly

ALS
10450 Stancliff Rd., Suite 210
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5887

50156

CUSTODY SEAL

Date: 9/12/23 Time: 1330

Name: Scott Beesinger

Company: Battelle

Seal Broken By:

Date: 9/13/23

50156 SEP 13 2023

50156

ORIGIN ID:SGRA (903) 930-6193
SCOTT BEESINGER
APTIM ENVIRONMENTAL & INFRASTRUCTURE
1203-B EAST GRAND AVE
PMB 202
MARSHALL, TX 75670
UNITED STATES-US

SHIP DATE: 26JAN22
ACTWGT: 1.00 LB MAN
CAD: 0221247/CAFE3509
DIMS: 19x16x13 IN

10 SHIPPING DEPT
ALS LABORATORY GROUP
10450 STANCLIFF RD
SUITE 210
HOUSTON TX 77099
(281) 530-5656
REF: LHAAP-46-BO 83270-RG

RMA:

FedEx Express

FedEx
TRK# (0221) 5300 5227 3760

WED - 13 SEP 10:30A
PRIORITY OVERNIGHT

AB SGRA

77099
TX-US IAH

September 14, 2023 Service Request No:E2300826

James Guin
ALS Environmental - US
10450 Stancliff Rd #210
Houston, TX 77099

**Laboratory Results for: HS23090716**

Dear James,

Enclosed are the results of the sample(s) submitted to our laboratory September 13, 2023
For your reference, these analyses have been assigned our service request number **E2300826.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current TNI standards, where applicable, and except as noted in the laboratory case narrative provided. All results are intended to be considered in their entirety and ALS Environmental is not responsible for use of less than the complete final report. Results apply only to the items submitted to the laboratory, as received for analysis. In accordance with the current TNI Standard, a statement on the estimated uncertainty of measurement of any quantitative analysis will be supplied upon request.

Please contact me if you have any questions. My extension is 2190. You may also contact me via email at hussam.kelany@alsglobal.com.

Respectfully submitted,

**ALS Group USA, Corp. dba ALS Environmental**

H Kelany

Hussam Kelany
Project Manager

ADDRESS 10450 Stancliff Rd., Suite 210, Houston, TX 77099
PHONE +1 281 530 5656 | FAX +1 281 530 5887
ALS Group USA, Corp.
dba ALS Environmental

# Certificate of Analysis

**ALS Environmental - Houston Specialties Laboratory**
10450 Stancliff Rd., Suite 210, Houston TX 77099
Phone (281)530-5656 Fax (281)530-5887
www.alsglobal.com

| | | | |
|---|---|---|---|
| **Client:** | ALS Environmental - US | **Service Request No.:** | E2300826 |
| **Project:** | HS23090716 | **Date Received:** | 09/13/23 |
| **Sample Matrix:** | Water | | |

## CASE NARRATIVE

All analyses were performed in adherence to the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier IV. When appropriate to the method, method blank results have been reported with each analytical test.

### Sample Receipt

Two samples were received for analysis at ALS Environmental in Houston on 09/13/23.

The samples were received in good condition and are consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

### Data Validation Notes and Discussion

**Precision and Accuracy:**

EQ2300447: Laboratory Control Spike/Duplicate Laboratory Control Spike (LCS/DLCS) samples were analyzed and reported in addition to a MS/MSD for this extraction batch.

The batch precision (MS/DMS) measurements were determined on an unrelated sample in the extraction batch. The MS/DMS results are not included in this report.

*The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and ALS Environmental (ALS) is not responsible for utilization of less than the complete report.*

*Use of ALS group USA Corp dba ALS Environmental (ALS)'s Name. Client shall not use ALS's name or trademark in any marketing or reporting materials, press releases or in any other manner ("Materials") whatsoever and shall not attribute to ALS any test result, tolerance or specification derived from ALS's data ("Attribution") without ALS's prior written consent, which may be withheld by ALS for any reason in its sole discretion. To request ALS's consent, Client shall provide copies of the proposed Materials or Attribution and describe in writing Client's proposed use of such Materials or Attribution. If ALS has not provided written approval of the Materials or Attribution within ten (10) days of receipt from Client, Client's request to use ALS's name or trademark in any Materials or Attribution shall be deemed denied. ALS may, in its discretion, reasonably charge Client for its time in reviewing Materials or Attribution requests. Client acknowledges and agrees that the unauthorized use of ALS's name or trademark may cause ALS to incur irreparable harm for which the recovery of money damages will be inadequate. Accordingly, Client acknowledges and agrees that a violation shall justify preliminary injunctive relief. For questions contact the laboratory.*

**Client:** ALS Environmental - US **Service Request:**E2300826
**Project:** HS23090716

## SAMPLE CROSS-REFERENCE

| SAMPLE # | CLIENT SAMPLE ID | DATE | TIME |
|---|---|---|---|
| E2300826-001 | LH18/24-SP650_091223_BIX | 9/12/2023 | 1300 |
| E2300826-002 | LH18/24-SP650_091223_AIX | 9/12/2023 | 1300 |

# Service Request Summary

**Folder #:** **E2300826**
Client Name: ALS Environmental - US
Project Name: HS23090716
Project Number:

**Report To:** James Guin
ALS Environmental - US
10450 Stancliff Rd #210
Houston, TX 77099
USA
Phone Number: 281-530-5656
Cell Number:
Fax Number:
E-mail: james.guin@alsglobal.com

Project Chemist: Hussam Kelany
Originating Lab: HOUSTON
Logged By: CGRANDITS
Date Received: 09/13/23
Internal Due Date: 9/14/2023
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS23090716
EDD: BASIC_WQC_CASNo_LOD

2 120 mL-Plastic Bottle Natural WM Unpreserved
**Location:** EHRMS-AirArch 1
**Pressure Gas:**
**Rush**

| Lab Samp No. | Client Samp No | Matrix | Collected | HOUSTON<br>ClO4 DOD/6850 |
|---|---|---|---|---|
| E2300826-001 | LH18/24-SP650_091223_BIX | Water | 09/12/23 1300 | **IV** |
| E2300826-002 | LH18/24-SP650_091223_AIX | Water | 09/12/23 1300 | **IV** |

# Service Request Summary

**Folder #:** **E2300826**
Client Name: ALS Environmental - US
Project Name: HS23090716
Project Number:

**Report To:** James Guin
ALS Environmental - US
10450 Stancliff Rd #210
Houston, TX 77099
USA
Phone Number: 281-530-5656
Cell Number:
Fax Number:
E-mail: james.guin@alsglobal.com

Project Chemist: Hussam Kelany
Originating Lab: HOUSTON
Logged By: CGRANDITS
Date Received: 09/13/23
Internal Due Date: 9/14/2023
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS23090716
EDD: BASIC_WQC_CASNo_LOD

2 120 mL-Plastic Bottle Natural WM Unpreserved
**Location:** EHRMS-AirArch 1
**Pressure Gas:**
**Rush**

## Test Comments:

| Group | Test/Method | Samples | Comments |
|---|---|---|---|
| Semivoa GCMS | ClO4 DOD/6850 | 2 | Level IV due 9/27 |

# Data Qualifiers

## Lab Standard

| | |
|---|---|
| + | Possible Tedlar bag artifact. |
| A | TIC is a suspected aldol-condensation product |
| B | Analyte found in the associated method blank as well as in the sample. |
| BC | Reported results are not blank corrected. |
| BH | The back section of the tube yielded higher results than the front. |
| BT | Results indicated possible breakthrough; back section >=10% front section. |
| C | Result identification confirmed. |
| D | Compound identified in an analysis at a secondary dilution factor |
| D | Spike was diluted out |
| DE | Reported results are corrected for desorption efficiency. |
| E | Estimated value. Concentration above calibration range |
| E | The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample. |
| F | The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard. |
| H | The chromatographic fingerprint of the sample resembles a petroleum product but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard. |
| H1 | Sample analysis performed past holding time. See case narrative. |
| H2 | Initial analysis within holding time. Reanalysis for the required dilution was past holding time. |
| H3 | Sample was received and analyzed past holding time. |
| H4 | Sample was extracted past required extraction holding time, but analyzed within analysis holding time. See case narrative. |
| I | (Auto) The reference ion ratio was outside acceptance criteria, which may indicate a potential bias to this result. |
| I | Internal standard not within the specified limits. See case narrative. |
| I | The reference ion ratio was outside acceptance criteria, which may indicate a potential bias to this result. |
| J | Estimated Value. Concentration found below MRL. |
| K | A deflection in the QC ion may indicate interference with the quantitation of this ion. The concentration of this analyte should be considered as an estimate. |
| K | Analyte was detected above the method reporting limit prior to normalization. |
| K | The reference ion ratio was outside acceptance criteria, which may indicate a potential bias to this result. |
| L | The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard. |
| L1 | Laboratory control sample recovery outside the specified limits; results may be biased high. |
| L2 | Laboratory control sample recovery outside the specified limits; results may be biased low. |
| L3 | Laboratory control sample recovery outside the specified limits. |
| M | Matrix interference; results may be biased high. |
| M | The duplicate injection precision not met. |

# Data Qualifiers

## Lab Standard

| | |
|---|---|
| M1 | Matrix interference due to coelution with a non-target compound; results may be biased high. |
| N | Presumptive evidence of a compound for TICs that have been identified based on a mass spectral library search. |
| N | The Matrix Spike sample recovery is not within control limits. See case narrative. |
| O | The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard. |
| P | Indicates chlorodiphenyl ether interference present at the retention time of the target compound. |
| P | Pesticide/Aroclor target analyte > 40% difference for detected concentrations between GC columns |
| Q | Indicates as estimated value because the P and P + 2 theoretical abundance ratio does not meet method criteria. |
| R | Duplicate Precision not met. |
| R1 | Duplicate precision not within the specified limits; however, the results are below the MRL and considered estimated. |
| S | Surrogate recovery not within specified limits. |
| S | The reported value was determined by the Method of Standard Additions (MSA). |
| T | Analyte is a tentatively identified compound, result is estimated. |
| U | Compound was analyzed for, but was not detected (ND). |
| V1 | The continuing calibration verification standard was outside (biased high) the specified limits for this compound. |
| V2 | The continuing calibration verification standard was outside (biased low) the specified limits for this compound. |
| W | Result quantified, but the corresponding peak was detected outside the generated retention time window. |
| W | The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance. |
| X | See case narrative. |
| Y | Recovery outside limits |
| Y | The chromatogram resembles a petroleum product but does not match the calibration standard. |
| Z | The chromatogram does not resemble a petroleum product. |
| i | The MRL/MDL has been elevated due to a matrix interference. |

# ALS Laboratory Group

**Acronyms**

| | |
|---|---|
| Cal | Calibration |
| Conc | CONCentration |
| Dioxin(s) | Polychlorinated dibenzo-p-dioxin(s) |
| EDL | Estimated Detection Limit |
| EMPC | Estimated Maximum Possible Concentration |
| Flags | Data qualifiers |
| Furan(s) | Polychlorinated dibenzofuran(s) |
| g | Grams |
| ICAL | Initial CALibration |
| ID | IDentifier |
| Ions | Masses monitored for the analyte during data acquisition |
| L | Liter (s) |
| LCS | Laboratory Control Sample |
| DLCS | Duplicate Laboratory Control Sample |
| MB | Method Blank |
| MCL | Method Calibration Limit |
| MDL | Method Detection Limit |
| mL | Milliliters |
| MS | Matrix Spiked sample |
| DMS | Duplicate Matrix Spiked sample |
| NO | Number of peaks meeting all identification criteria |
| PCDD(s) | Polychlorinated dibenzo-p-dioxin(s) |
| PCDF(s) | Polychlorinated dibenzofuran(s) |
| ppb | Parts per billion |
| ppm | Parts per million |
| ppq | Parts per quadrillion |
| ppt | Parts per trillion |
| QA | Quality Assurance |
| QC | Quality Control |
| Ratio | Ratio of areas from monitored ions for an analyte |
| % Rec. | Percent recovery |
| RPD | Relative Percent Difference |
| RRF | Relative Response Factor |
| RT | Retention Time |
| SDG | Sample Delivery Group |
| S/N | Signal-to-noise ratio |
| TEF | Toxicity Equivalence Factor |
| TEQ | Toxicity Equivalence Quotient |

10450 Stancliff Rd, Houston, TX 77099 | 281-530-5656 | www.alsglobal.com

ALS Environmental

## State Certifications, Accreditations, and Licenses

| Agency | Number | Expire Date |
|---|---|---|
| Arizona Department of Health Services | AZ0793_2024 | 5/27/2024 |
| Arkansas Department of Environmental Quality | 88-00356 | 3/27/2024 |
| California State Environmental Laboratory Accreditation Program | 2919 | 4/30/2024 |
| Department of Defense | L23-358 | 5/31/2025 |
| Department of Defense | L22-90 | 3/31/2024 |
| Florida Department of Health | E87611-38 | 6/30/2024 |
| Illinois Environmental Protection Agency | 2000322023-11 | 6/30/2024 |
| Kansas Department of Health and Environment | E-10352 2023-2024 | 7/31/2024 |
| Louisiana Department of Environmental Quality | 03087-2023 | 6/30/2024 |
| Louisiana Department of Health and Hospitals | LA028-2023 | 12/31/2023 |
| Maine Department of Health and Human Services | 2022017 | 6/5/2024 |
| Maryland Department of the Environment | 343-2023 | 6/30/2024 |
| Michigan Depratment of Environmental Quality | 9971-2023 | 4/30/2024 |
| Minnesota Department of Health | 2368363 | 12/31/2023 |
| Nebraska Department of Health and Human Services | NE-OS-25-13 | 4/30/2024 |
| Nevada Division of Environmental Protection | TX026932024-1 | 7/31/2024 |
| New Hampshire Environmental Laboratory Accreditation Program | 209423 | 4/24/2024 |
| New Jersey Department of Environmental Protection | TX008-2024 | 6/30/2024 |
| New York Department of Health | 11707 | 3/31/2024 |
| Oregon Environmental Laboratory Accreditation Program | TX200002-011 | 5/15/2024 |
| Pennsylvania Department of Environmental Protection | 68-03441-017 | 6/30/2024 |
| Perry Johnson Laboratory Accreditation | L22-91 | 3/31/2024 |
| Tennessee Department of Environment and Concervation | TN04016-2023 | 4/30/2024 |
| Texas Commision on Environmental Quality | T104704231-23-30 | 4/30/2024 |
| Utah Department of Health Environmental Laboratory Certification | TX026932023-14 | 7/31/2024 |
| Washington Department of Ecology | C819-22 | 11/14/2023 |

# Chain of Custody

**ALS Environmental - Houston Specialties Laboratory**
10450 Stancliff Rd., Suite 210, Houston TX 77099
Phone (281)530-5656 Fax (281)530-5887
www.alsglobal.com

10450 Stancliff Rd, Ste 210
Houston, TX 77099
**T:** +1 281 530 5656
**F:** +1 281 530 5887
**www.alsglobal.com**

# Subcontract Chain of Custody

**SAMPLING STATE:** **Dept of Defense** **COC ID:** **23147**

**SUBCONTRACT TO:**

ALS Environmental
10450 Stancliff RoadSuite 210
Houston, TX 77084

**Phone:** +1 281 530 5656

**CUSTOMER INFORMATION:**

| | |
|---|---|
| **Company:** | ALS Houston |
| **Contact:** | James Guin |
| **Address:** | 10450 Stancliff Rd, Ste 210 |
| **Phone:** | +1 281 530 5656 |
| **Email:** | James.Guin@alsglobal.com |
| **Alternate Contact:** | Jumoke M. Lawal |
| **Email:** | jumoke.lawal@alsglobal.com |

**INVOICE INFORMATION:**

| | |
|---|---|
| **Company:** | ALS Houston |
| **Contact:** | Accounts Payable |
| **Address:** | 10450 Stancliff Rd, Ste 210 |
| **Phone:** | +1 281 530 5656 |
| **Reference:** | HS23090716 |
| **TSR:** | Holly Tignac |

| | LAB SAMPLE ID | CLIENT SAMPLE ID | MATRIX | COLLECT DATE |
|---|---|---|---|---|
| | ANALYSIS REQUESTED | | | DUE DATE |
| 1. | **HS23090716-02** | **LH18/24-SP650_091223_BIX** | **Water** | **12 Sep 2023 13:00** |
| | 6850-Perch. DOD Level II & Level IV in separate pdf | | | 14 Sep 2023 |
| 2. | **HS23090716-03** | **LH18/24-SP650_091223_AIX** | **Water** | **12 Sep 2023 13:00** |
| | 6850-Perch. DOD Level II & Level IV in separate pdf | | | 14 Sep 2023 |

**Comments:** Please analyze for the analysis listed above.
Send report to the emails shown above.

**QC Level:** DOD IV (DoD Data Package)

E2300826
ALS Environmental - US
HS23090716
5

Relinquished By: PC Date/Time:

Received By: Date/Time: 9-13-23 0825

Cooler ID(s): Temperature(s):

ALS Environmental

# Cooler Receipt Form

Project Chemist H

Client/Project ALS

Thermometer ID 1231

Date/Time Received: 9-13-23 Initials: cg

Date/Time Logged in: 9-13-23 Initials cg

1. Method of delivery: ○ US Mail ○ Fed Ex ○ UPS ○ DHL ☒ Courier (ALS) ○ Client

2. Samples received in: ☒ Cooler ○ Box ○ Envelope ○ Other

3. Were custody seals on coolers? ○ Yes ☒ No — If yes, how many and where?

Were they intact? ○ Yes ○ No ☒ N/A

Were they signed and dated? ○ Yes ○ No ☒ N/A

4. Packing Material: ○ Inserts ☒ Baggies ☑ Bubble Wrap ○ Gel Packs ☑ Wet Ice ○ Sleeves ○ Other

5. Foreign or Regulated Soil? ○ Yes ○ No Location of Sampling:

| Cooler Tracking Number | COC ID | Date Opened | Time Opened | Opened By | Temp °C | Temp Blank? |
|---|---|---|---|---|---|---|
| - | | 9-13-23 | 1223 | cg | 3.3 | ☐ |
| | | | | | | ☐ |
| | | | | | | ☐ |
| | | | | | | ☐ |

6. Were custody papers properly filled out (ink, signed, dated, etc)? ☒ Yes ○ No

7. Did all bottles arrive in good condition (not broken, no signs of leakage)? ☒ Yes ○ No

8. Were all sample labels complete (i.e., sample ID, analysis, preservation, etc)? ☒ Yes ○ No

9. Were appropriate bottles/containers and volumes received for the requested tests? ☒ Yes ○ No

10. Did sample labels and tags agree with custody documents? ☒ Yes ○ No

Notes, Discrepancies, & Resolutions:

Service request Label: E2300826 5

ALS Environmental - US
HS23090715

HS-HRMSCoolerReceipt R1.0

ALS Environmental - Houston HRMS

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# SAMPLE ACCEPTANCE POLICY

This policy outlines the criteria samples must meet to be accepted by ALS Environmental – Houston HRMS.

**Cooler Custody Seals (desirable, mandatory if specified in SAP):**

- ✓ Intact on outside of cooler, signed and dated

**Chain-of-Custody (COC) documentation (mandatory):**

The following is required on each COC:

- ✓ Sample ID, the location, date and time of collection, collector's name, preservation type, sample type, and any other special remarks concerning the sampleThe COC must be completed in ink.
- ✓ Signature and date of relinquishing party.

In the absence of a COC at sample receipt, the COC will be requested from the client.

**Sample Integrity (mandatory):**

Samples are inspected upon arrival to ensure that sample integrity was not compromised during transfer to the laboratory.

- ✓ Sample containers must arrive in good condition (not broken or leaking).
- ✓ Samples must be labeled appropriately, including Sample IDs, and requested test using durable labels and indelible ink.
- ✓ The correct type of sample bottle must be used for the method requested.
- ✓ An appropriate sample volume, or weight, must be received.
- ✓ Sample IDs and number of containers must reconcile with the COC.
- ✓ Samples must be received within the method defined holding time.

**Temperature Requirement (varies by sample matrix):**

- ✓ Aqueous and Non-aqueous samples must be shipped and stored cold, at 0 to 6ºC.
- ✓ Tissue samples must be shipped and stored frozen, at -20 to -10ºC.
- ✓ Air samples are shipped and stored cold, at 0 to 6ºC
- ✓ The sample temperature must be recorded on the COC

All cooler inspections are documented on the Cooler Receipt Form (CRF). A separate CRF is completed for each service request. Any samples not meeting the above criteria are noted on the CRF and the Project Manager notified. The Project Manager must resolve any sample integrity issues with the client prior to proceeding with the analysis. Such resolutions are documented in writing and filed with the project folder. Data associated with samples received outside of this acceptance policy will be qualified on the case narrative of the final report

# Preparation Information Benchsheets

**ALS Environmental - Houston Specialties Laboratory**
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Phone (281)530-5656 Fax (281)530-5887
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# *Preparation Information Benchsheet*

**Prep Run#:** 426475 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
**Team:** Semivoa GCMS/XMI **Prep Method:** **Prep Date/Time:** 9/14/23 08:10

| # | Lab Code | Client ID | B# | Method /Test | pH | Cl | Matrix | Amt. Ext. | Sample Description |
|---|---|---|---|---|---|---|---|---|---|
| 1 | E2300814-001 | 130_090723 | .01 | 6850/ClO4 DOD | | | Ground Water | 10mL | |
| 2 | E2300814-002 | 17WW03_090723 | .01 | 6850/ClO4 DOD | | | Ground Water | 10mL | |
| 3 | E2300814-003 | 17WW01_090723 | .01 | 6850/ClO4 DOD | | | Ground Water | 10mL | |
| 4 | E2300814-004 | 17WW02_090723 | .01 | 6850/ClO4 DOD | | | Ground Water | 10mL | |
| 5 | E2300814-005 | 17WW02_090723_a | .01 | 6850/ClO4 DOD | | | Ground Water | 10mL | |
| 6 | E2300814-006 | 17WW06_090723 | .02 | 6850/ClO4 DOD | | | Ground Water | 10mL | |
| 7 | E2300826-001 | LH18/24-SP650_091223_BIX | .01 | 6850/ClO4 DOD | | | Water | 10mL | |
| 8 | E2300826-002 | LH18/24-SP650_091223_AIX | .01 | 6850/ClO4 DOD | | | Water | 10mL | |
| 9 | E2300827-001 | LH18/24-SP650_091223_AIX | .01 | 6850/ClO4 DOD | | | Water | 10mL | |
| 10 | E2300828-001 | LH18/24-SP140_091223 | .01 | 6850/ClO4 DOD | | | Water | 10mL | |
| 11 | EQ2300447-01 | MB | | 6850/ClO4 | | | Liquid | 10mL | |
| 12 | EQ2300447-02 | LCS | | 6850/ClO4 | | | Liquid | 10mL | |
| 13 | EQ2300447-03 | DLCS | | 6850/ClO4 | | | Liquid | 10mL | |
| 14 | EQ2300447-04 | 17WW06_090723 MS | .02 | 6850/ClO4 DOD | | | Liquid | 10mL | |
| 15 | EQ2300447-05 | 17WW06_090723 DMS | .02 | 6850/ClO4 DOD | | | Liquid | 10mL | |
| 16 | K2310104-001 | LGAC-INF-091123 | .01 | 6850/ClO4 | | | Water | 10mL | |
| 17 | K2310104-002 | LGAC-INT1-091123 | .01 | 6850/ClO4 | | | Water | 10mL | |
| 18 | K2310104-003 | LGAC-INT2-091123 | .01 | 6850/ClO4 | | | Water | 10mL | |

## Spiking Solutions

Name: Perchlorate Intermediate Stock1 Inventory ID 230342 Logbook Ref: Perchlorate (1st Source) Expires On: 03/07/2024

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| EQ2300447-02 | 1.00µL | EQ2300447-02 | 1.00µL | EQ2300447-03 | 1.00µL | EQ2300447-03 | 1.00µL | EQ2300447-04 | 1.00µL | EQ2300447-05 | 1.00µL |

Name: Perchlorate Internal Standard 1ug/mL Inventory ID 230372 Logbook Ref: Perchlorate Internal Standard Expires On: 04/30/2024

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| E2300814-001 | 100.00µL | E2300814-002 | 100.00µL | E2300814-003 | 100.00µL | E2300814-004 | 100.00µL | E2300814-005 | 100.00µL | E2300814-006 | 100.00µL |
| E2300826-001 | 100.00µL | E2300826-002 | 100.00µL | E2300827-001 | 100.00µL | E2300828-001 | 100.00µL | EQ2300447-01 | 100.00µL | EQ2300447-01 | 100.00µL |
| EQ2300447-02 | 100.00µL | EQ2300447-02 | 100.00µL | EQ2300447-03 | 100.00µL | EQ2300447-03 | 100.00µL | EQ2300447-04 | 100.00µL | EQ2300447-05 | 100.00µL |
| K2310104-001 | 100.00µL | K2310104-002 | 100.00µL | K2310104-003 | 100.00µL | | | | | | |

## Preparation Materials

| | | | | | |
|---|---|---|---|---|---|
| Water HPLC Grade | HPLC water 5/18/23CG (229315) | 6850 Amber Glass screw vial | 2mL Screw Top Vial (221894) | 6850 0.45um syringe filters | 6850 0.45 SYRING FILTER (229979) |
| 6850 20mM amonium acetate in H2O | (230746) | 6850 Luer-Lok Syringes | luer-lock syringes (228116) | | |

# *Preparation Information Benchsheet*

**Prep Run#:** 426475 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
**Team:** Semivoa GCMS/XMI **Prep Method:** **Prep Date/Time:** 9/14/23 08:10

## Preparation Steps

Step: Preparation
Started: 9/14/23 08:10
Finished: 9/14/23 09:10
By: XMI
Comments

Comments: _____

Reviewed By: _____ Date: _____

Chain of Custody

Relinquished By: _____ Date: _____ Extracts Examined

Received By: _____ Date: _____ Yes No

# Analytical Results

**ALS Environmental - Houston Specialties Laboratory**
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**ALS Group USA, Corp. dba ALS Environmental**

Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | ALS Environmental - US | **Service Request:** | E2300826 |
| **Project:** | HS23090716 | **Date Collected:** | 9/12/23 1300 |
| **Sample Matrix:** | Water | **Date Received:** | 9/13/23 |
| **Sample Name:** | LH18/24-SP650_091223_BIX | **Units:** | µg/L |
| **Lab Code:** | E2300826-001 | **Basis:** | NA |

**Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry**

**Analytical Method:** 6850

| Analyte Name | Result | Q | LOQ | LOD | MDL | Dilution Factor | Date Extracted | Date Analyzed | Extraction Lot | Analysis Lot | Note |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | **67.5** | | 0.500 | 0.250 | 0.125 | 5 | 9/14/23 | 9/14/23 11:32 | 426475 | 817192 | |

**ALS Group USA, Corp. dba ALS Environmental**

Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | ALS Environmental - US | **Service Request:** | E2300826 |
| **Project:** | HS23090716 | **Date Collected:** | 9/12/23 1300 |
| **Sample Matrix:** | Water | **Date Received:** | 9/13/23 |
| **Sample Name:** | LH18/24-SP650_091223_AIX | **Units:** | µg/L |
| **Lab Code:** | E2300826-002 | **Basis:** | NA |

**Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry**

**Analytical Method:** 6850

| Analyte Name | Result | Q | LOQ | LOD | MDL | Dilution Factor | Date Extracted | Date Analyzed | Extraction Lot | Analysis Lot | Note |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | **0.185** | | 0.100 | 0.0500 | 0.0250 | 1 | 9/14/23 | 9/14/23 11:38 | 426475 | 817192 | |

**ALS Group USA, Corp. dba ALS Environmental**

Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | ALS Environmental - US | **Service Request:** | E2300826 |
| **Project:** | HS23090716 | **Date Collected:** | NA |
| **Sample Matrix:** | Water | **Date Received:** | NA |
| **Sample Name:** | Method Blank | **Units:** | µg/L |
| **Lab Code:** | EQ2300447-01 | **Basis:** | NA |

**Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry**

**Analytical Method:** 6850

| Analyte Name | Result | Q | LOQ | LOD | MDL | Dilution Factor | Date Extracted | Date Analyzed | Extraction Lot | Analysis Lot | Note |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | ND | U | 0.100 | 0.0500 | 0.0250 | 1 | 9/14/23 | 9/14/23 10:51 | 426475 | 817192 | |

# Accuracy & Precision

**ALS Environmental - Houston Specialties Laboratory**
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**ALS Group USA, Corp. dba ALS Environmental**

QA/QC Report

**Client:** ALS Environmental - US
**Project:** HS23090716
**Sample Matrix:** Water

**Service Request:** E2300826
**Date Analyzed:** 9/14/23

## Lab Control Sample Summary
## Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

**Analytical Method:** 6850
**Prep Method:**

**Units:** µg/L
**Basis:** NA

**Extraction Lot:** 426475

| | Lab Control Sample EQ2300447-02 | | | Duplicate Lab Control Sample EQ2300447-03 | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Analyte Name** | **Result** | **Spike Amount** | **% Rec** | **Result** | **Spike Amount** | **% Rec** | **% Rec Limits** | **RPD** | **RPD Limit** |
| Perchlorate | 0.108 | 0.100 | 108 | 0.114 | 0.100 | 114 | 84 - 119 | 6 | 15 |

**Results flagged with an asterisk (*) indicate values outside control criteria.**

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

**ALS Group USA, Corp. dba ALS Environmental**

Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | ALS Environmental - US | **Service Request:** | E2300826 |
| **Project:** | HS23090716 | **Date Collected:** | NA |
| **Sample Matrix:** | Water | **Date Received:** | NA |
| **Sample Name:** | Lab Control Sample | **Units:** | µg/L |
| **Lab Code:** | EQ2300447-02 | **Basis:** | NA |

**Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry**

**Analytical Method:** 6850

| Analyte Name | Result | Q | LOQ | LOD | MDL | Dilution Factor | Date Extracted | Date Analyzed | Extraction Lot | Analysis Lot | Note |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | **0.108** | | 0.100 | 0.0500 | 0.0250 | 1 | 9/14/23 | 9/14/23 11:26 | 426475 | 817192 | |

**ALS Group USA, Corp. dba ALS Environmental**

Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | ALS Environmental - US | **Service Request:** | E2300826 |
| **Project:** | HS23090716 | **Date Collected:** | NA |
| **Sample Matrix:** | Water | **Date Received:** | NA |
| **Sample Name:** | Duplicate Lab Control Sample | **Units:** | µg/L |
| **Lab Code:** | EQ2300447-03 | **Basis:** | NA |

**Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry**

**Analytical Method:** 6850

| Analyte Name | Result | Q | LOQ | LOD | MDL | Dilution Factor | Date Extracted | Date Analyzed | Extraction Lot | Analysis Lot | Note |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | **0.114** | | 0.100 | 0.0500 | 0.0250 | 1 | 9/14/23 | 9/14/23 11:02 | 426475 | 817192 | |

# HS23090716 Wetchem NIT-AMM_W- E350.3 - ISE

ALS WO# HS23090716

NH3_AMM_S_ISE

ALS Laboratory Group

Logbook 323

# Ion Selective Electrode Logbook

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Analyst: AB | | | | | Date: 09/19/23 | | |
| Method: SM4500NH3-D/EPA 350.3 or SM4500 NH3 B-F | | | | | | | |
| Probe Calibration Date: 09/19/23 | | Cal Std ID: 322/146903-08 | | | Probe ID: NH3-8 | | |
| Std Level | | mV | Conc., mg/L: | | Sodium Thiosulfate ID: ~~3100607~~ – | | |
| STD 1 (mg/L): | | 0.199 | 136.2 | | Std Level | mV | Conc., mg/L. |
| STD 2 (mg/L): | | 1.221 | 101.8 | | STD 4 (mg/L): | 10.008 | 450 |
| STD 3 (mg/L): | | 5.010 | 63.2 | | STD 5 (mg/L): | 50.003 | ~20 |
| LSC / MS Spike ID: 3100607524 | | | | | ICAL Date & Slope: 100.3 / -59.7 | | |
| ICV Cal STD ID: 322/146903 | | | | | | | |
| DPD Reagent ID: ~~3100607513~~ – | | | | | | | |

| WO # / SX # | Bottle # | Initial g or ml | Final Vol. ml | Dilution Factor | Initial Conc. mg/L | Final Conc. mg/L | Chlorine Check ( +/– ) | Comments |
|---|---|---|---|---|---|---|---|---|
| ICV | | 50mL | 50mL | | 9.518 | | | |
| ICB | | ↓ | | | 0.003 | | | |
| MDL/L | | 25mL | | | 0.023 | | | |
| LCS | | | | | 9.483 | | | |
| HS23090289-09 | | | | | 1.544 | | | |
| 0289-09 MS | | | | | 11.558 | | | |
| 0289-09 MSD | | | | | 11.571 | | | |
| 0289-10 | | | | | 2.803 | | | |
| 524-06 | | | | | 0.278 | | | |
| 524-13 | | | | | 0.957 | | | |
| 524-14 | | | | | 0.191 | | | |
| 524-15 | | ↓ | | | 3.045 | | | |
| CCV | | 50mL | | | 9.444 | | | |
| CCB | | ↓ | | | 0.008 | | | |
| 524-16 | | 25mL | | | 0.282 | | | |
| CCV | | 50mL | | | 9.261 | | | |
| CCB | | ↓ | ↓ | | 0.009 | | | |

| Batch ID: 446785 | Reported By AB | Reviewed By: |
|---|---|---|


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NIT_AMM_N_C350.3 TSC
NIT_AMM_W_TSC

Logbook **323**

# Ion Selective Electrode Logbook

| | | | |
|---|---|---|---|
| Analyst: MB | | | Date: 09/19/23 |
| Method: SM4500NH3-D/EPA 350.3 or SM4500 NH3 B-F | | | |
| Probe Calibration Date: 09/19/23 | Cal Std ID: 322/46903-08 | | Probe ID: NH3-8 |

| Std Level | | mV | Conc., mg/L: |
|---|---|---|---|
| STD 1 (mg/L): | | 0.199 | 136.2 |
| STD 2 (mg/L): | | 1.201 | 10.8 |
| STD 3 (mg/L): | | 5.010 | 63.2 |

Sodium Thiosulfate ID: 3100606219

| Std Level | mV | Conc., mg/L: |
|---|---|---|
| STD 4 (mg/L): | 10.008 | 45.0 |
| STD 5 (mg/L): | 50.023 | -2.0 |

LSC / MS Spike ID: 3100607504
ICV Cal STD ID: —
DPD Reagent ID: 3100607513
ICAL Date & Slope: 100.3 x -59.7

| WO # / SX # | Bottle # | Initial g or ml | Final Vol. ml | Dilution Factor | Initial Conc. mg/L | Final Conc. mg/L | Chlorine Check ( +/– ) | Comments |
|---|---|---|---|---|---|---|---|---|
| ccv | | 50mL | 50mL | | 9.613 | | | |
| ccb | | | | | 0.008 | | | |
| mblk | | | | | 0.008 | | | |
| LCS | | | | | 8.803 | | | |
| HS23090376-01 | | | | | 1.794 | | - | |
| 429-31 | | | | | 38.238 | | | |
| 449-01 | | | | | 1.869 | | | |
| 449-01 ms | | | | | 11.561 | | | |
| 449-01 msd | | | | | 11.328 | | | |
| 576-01 | | | | | 1.232 | | | |
| 646-01 | | | | | 1.373 | | | |
| 716-01 | | | | | 23.642 | | | |
| ccv | | | | | 9.970 | | | |
| ccb | | | | | 0.008 | | | |
| 737-01 | | | | | 1.513 | | - | |
| 804-01 | | | | | 1.010 | | | |
| 808-01 | | | | | 0.054 | | | |
| 865-01 | | | | | 1.203 | | | |
| 781-01 | | | | | 21.435 | | | |
| 781-01 ms | | | | | 31.818 | | | |
| 781-01 msd | | | | | 31.431 | | | |
| ccv | | | | | 9.818 | | | |
| ccb | | | | | 0.008 | | | |
| | | | | | | | | |
| | | | | | | | | |

Batch ID: 446789, 446788 | Reported By: MB | Reviewed By:


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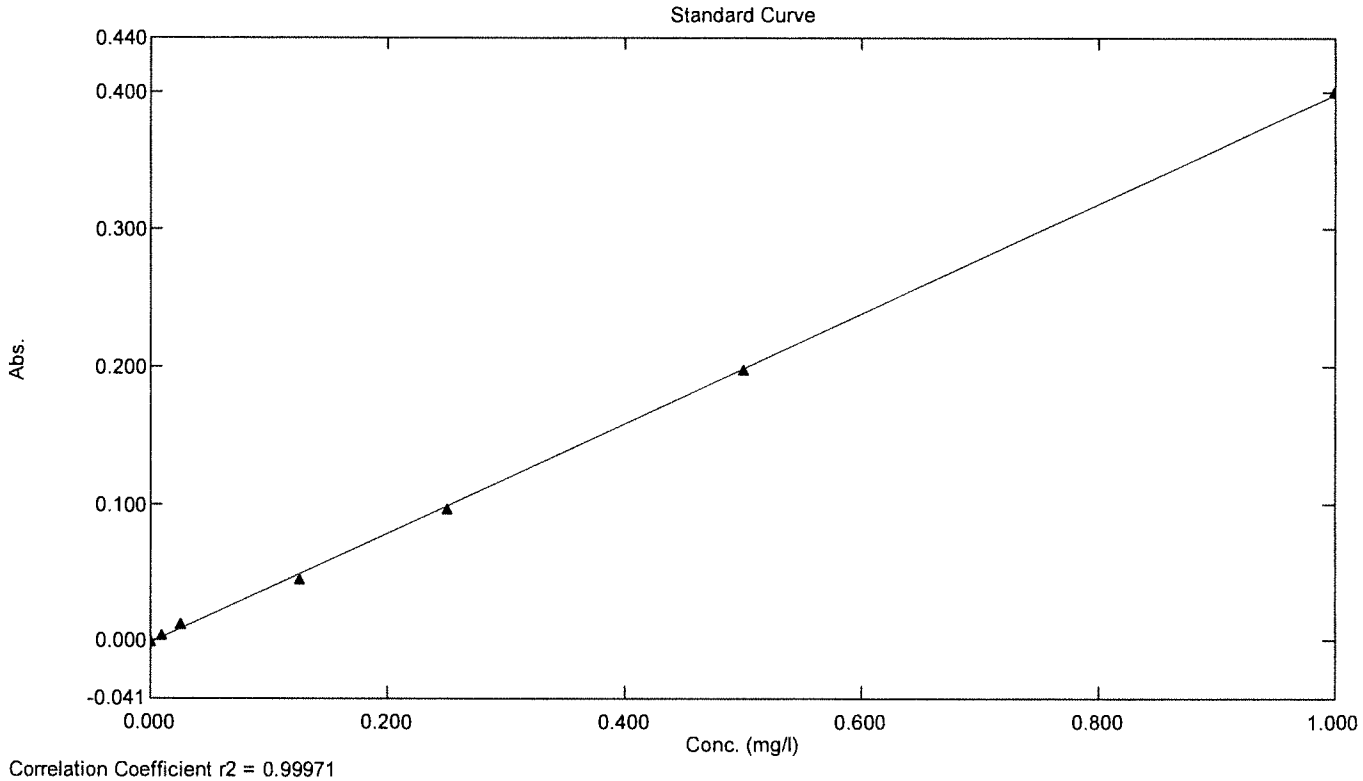
# HS23090716 Wetchem P-ORTHO

ALS WO# HS23090716

# Standard Table Report

09/19/2023 05:04:58 PM

File Name: C:\Program Files (x86)\Shimadzu\UVProbe\Data\P_ORTHO ( 365.3 METHOD)\2023\09132023_P_ORTHO_W.pho




Correlation Coefficient r2 = 0.99971

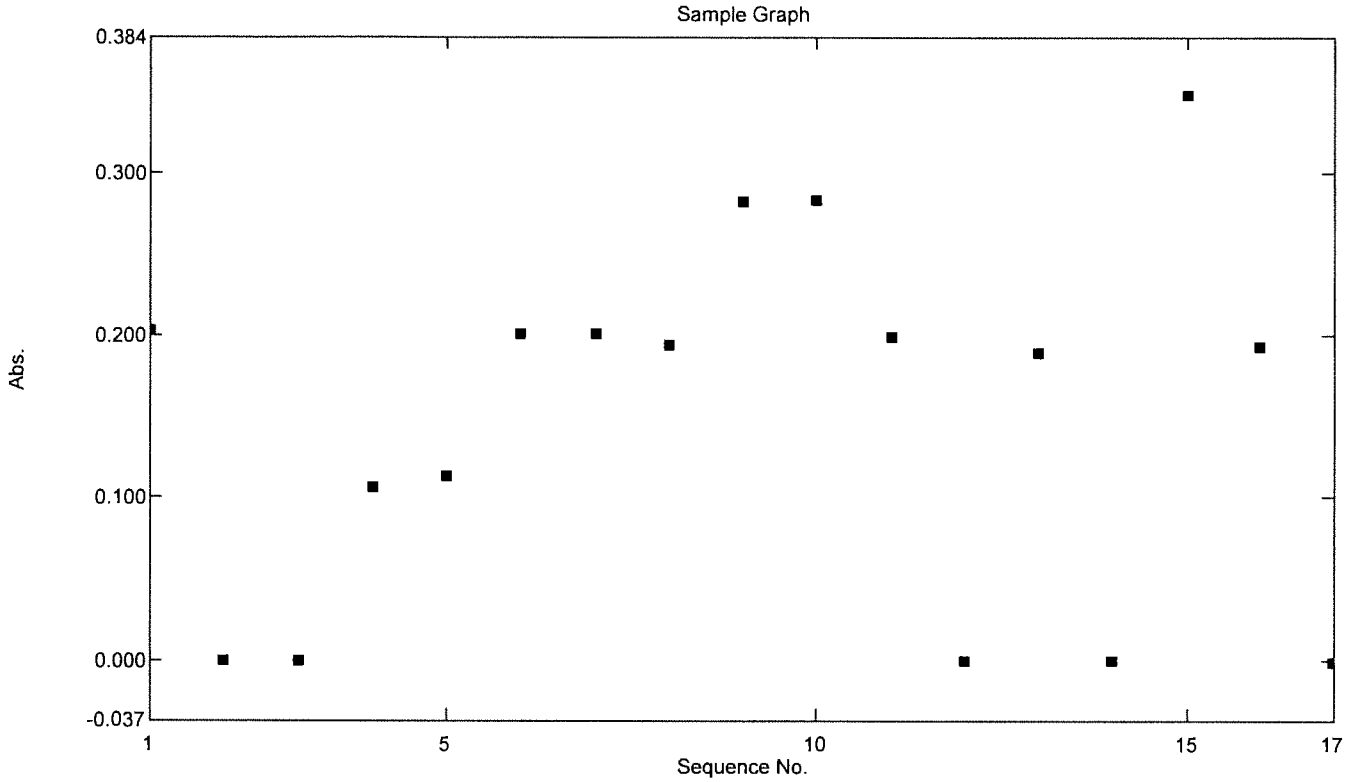
Standard Table

| | Sample ID | Type | Ex | Conc | WL650.0 | Wgt.Factor | Comments |
|---|---|---|---|---|---|---|---|
| 1 | STD1 | Standard | | 0.000 | -0.000 | 1.000 | |
| 2 | STD2 | Standard | | 0.010 | 0.005 | 1.000 | |
| 3 | STD3 | Standard | | 0.025 | 0.012 | 1.000 | |
| 4 | STD4 | Standard | | 0.125 | 0.045 | 1.000 | |
| 5 | STD5 | Standard | | 0.250 | 0.096 | 1.000 | |
| 6 | STD6 | Standard | | 0.500 | 0.197 | 1.000 | |
| 7 | STD7 | Standard | | 1.000 | 0.400 | 1.000 | |
| 8 | | | | | | | |

# Sample Table Report

09/19/2023 05:04:59 PM

File Name: C:\Program Files (x86)\Shimadzu\UVProbe\Data\P_ORTHO ( 365.3 METHOD)\2023\09132023_P_ORTHO_W.pho




Sample Table

| | Sample ID | Date | Time | Conc | WL650. | Comments |
|---|---|---|---|---|---|---|
| 1 | CCV | 09/13/2023 | 11:21:18 AM | 0.511 | 0.203 | 322146604 WC-24 |
| 2 | CCB | 09/13/2023 | 11:21:27 AM | 0.003 | 0.000 | |
| 3 | MBLK | 09/13/2023 | 11:21:33 AM | 0.003 | -0.000 | |
| 4 | LCS | 09/13/2023 | 11:22:02 AM | 0.270 | 0.107 | 322146603 WC-23 |
| 5 | HS23090566.01 | 09/13/2023 | 11:23:42 AM | 0.286 | 0.113 | 11N 3100607720 |
| 6 | HS23090566.01MS | 09/13/2023 | 11:24:03 AM | 0.506 | 0.201 | MOLYBDATE 322146301 |
| 7 | HS23090566.01MSD | 09/13/2023 | 11:24:21 AM | 0.507 | 0.201 | ACID 322145906 |
| 8 | HS23090566.02 | 09/13/2023 | 11:24:43 AM | 0.488 | 0.194 | |
| 9 | HS23090566.02MS | 09/13/2023 | 11:25:38 AM | 0.710 | 0.283 | |
| 10 | HS23090566.02MSD | 09/13/2023 | 11:25:56 AM | 0.714 | 0.284 | |
| 11 | CCV2 | 09/13/2023 | 11:26:08 AM | 0.501 | 0.199 | |
| 12 | CCB2 | 09/13/2023 | 11:26:19 AM | 0.004 | 0.000 | |
| 13 | CCV3 | 09/13/2023 | 04:48:52 PM | 0.476 | 0.189 | |
| 14 | CCB3 | 09/13/2023 | 04:49:04 PM | 0.002 | -0.001 | |
| 15 | HS23090716.01 | 09/13/2023 | 04:49:26 PM | 0.876 | 0.349 | DF=5X |
| 16 | CCV4 | 09/13/2023 | 04:49:46 PM | 0.485 | 0.193 | |
| 17 | CCB4 | 09/13/2023 | 04:49:56 PM | -0.000 | -0.001 | |
| 18 | | | | | | |

# HS23090716 Wetchem TOC_W

ALS WO# HS23090716

C:\TOC-L\Data\2023_09_20_001_CAL.tlx

| | Type | Analysis | Sam | Sample ID | Origin | Manual Diluti | Result | Notes | Status |
|---|---|---|---|---|---|---|---|---|---|
| 1 | Standard | NPOC | CAL | 3100607917 | 09.20.2023. | 1.000 | | | Completed |
| 2 | Unknown | NPOC | ICV | 3100607901 | 09.20.2023. | 1.000 | NPOC:9.91 | | Completed |
| 3 | Unknown | NPOC | ICB | | 09.20.2023. | 1.000 | NPOC:0.21 | | Completed |
| 4 | Unknown | NPOC | ICB | | 09.20.2023. | 1.000 | NPOC:0.19 | | Completed |
| 5 | Unknown | NPOC | ICB | | 09.20.2023. | 1.000 | NPOC:0.17 | | Completed |

C:\TOC-L\Data\2023_09_20_001_CAL.tlx

| | Date / Time | Vial |
|---|---|---|
| 1 | 9/20/2023 2:18:0 | 1, 2, 3, 4, 5, |
| 2 | 9/20/2023 2:32:2 | 8 |
| 3 | 9/20/2023 2:44:5 | 1 |
| 4 | 9/20/2023 3:08:1 | 10 |
| 5 | 9/20/2023 3:19:4 | 10 |

# TOC-Control L Report

2023_09_20_001_CAL.tlx

**Instr.Information**

| | |
|---|---|
| Instrument Options | TOC/ASI/IC Unit/ |
| Catalyst | Regular Sensitivity |

**Cal. Curve**

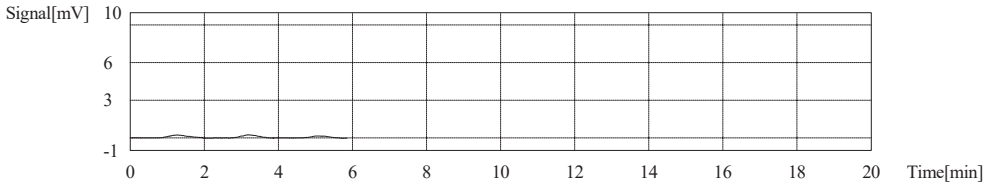
| | |
|---|---|
| Sample Name: | CAL |
| Sample ID: | 3100607917 |
| Cal. Curve: | 09.20.2023.1.2023_09_20_12_39_24.cal |
| Status | Completed |

| Type | Anal. |
|---|---|
| Standard | NPOC |

Conc: 0.000mg/L

| No. | Area | Inj. Vol. | Aut. Dil. | Rem. | Ex. | Date / Time |
|---|---|---|---|---|---|---|
| 1 | 0.6397 | 50uL | 1.000 | ******* | | 9/20/2023 12:48:01 PM |
| 2 | 0.8157 | 50uL | 1.000 | ******* | | 9/20/2023 12:50:09 PM |
| 3 | 0.3594 | 50uL | 1.000 | ******* | | 9/20/2023 12:52:21 PM |

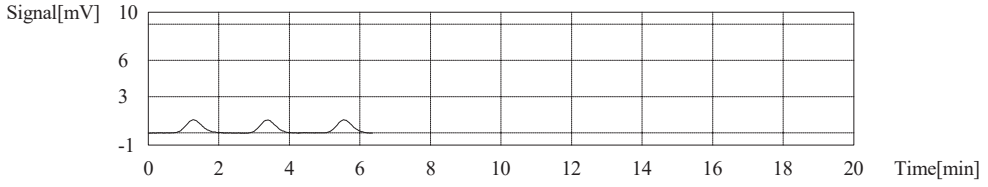
| | |
|---|---|
| Acid Add. | 1.500% |
| Sparge Gas Flow | 80mL/min |
| Sp. Time | 120.0sec |
| Mean Area | 0.6049 |




Conc: 1.000mg/L

| No. | Area | Inj. Vol. | Aut. Dil. | Rem. | Ex. | Date / Time |
|---|---|---|---|---|---|---|
| 1 | 3.485 | 50uL | 1.000 | ******* | | 9/20/2023 1:00:37 PM |
| 2 | 3.469 | 50uL | 1.000 | ******* | | 9/20/2023 1:02:59 PM |
| 3 | 3.420 | 50uL | 1.000 | ******* | | 9/20/2023 1:05:17 PM |

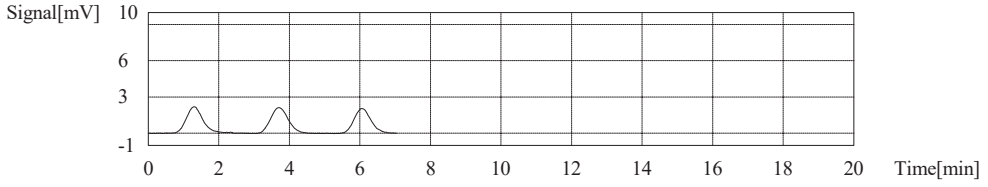
| | |
|---|---|
| Acid Add. | 1.500% |
| Sparge Gas Flow | 80mL/min |
| Sp. Time | 120.0sec |
| Mean Area | 3.458 |




Conc: 2.000mg/L

| No. | Area | Inj. Vol. | Aut. Dil. | Rem. | Ex. | Date / Time |
|---|---|---|---|---|---|---|
| 1 | 7.035 | 50uL | 1.000 | ******* | | 9/20/2023 1:13:50 PM |
| 2 | 7.655 | 50uL | 1.000 | ******* | | 9/20/2023 1:16:22 PM |
| 3 | 6.862 | 50uL | 1.000 | ******* | | 9/20/2023 1:18:55 PM |

| | |
|---|---|
| Acid Add. | 1.500% |
| Sparge Gas Flow | 80mL/min |
| Sp. Time | 120.0sec |
| Mean Area | 7.184 |



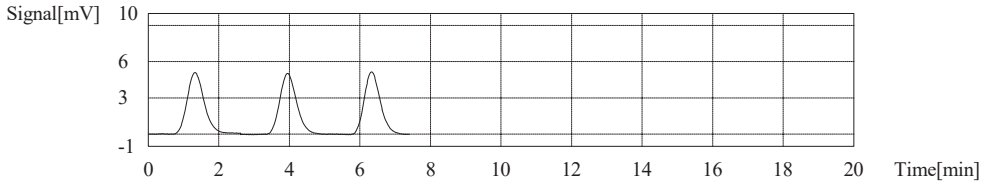
# TOC-Control L Report

2023_09_20_001_CAL.tlx

Conc: 5.000mg/L

| No. | Area | Inj. Vol. | Aut. Dil. | Rem. | Ex. | Date / Time |
|---|---|---|---|---|---|---|
| 1 | 17.06 | 50uL | 1.000 | ******* | | 9/20/2023 1:27:41 PM |
| 2 | 16.94 | 50uL | 1.000 | ******* | | 9/20/2023 1:30:24 PM |
| 3 | 16.69 | 50uL | 1.000 | ******* | | 9/20/2023 1:32:56 PM |

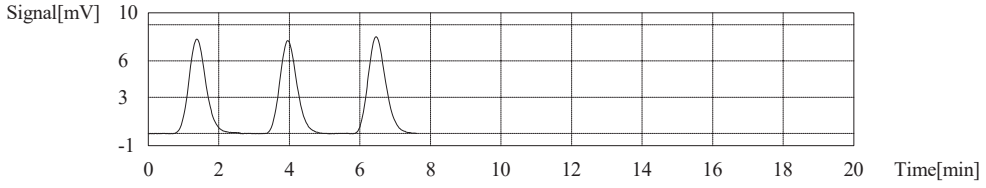
Acid Add. 1.500%
Sparge Gas Flow 80mL/min
Sp. Time 120.0sec
Mean Area 16.90




Conc: 10.00mg/L

| No. | Area | Inj. Vol. | Aut. Dil. | Rem. | Ex. | Date / Time |
|---|---|---|---|---|---|---|
| 1 | 26.63 | 50uL | 1.000 | ******* | | 9/20/2023 1:41:42 PM |
| 2 | 26.41 | 50uL | 1.000 | ******* | | 9/20/2023 1:44:28 PM |
| 3 | 28.29 | 50uL | 1.000 | ******* | | 9/20/2023 1:47:10 PM |

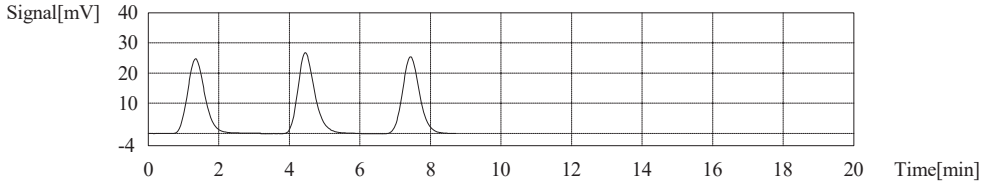
Acid Add. 1.500%
Sparge Gas Flow 80mL/min
Sp. Time 120.0sec
Mean Area 27.11




Conc: 25.00mg/L

| No. | Area | Inj. Vol. | Aut. Dil. | Rem. | Ex. | Date / Time |
|---|---|---|---|---|---|---|
| 1 | 84.87 | 50uL | 1.000 | ******* | | 9/20/2023 1:56:30 PM |
| 2 | 89.70 | 50uL | 1.000 | ******* | | 9/20/2023 1:59:36 PM |
| 3 | 86.23 | 50uL | 1.000 | ******* | | 9/20/2023 2:02:32 PM |

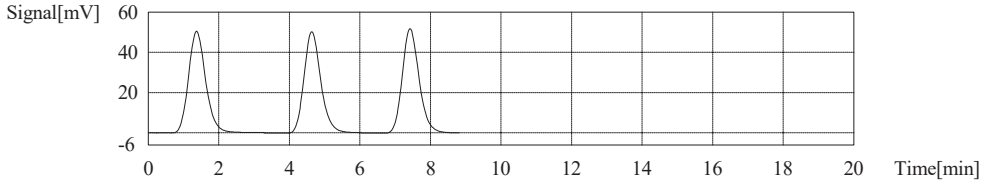
Acid Add. 1.500%
Sparge Gas Flow 80mL/min
Sp. Time 120.0sec
Mean Area 86.93




Conc: 50.00mg/L

| No. | Area | Inj. Vol. | Aut. Dil. | Rem. | Ex. | Date / Time |
|---|---|---|---|---|---|---|
| 1 | 172.4 | 50uL | 1.000 | ******* | | 9/20/2023 2:11:58 PM |
| 2 | 167.9 | 50uL | 1.000 | ******* | | 9/20/2023 2:14:59 PM |
| 3 | 173.6 | 50uL | 1.000 | ******* | | 9/20/2023 2:18:00 PM |

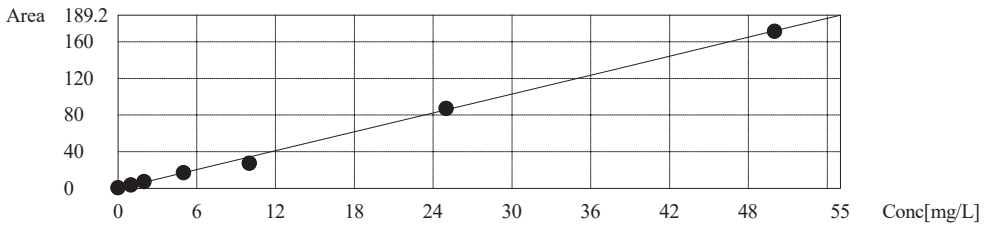
Acid Add. 1.500%
Sparge Gas Flow 80mL/min
Sp. Time 120.0sec
Mean Area 171.3



# TOC-Control L Report

2023_09_20_001_CAL.tlx

| | |
|---|---|
| Slope: | 3.440 |
| Intercept | 0.000 |
| r^2 | 0.9979 |
| r | 0.9990 |
| RSE(%) | N/A |
| Zero Shift | Yes |




**Sample**

| | |
|---|---|
| Sample Name: | ICV |
| Sample ID: | 3100607901 |
| Origin: | 09.20.2023.1.cal |
| Status | Completed |
| Chk. Result | |

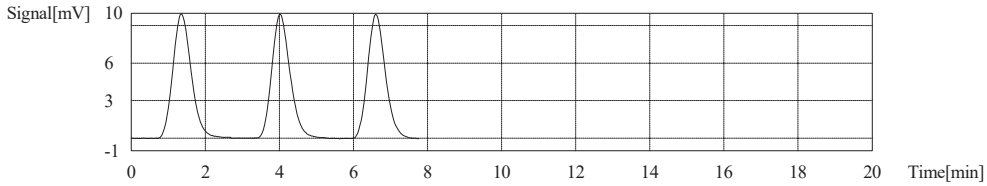
| Type | Anal. | Manual Dilution | Result |
|---|---|---|---|
| Unknown | NPOC | 1.000 | NPOC:9.917mg/L |

1. Det

Anal.: NPOC

| No. | Area | Conc. | Inj. Vol. | Aut. Dil. | Ex. | Cal. Curve | Date / Time |
|---|---|---|---|---|---|---|---|
| 1 | 34.35 | 9.985mg/L | 50uL | 1.000 | | 09.20.2023.1.2023_09_20_12_39_24.cal | 9/20/2023 2:26:50 PM |
| 2 | 34.14 | 9.924mg/L | 50uL | 1.000 | | 09.20.2023.1.2023_09_20_12_39_24.cal | 9/20/2023 2:29:39 PM |
| 3 | 33.85 | 9.840mg/L | 50uL | 1.000 | | 09.20.2023.1.2023_09_20_12_39_24.cal | 9/20/2023 2:32:23 PM |

| | |
|---|---|
| Mean Area | 34.11 |
| Mean Conc. | 9.917mg/L |




**Sample**

| | |
|---|---|
| Sample Name: | ICB |
| Sample ID: | |
| Origin: | 09.20.2023.1.cal |
| Status | Completed |
| Chk. Result | |

| Type | Anal. | Manual Dilution | Result |
|---|---|---|---|
| Unknown | NPOC | 1.000 | NPOC:0.2114mg/L |

1. Det

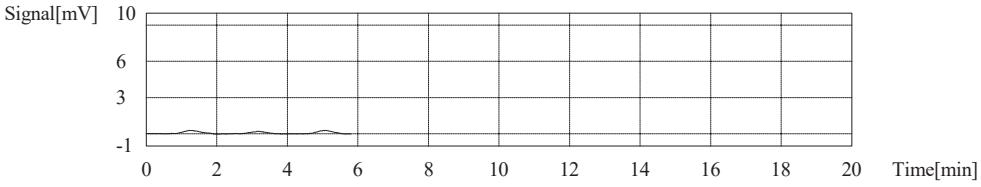
Anal.: NPOC

| No. | Area | Conc. | Inj. Vol. | Aut. Dil. | Ex. | Cal. Curve | Date / Time |
|---|---|---|---|---|---|---|---|
| 1 | 0.7906 | 0.2298mg/L | 50uL | 1.000 | | 09.20.2023.1.2023_09_20_12_39_24.cal | 9/20/2023 2:40:38 PM |
| 2 | 0.5630 | 0.1637mg/L | 50uL | 1.000 | | 09.20.2023.1.2023_09_20_12_39_24.cal | 9/20/2023 2:42:45 PM |
| 3 | 0.8276 | 0.2406mg/L | 50uL | 1.000 | | 09.20.2023.1.2023_09_20_12_39_24.cal | 9/20/2023 2:44:58 PM |

# TOC-Control L Report



Mean Area 0.7271
Mean Conc. 0.2114mg/L




**Sample**

Sample Name: ICB
Sample ID:
Origin: 09.20.2023.1.cal
Status Completed
Chk. Result

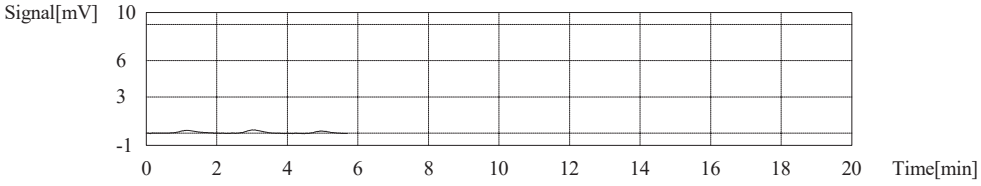
| Type | Anal. | Manual Dilution | Result |
|---|---|---|---|
| Unknown | NPOC | 1.000 | NPOC:0.1916mg/L |

1. Det

Anal.: NPOC

| No. | Area | Conc. | Inj. Vol. | Aut. Dil. | Ex. | Cal. Curve | Date / Time |
|---|---|---|---|---|---|---|---|
| 1 | 0.5917 | 0.1720mg/L | 50uL | 1.000 | | 09.20.2023.1.2023_09_20_12_39_24.cal | 9/20/2023 3:03:55 PM |
| 2 | 0.8419 | 0.2447mg/L | 50uL | 1.000 | | 09.20.2023.1.2023_09_20_12_39_24.cal | 9/20/2023 3:06:03 PM |
| 3 | 0.5440 | 0.1581mg/L | 50uL | 1.000 | | 09.20.2023.1.2023_09_20_12_39_24.cal | 9/20/2023 3:08:11 PM |

Mean Area 0.6592
Mean Conc. 0.1916mg/L




**Sample**

Sample Name: ICB
Sample ID:
Origin: 09.20.2023.1.cal
Status Completed
Chk. Result

| Type | Anal. | Manual Dilution | Result |
|---|---|---|---|
| Unknown | NPOC | 1.000 | NPOC:0.1792mg/L |

1. Det

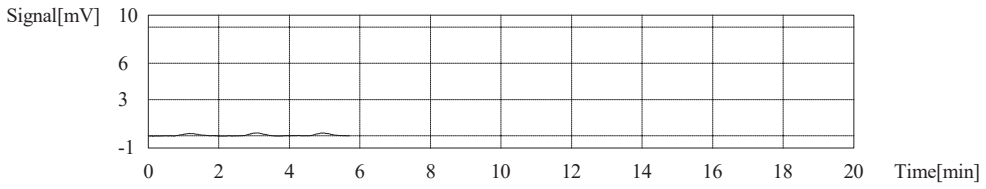
Anal.: NPOC

| No. | Area | Conc. | Inj. Vol. | Aut. Dil. | Ex. | Cal. Curve | Date / Time |
|---|---|---|---|---|---|---|---|
| 1 | 0.5972 | 0.1736mg/L | 50uL | 1.000 | | 09.20.2023.1.2023_09_20_12_39_24.cal | 9/20/2023 3:15:26 PM |
| 2 | 0.6360 | 0.1849mg/L | 50uL | 1.000 | | 09.20.2023.1.2023_09_20_12_39_24.cal | 9/20/2023 3:17:35 PM |
| 3 | 0.6161 | 0.1791mg/L | 50uL | 1.000 | | 09.20.2023.1.2023_09_20_12_39_24.cal | 9/20/2023 3:19:42 PM |

# TOC-Control L Report

2023_09_20_001_CAL.tlx

| | |
|---|---|
| Mean Area | 0.6164 |
| Mean Conc. | 0.1792mg/L |



C:\TOC-L\Data\2023_09_21_001.tlx

| | Sample Name | Sample ID | Origin | Result | Status | Date / Time | Vial |
|---|---|---|---|---|---|---|---|
| 1 | CCV | 322147105 | 09.20.2023. | NPOC:24.02m | Completed | 9/21/2023 10:01: | 1 |
| 2 | CCB | | 09.20.2023. | NPOC:0.09799 | Completed | 9/21/2023 10:13: | 2 |
| 3 | MBLK-09202023 | | 09.20.2023. | NPOC:0.09821 | Completed | 9/21/2023 10:26: | 3 |
| 4 | LCS-09202023 | 3100607901 | 09.20.2023. | NPOC:9.818m | Completed | 9/21/2023 10:40: | 4 |
| 5 | LCSD-09202023 | | 09.20.2023. | NPOC:9.899m | Completed | 9/21/2023 10:55: | 5 |
| 6 | HS23090716-01 | TOC_W | 09.20.2023. | NPOC:41.97m | Completed | 9/21/2023 11:09: | 6 |
| 7 | HS23091074-01 | | 09.20.2023. | NPOC:3.029m | Completed | 9/21/2023 11:23: | 7 |
| 8 | HS23091074-02 | | 09.20.2023. | NPOC:4.360m | Completed | 9/21/2023 11:37: | 8 |
| 9 | HS23091074-03 | | 09.20.2023. | NPOC:7.025m | Completed | 9/21/2023 11:51: | 9 |
| 10 | HS23091074-04 | | 09.20.2023. | NPOC:14.91m | Completed | 9/21/2023 12:05: | 10 |
| 11 | HS23091074-05 | | 09.20.2023. | NPOC:6.399m | Completed | 9/21/2023 12:19: | 11 |
| 12 | HS23091074-06 | | 09.20.2023. | NPOC:24.30m | Completed | 9/21/2023 12:34: | 12 |
| 13 | CCV | 322147105 | 09.20.2023. | NPOC:24.03m | Completed | 9/21/2023 12:49: | 1 |
| 14 | CCB | | 09.20.2023. | NPOC:0.2396 | Completed | 9/21/2023 1:02:0 | 2 |
| 15 | HS23091099-01 | | 09.20.2023. | NPOC:8.951m | Completed | 9/21/2023 1:16:0 | 13 |
| 16 | HS23091099-01MS | | 09.20.2023. | NPOC:18.89m | Completed | 9/21/2023 1:30:3 | 14 |
| 17 | HS23091099-02 | | 09.20.2023. | NPOC:6.241m | Completed | 9/21/2023 1:44:1 | 15 |
| 18 | HS23090790-01 | | 09.20.2023. | NPOC:16.67m | Completed | 9/21/2023 1:58:4 | 16 |
| 19 | CCV | 322147105 | 09.20.2023. | NPOC:23.85m | Completed | 9/21/2023 2:13:4 | 1 |
| 20 | CCB | | 09.20.2023. | NPOC:0.2084 | Completed | 9/21/2023 2:26:0 | 2 |

# TOC-Control L Report



**Instr.Information**

Instrument Options TOC/ASI/IC Unit/
Catalyst Regular Sensitivity

**Sample**

Sample Name: CCV
Sample ID: 322147105
Origin: 09.20.2023.1.cal
Status Completed
Chk. Result

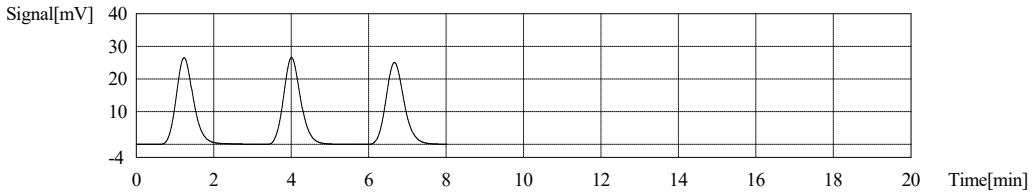
| Type | Anal. | Manual Dilution | Result |
|---|---|---|---|
| Unknown | NPOC | 1.000 | NPOC:24.02mg/L |

1. Det

Anal.: NPOC

| No. | Area | Conc. | Inj. Vol. | Aut. Dil. | Ex. | Cal. Curve | Date / Time |
|---|---|---|---|---|---|---|---|
| 1 | 82.25 | 23.91mg/L | 50uL | 1.000 | | 09.20.2023.1.2023_09_20_12_39_24.cal | 9/21/2023 9:55:44 AM |
| 2 | 82.93 | 24.11mg/L | 50uL | 1.000 | | 09.20.2023.1.2023_09_20_12_39_24.cal | 9/21/2023 9:58:34 AM |
| 3 | 82.67 | 24.03mg/L | 50uL | 1.000 | | 09.20.2023.1.2023_09_20_12_39_24.cal | 9/21/2023 10:01:31 AM |

Mean Area 82.62
Mean Conc. 24.02mg/L




**Sample**

Sample Name: CCB
Sample ID:
Origin: 09.20.2023.1.cal
Status Completed
Chk. Result

| Type | Anal. | Manual Dilution | Result |
|---|---|---|---|
| Unknown | NPOC | 1.000 | NPOC:0.09799mg/L |

1. Det

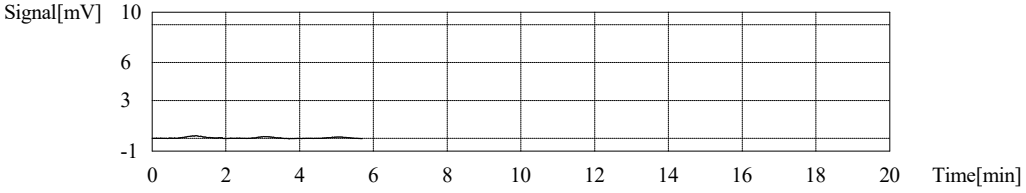
Anal.: NPOC

| No. | Area | Conc. | Inj. Vol. | Aut. Dil. | Ex. | Cal. Curve | Date / Time |
|---|---|---|---|---|---|---|---|
| 1 | 0.5330 | 0.1549mg/L | 50uL | 1.000 | | 09.20.2023.1.2023_09_20_12_39_24.cal | 9/21/2023 10:09:35 AM |
| 2 | 0.4783 | 0.1390mg/L | 50uL | 1.000 | | 09.20.2023.1.2023_09_20_12_39_24.cal | 9/21/2023 10:11:44 AM |
| 3 | 0.000 | 0.000mg/L | 50uL | 1.000 | | 09.20.2023.1.2023_09_20_12_39_24.cal | 9/21/2023 10:13:52 AM |

# TOC-Control L Report



Mean Area 0.3371
Mean Conc. 0.09799mg/L




**Sample**

Sample Name: MBLK-09202023
Sample ID:
Origin: 09.20.2023.1.cal
Status Completed
Chk. Result

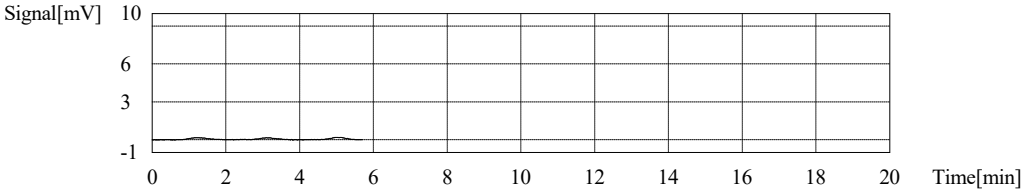
| Type | Anal. | Manual Dilution | Result |
|---|---|---|---|
| Unknown | NPOC | 1.000 | NPOC:0.09821mg/L |

1. Det

Anal.: NPOC

| No. | Area | Conc. | Inj. Vol. | Aut. Dil. | Ex. | Cal. Curve | Date / Time |
|---|---|---|---|---|---|---|---|
| 1 | 0.3343 | 0.09718mg/L | 50uL | 1.000 | | 09.20.2023.1.2023_09_20_12_39_24.cal | 9/21/2023 10:21:56 AM |
| 2 | 0.2533 | 0.07363mg/L | 50uL | 1.000 | | 09.20.2023.1.2023_09_20_12_39_24.cal | 9/21/2023 10:24:04 AM |
| 3 | 0.4259 | 0.1238mg/L | 50uL | 1.000 | | 09.20.2023.1.2023_09_20_12_39_24.cal | 9/21/2023 10:26:12 AM |

Mean Area 0.3378
Mean Conc. 0.09821mg/L




**Sample**

Sample Name: LCS-09202023
Sample ID: 3100607901
Origin: 09.20.2023.1.cal
Status Completed
Chk. Result

| Type | Anal. | Manual Dilution | Result |
|---|---|---|---|
| Unknown | NPOC | 1.000 | NPOC:9.818mg/L |

1. Det

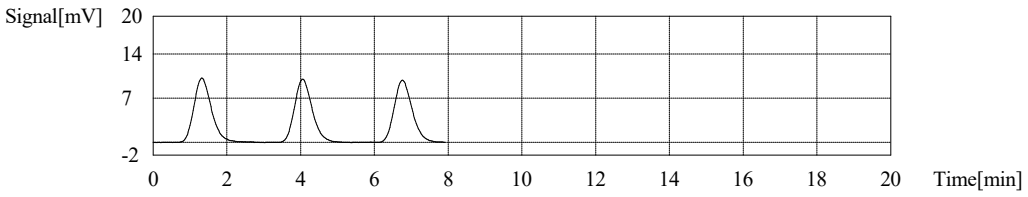
Anal.: NPOC

| No. | Area | Conc. | Inj. Vol. | Aut. Dil. | Ex. | Cal. Curve | Date / Time |
|---|---|---|---|---|---|---|---|
| 1 | 33.82 | 9.831mg/L | 50uL | 1.000 | | 09.20.2023.1.2023_09_20_12_39_24.cal | 9/21/2023 10:35:06 AM |
| 2 | 33.85 | 9.840mg/L | 50uL | 1.000 | | 09.20.2023.1.2023_09_20_12_39_24.cal | 9/21/2023 10:38:01 AM |
| 3 | 33.65 | 9.782mg/L | 50uL | 1.000 | | 09.20.2023.1.2023_09_20_12_39_24.cal | 9/21/2023 10:40:46 AM |

# TOC-Control L Report



Mean Area 33.77
Mean Conc. 9.818mg/L




**Sample**

Sample Name: LCSD-09202023
Sample ID:
Origin: 09.20.2023.1.cal
Status Completed
Chk. Result

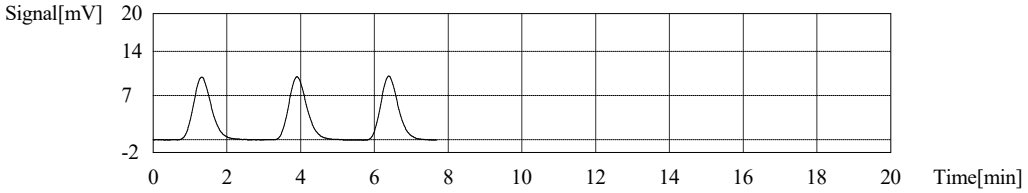
| Type | Anal. | Manual Dilution | Result |
|---|---|---|---|
| Unknown | NPOC | 1.000 | NPOC:9.899mg/L |

1. Det

Anal.: NPOC

| No. | Area | Conc. | Inj. Vol. | Aut. Dil. | Ex. | Cal. Curve | Date / Time |
|---|---|---|---|---|---|---|---|
| 1 | 33.88 | 9.849mg/L | 50uL | 1.000 | | 09.20.2023.1.2023_09_20_12_39_24.cal | 9/21/2023 10:49:30 AM |
| 2 | 34.20 | 9.942mg/L | 50uL | 1.000 | | 09.20.2023.1.2023_09_20_12_39_24.cal | 9/21/2023 10:52:18 AM |
| 3 | 34.08 | 9.907mg/L | 50uL | 1.000 | | 09.20.2023.1.2023_09_20_12_39_24.cal | 9/21/2023 10:55:06 AM |

Mean Area 34.05
Mean Conc. 9.899mg/L




**Sample**

Sample Name: HS23090716-01
Sample ID: TOC_W
Origin: 09.20.2023.1.cal
Status Completed
Chk. Result

| Type | Anal. | Manual Dilution | Result |
|---|---|---|---|
| Unknown | NPOC | 1.000 | NPOC:41.97mg/L |

1. Det

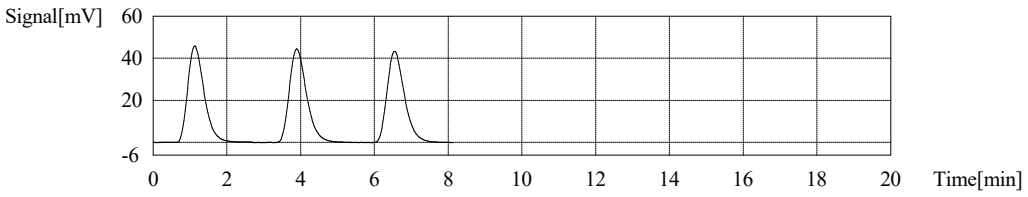
Anal.: NPOC

| No. | Area | Conc. | Inj. Vol. | Aut. Dil. | Ex. | Cal. Curve | Date / Time |
|---|---|---|---|---|---|---|---|
| 1 | 143.2 | 41.63mg/L | 50uL | 1.000 | | 09.20.2023.1.2023_09_20_12_39_24.cal | 9/21/2023 11:03:58 AM |
| 2 | 146.0 | 42.44mg/L | 50uL | 1.000 | | 09.20.2023.1.2023_09_20_12_39_24.cal | 9/21/2023 11:06:52 AM |
| 3 | 143.9 | 41.83mg/L | 50uL | 1.000 | | 09.20.2023.1.2023_09_20_12_39_24.cal | 9/21/2023 11:09:54 AM |

# TOC-Control L Report



Mean Area 144.4
Mean Conc. 41.97mg/L




**Sample**

Sample Name: CCV
Sample ID: 322147105
Origin: 09.20.2023.1.cal
Status Completed
Chk. Result

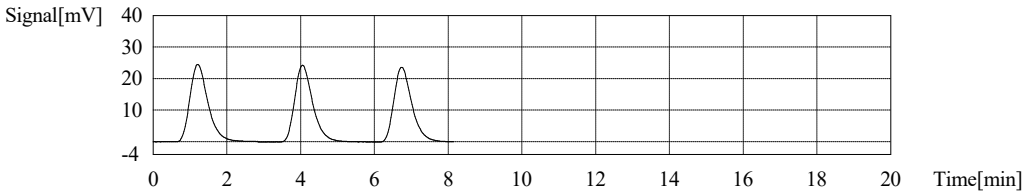
| Type | Anal. | Manual Dilution | Result |
|---|---|---|---|
| Unknown | NPOC | 1.000 | NPOC:24.03mg/L |

1. Det

Anal.: NPOC

| No. | Area | Conc. | Inj. Vol. | Aut. Dil. | Ex. | Cal. Curve | Date / Time |
|---|---|---|---|---|---|---|---|
| 1 | 84.26 | 24.49mg/L | 50uL | 1.000 | | 09.20.2023.1.2023_09_20_12_39_24.cal | 9/21/2023 12:43:53 PM |
| 2 | 82.99 | 24.12mg/L | 50uL | 1.000 | | 09.20.2023.1.2023_09_20_12_39_24.cal | 9/21/2023 12:46:51 PM |
| 3 | 80.79 | 23.49mg/L | 50uL | 1.000 | | 09.20.2023.1.2023_09_20_12_39_24.cal | 9/21/2023 12:49:41 PM |

Mean Area 82.68
Mean Conc. 24.03mg/L




**Sample**

Sample Name: CCB
Sample ID:
Origin: 09.20.2023.1.cal
Status Completed
Chk. Result

| Type | Anal. | Manual Dilution | Result |
|---|---|---|---|
| Unknown | NPOC | 1.000 | NPOC:0.2396mg/L |

1. Det

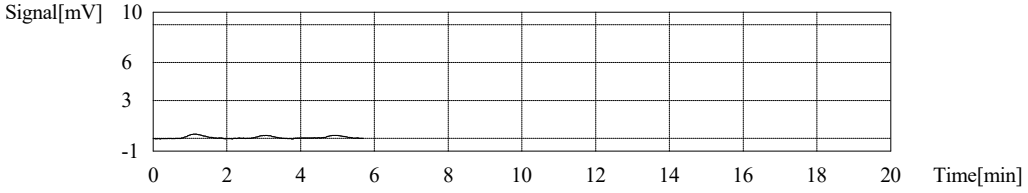
Anal.: NPOC

| No. | Area | Conc. | Inj. Vol. | Aut. Dil. | Ex. | Cal. Curve | Date / Time |
|---|---|---|---|---|---|---|---|
| 1 | 0.9950 | 0.2892mg/L | 50uL | 1.000 | | 09.20.2023.1.2023_09_20_12_39_24.cal | 9/21/2023 12:57:44 PM |
| 2 | 0.8368 | 0.2433mg/L | 50uL | 1.000 | | 09.20.2023.1.2023_09_20_12_39_24.cal | 9/21/2023 12:59:52 PM |
| 3 | 0.6411 | 0.1864mg/L | 50uL | 1.000 | | 09.20.2023.1.2023_09_20_12_39_24.cal | 9/21/2023 1:02:00 PM |

# TOC-Control L Report



Mean Area 0.8243
Mean Conc. 0.2396mg/L




**Sample**

Sample Name: HS23091099-01
Sample ID:
Origin: 09.20.2023.1.cal
Status Completed
Chk. Result

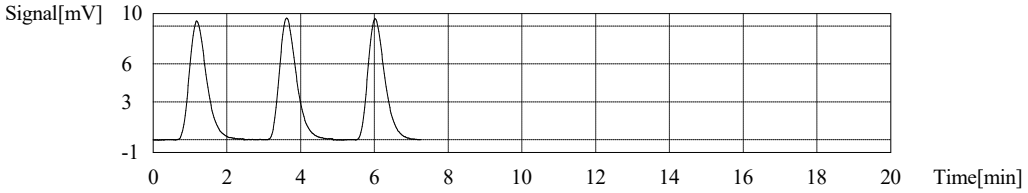
| Type | Anal. | Manual Dilution | Result |
|---|---|---|---|
| Unknown | NPOC | 1.000 | NPOC:8.951mg/L |

1. Det

Anal.: NPOC

| No. | Area | Conc. | Inj. Vol. | Aut. Dil. | Ex. | Cal. Curve | Date / Time |
|---|---|---|---|---|---|---|---|
| 1 | 30.62 | 8.901mg/L | 50uL | 1.000 | | 09.20.2023.1.2023_09_20_12_39_24.cal | 9/21/2023 1:10:43 PM |
| 2 | 30.97 | 9.003mg/L | 50uL | 1.000 | | 09.20.2023.1.2023_09_20_12_39_24.cal | 9/21/2023 1:13:22 PM |
| 3 | 30.78 | 8.948mg/L | 50uL | 1.000 | | 09.20.2023.1.2023_09_20_12_39_24.cal | 9/21/2023 1:16:00 PM |

Mean Area 30.79
Mean Conc. 8.951mg/L




**Sample**

Sample Name: HS23091099-01MS
Sample ID:
Origin: 09.20.2023.1.cal
Status Completed
Chk. Result

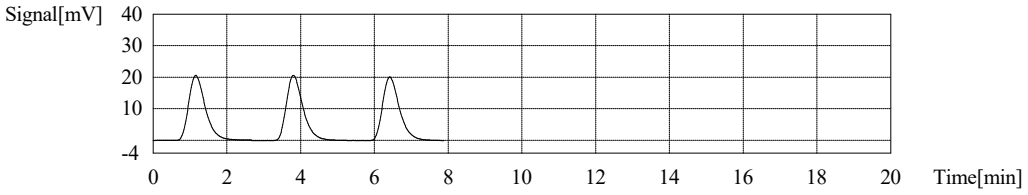
| Type | Anal. | Manual Dilution | Result |
|---|---|---|---|
| Unknown | NPOC | 1.000 | NPOC:18.89mg/L |

1. Det

Anal.: NPOC

| No. | Area | Conc. | Inj. Vol. | Aut. Dil. | Ex. | Cal. Curve | Date / Time |
|---|---|---|---|---|---|---|---|
| 1 | 65.21 | 18.96mg/L | 50uL | 1.000 | | 09.20.2023.1.2023_09_20_12_39_24.cal | 9/21/2023 1:24:49 PM |
| 2 | 65.26 | 18.97mg/L | 50uL | 1.000 | | 09.20.2023.1.2023_09_20_12_39_24.cal | 9/21/2023 1:27:40 PM |
| 3 | 64.50 | 18.75mg/L | 50uL | 1.000 | | 09.20.2023.1.2023_09_20_12_39_24.cal | 9/21/2023 1:30:31 PM |

Mean Area 64.99
Mean Conc. 18.89mg/L




**Sample**

Sample Name: CCV
Sample ID: 322147105
Origin: 09.20.2023.1.cal
Status Completed
Chk. Result

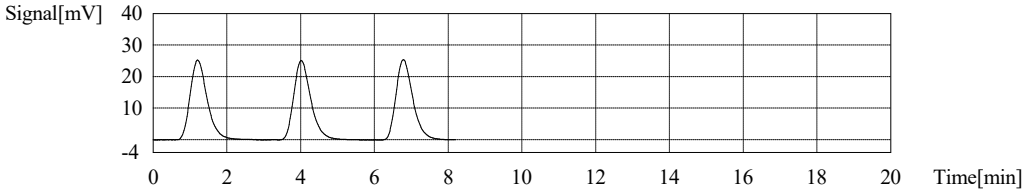
| Type | Anal. | Manual Dilution | Result |
|---|---|---|---|
| Unknown | NPOC | 1.000 | NPOC:23.85mg/L |

1. Det

Anal.: NPOC

| No. | Area | Conc. | Inj. Vol. | Aut. Dil. | Ex. | Cal. Curve | Date / Time |
|---|---|---|---|---|---|---|---|
| 1 | 82.11 | 23.87mg/L | 50uL | 1.000 | | 09.20.2023.1.2023_09_20_12_39_24.cal | 9/21/2023 2:07:52 PM |
| 2 | 81.99 | 23.83mg/L | 50uL | 1.000 | | 09.20.2023.1.2023_09_20_12_39_24.cal | 9/21/2023 2:10:54 PM |
| 3 | 81.99 | 23.83mg/L | 50uL | 1.000 | | 09.20.2023.1.2023_09_20_12_39_24.cal | 9/21/2023 2:13:44 PM |

Mean Area 82.03
Mean Conc. 23.85mg/L




**Sample**

Sample Name: CCB
Sample ID:
Origin: 09.20.2023.1.cal
Status Completed
Chk. Result

| Type | Anal. | Manual Dilution | Result |
|---|---|---|---|
| Unknown | NPOC | 1.000 | NPOC:0.2084mg/L |

1. Det

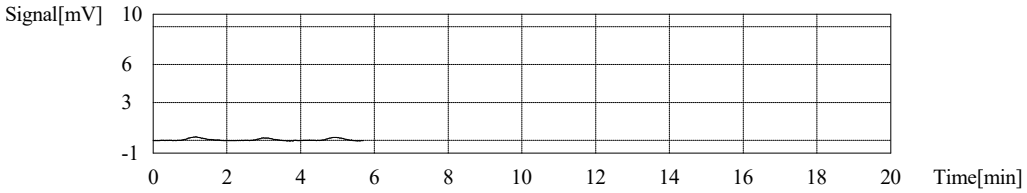
Anal.: NPOC

| No. | Area | Conc. | Inj. Vol. | Aut. Dil. | Ex. | Cal. Curve | Date / Time |
|---|---|---|---|---|---|---|---|
| 1 | 0.8569 | 0.2491mg/L | 50uL | 1.000 | | 09.20.2023.1.2023_09_20_12_39_24.cal | 9/21/2023 2:21:47 PM |
| 2 | 0.5654 | 0.1644mg/L | 50uL | 1.000 | | 09.20.2023.1.2023_09_20_12_39_24.cal | 9/21/2023 2:23:54 PM |
| 3 | 0.7289 | 0.2119mg/L | 50uL | 1.000 | | 09.20.2023.1.2023_09_20_12_39_24.cal | 9/21/2023 2:26:01 PM |

# TOC-Control L Report

2023_09_21_001.tlx

| | |
|---|---|
| Mean Area | 0.7171 |
| Mean Conc. | 0.2084mg/L |



# HS23090716 E2300826 PERCH Level IV Report

ALS WO# HS23090716

September 14, 2023 Service Request No:E2300826

James Guin
ALS Environmental - US
10450 Stancliff Rd #210
Houston, TX 77099

**Laboratory Results for: HS23090716**

Dear James,

Enclosed are the results of the sample(s) submitted to our laboratory September 13, 2023
For your reference, these analyses have been assigned our service request number **E2300826.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current TNI standards, where applicable, and except as noted in the laboratory case narrative provided. All results are intended to be considered in their entirety and ALS Environmental is not responsible for use of less than the complete final report. Results apply only to the items submitted to the laboratory, as received for analysis. In accordance with the current TNI Standard, a statement on the estimated uncertainty of measurement of any quantitative analysis will be supplied upon request.

Please contact me if you have any questions. My extension is 2190. You may also contact me via email at hussam.kelany@alsglobal.com.

Respectfully submitted,

**ALS Group USA, Corp. dba ALS Environmental**

H Kelany

Hussam Kelany
Project Manager

ADDRESS 10450 Stancliff Rd., Suite 210, Houston, TX 77099
PHONE +1 281 530 5656 | FAX +1 281 530 5887
ALS Group USA, Corp.
dba ALS Environmental

# Certificate of Analysis

**ALS Environmental - Houston Specialties Laboratory**
10450 Stancliff Rd., Suite 210, Houston TX 77099
Phone (281)530-5656 Fax (281)530-5887
www.alsglobal.com

| | | | |
|---|---|---|---|
| **Client:** | ALS Environmental - US | **Service Request No.:** | E2300826 |
| **Project:** | HS23090716 | **Date Received:** | 09/13/23 |
| **Sample Matrix:** | Water | | |

## CASE NARRATIVE

All analyses were performed in adherence to the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier IV. When appropriate to the method, method blank results have been reported with each analytical test.

### Sample Receipt

Two samples were received for analysis at ALS Environmental in Houston on 09/13/23.

The samples were received in good condition and are consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

### Data Validation Notes and Discussion

**Precision and Accuracy:**

EQ2300447: Laboratory Control Spike/Duplicate Laboratory Control Spike (LCS/DLCS) samples were analyzed and reported in addition to a MS/MSD for this extraction batch.

The batch precision (MS/DMS) measurements were determined on an unrelated sample in the extraction batch. The MS/DMS results are not included in this report.

*The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and ALS Environmental (ALS) is not responsible for utilization of less than the complete report.*

*Use of ALS group USA Corp dba ALS Environmental (ALS)'s Name. Client shall not use ALS's name or trademark in any marketing or reporting materials, press releases or in any other manner ("Materials") whatsoever and shall not attribute to ALS any test result, tolerance or specification derived from ALS's data ("Attribution") without ALS's prior written consent, which may be withheld by ALS for any reason in its sole discretion. To request ALS's consent, Client shall provide copies of the proposed Materials or Attribution and describe in writing Client's proposed use of such Materials or Attribution. If ALS has not provided written approval of the Materials or Attribution within ten (10) days of receipt from Client, Client's request to use ALS's name or trademark in any Materials or Attribution shall be deemed denied. ALS may, in its discretion, reasonably charge Client for its time in reviewing Materials or Attribution requests. Client acknowledges and agrees that the unauthorized use of ALS's name or trademark may cause ALS to incur irreparable harm for which the recovery of money damages will be inadequate. Accordingly, Client acknowledges and agrees that a violation shall justify preliminary injunctive relief. For questions contact the laboratory.*

**Client:** ALS Environmental - US **Service Request:**E2300826
**Project:** HS23090716

## SAMPLE CROSS-REFERENCE

| SAMPLE # | CLIENT SAMPLE ID | DATE | TIME |
|---|---|---|---|
| E2300826-001 | LH18/24-SP650_091223_BIX | 9/12/2023 | 1300 |
| E2300826-002 | LH18/24-SP650_091223_AIX | 9/12/2023 | 1300 |

# Service Request Summary

**Folder #:** **E2300826**
Client Name: ALS Environmental - US
Project Name: HS23090716
Project Number:

**Report To:** James Guin
ALS Environmental - US
10450 Stancliff Rd #210
Houston, TX 77099
USA
Phone Number: 281-530-5656
Cell Number:
Fax Number:
E-mail: james.guin@alsglobal.com

Project Chemist: Hussam Kelany
Originating Lab: HOUSTON
Logged By: CGRANDITS
Date Received: 09/13/23
Internal Due Date: 9/14/2023
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS23090716
EDD: BASIC_WQC_CASNo_LOD

2 120 mL-Plastic Bottle Natural WM Unpreserved
**Location:** EHRMS-AirArch 1
**Pressure Gas:**
**Rush**

| Lab Samp No. | Client Samp No | Matrix | Collected | HOUSTON<br>ClO4 DOD/6850 |
|---|---|---|---|---|
| E2300826-001 | LH18/24-SP650_091223_BIX | Water | 09/12/23 1300 | **IV** |
| E2300826-002 | LH18/24-SP650_091223_AIX | Water | 09/12/23 1300 | **IV** |

# Service Request Summary

**Folder #:** **E2300826**
Client Name: ALS Environmental - US
Project Name: HS23090716
Project Number:

**Report To:** James Guin
ALS Environmental - US
10450 Stancliff Rd #210
Houston, TX 77099
USA
Phone Number: 281-530-5656
Cell Number:
Fax Number:
E-mail: james.guin@alsglobal.com

Project Chemist: Hussam Kelany
Originating Lab: HOUSTON
Logged By: CGRANDITS
Date Received: 09/13/23
Internal Due Date: 9/14/2023
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS23090716
EDD: BASIC_WQC_CASNo_LOD

2 120 mL-Plastic Bottle Natural WM Unpreserved
**Location:** EHRMS-AirArch 1
**Pressure Gas:**
**Rush**

## Test Comments:

| Group | Test/Method | Samples | Comments |
|---|---|---|---|
| Semivoa GCMS | ClO4 DOD/6850 | 2 | Level IV due 9/27 |

# Data Qualifiers

## Lab Standard

| | |
|---|---|
| + | Possible Tedlar bag artifact. |
| A | TIC is a suspected aldol-condensation product |
| B | Analyte found in the associated method blank as well as in the sample. |
| BC | Reported results are not blank corrected. |
| BH | The back section of the tube yielded higher results than the front. |
| BT | Results indicated possible breakthrough; back section >=10% front section. |
| C | Result identification confirmed. |
| D | Compound identified in an analysis at a secondary dilution factor |
| D | Spike was diluted out |
| DE | Reported results are corrected for desorption efficiency. |
| E | Estimated value. Concentration above calibration range |
| E | The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample. |
| F | The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard. |
| H | The chromatographic fingerprint of the sample resembles a petroleum product but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard. |
| H1 | Sample analysis performed past holding time. See case narrative. |
| H2 | Initial analysis within holding time. Reanalysis for the required dilution was past holding time. |
| H3 | Sample was received and analyzed past holding time. |
| H4 | Sample was extracted past required extraction holding time, but analyzed within analysis holding time. See case narrative. |
| I | (Auto) The reference ion ratio was outside acceptance criteria, which may indicate a potential bias to this result. |
| I | Internal standard not within the specified limits. See case narrative. |
| I | The reference ion ratio was outside acceptance criteria, which may indicate a potential bias to this result. |
| J | Estimated Value. Concentration found below MRL. |
| K | A deflection in the QC ion may indicate interference with the quantitation of this ion. The concentration of this analyte should be considered as an estimate. |
| K | Analyte was detected above the method reporting limit prior to normalization. |
| K | The reference ion ratio was outside acceptance criteria, which may indicate a potential bias to this result. |
| L | The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard. |
| L1 | Laboratory control sample recovery outside the specified limits; results may be biased high. |
| L2 | Laboratory control sample recovery outside the specified limits; results may be biased low. |
| L3 | Laboratory control sample recovery outside the specified limits. |
| M | Matrix interference; results may be biased high. |
| M | The duplicate injection precision not met. |

# Data Qualifiers

## Lab Standard

| | |
|---|---|
| M1 | Matrix interference due to coelution with a non-target compound; results may be biased high. |
| N | Presumptive evidence of a compound for TICs that have been identified based on a mass spectral library search. |
| N | The Matrix Spike sample recovery is not within control limits. See case narrative. |
| O | The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard. |
| P | Indicates chlorodiphenyl ether interference present at the retention time of the target compound. |
| P | Pesticide/Aroclor target analyte > 40% difference for detected concentrations between GC columns |
| Q | Indicates as estimated value because the P and P + 2 theoretical abundance ratio does not meet method criteria. |
| R | Duplicate Precision not met. |
| R1 | Duplicate precision not within the specified limits; however, the results are below the MRL and considered estimated. |
| S | Surrogate recovery not within specified limits. |
| S | The reported value was determined by the Method of Standard Additions (MSA). |
| T | Analyte is a tentatively identified compound, result is estimated. |
| U | Compound was analyzed for, but was not detected (ND). |
| V1 | The continuing calibration verification standard was outside (biased high) the specified limits for this compound. |
| V2 | The continuing calibration verification standard was outside (biased low) the specified limits for this compound. |
| W | Result quantified, but the corresponding peak was detected outside the generated retention time window. |
| W | The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance. |
| X | See case narrative. |
| Y | Recovery outside limits |
| Y | The chromatogram resembles a petroleum product but does not match the calibration standard. |
| Z | The chromatogram does not resemble a petroleum product. |
| i | The MRL/MDL has been elevated due to a matrix interference. |

# ALS Laboratory Group

**Acronyms**

| | |
|---|---|
| Cal | Calibration |
| Conc | CONCentration |
| Dioxin(s) | Polychlorinated dibenzo-p-dioxin(s) |
| EDL | Estimated Detection Limit |
| EMPC | Estimated Maximum Possible Concentration |
| Flags | Data qualifiers |
| Furan(s) | Polychlorinated dibenzofuran(s) |
| g | Grams |
| ICAL | Initial CALibration |
| ID | IDentifier |
| Ions | Masses monitored for the analyte during data acquisition |
| L | Liter (s) |
| LCS | Laboratory Control Sample |
| DLCS | Duplicate Laboratory Control Sample |
| MB | Method Blank |
| MCL | Method Calibration Limit |
| MDL | Method Detection Limit |
| mL | Milliliters |
| MS | Matrix Spiked sample |
| DMS | Duplicate Matrix Spiked sample |
| NO | Number of peaks meeting all identification criteria |
| PCDD(s) | Polychlorinated dibenzo-p-dioxin(s) |
| PCDF(s) | Polychlorinated dibenzofuran(s) |
| ppb | Parts per billion |
| ppm | Parts per million |
| ppq | Parts per quadrillion |
| ppt | Parts per trillion |
| QA | Quality Assurance |
| QC | Quality Control |
| Ratio | Ratio of areas from monitored ions for an analyte |
| % Rec. | Percent recovery |
| RPD | Relative Percent Difference |
| RRF | Relative Response Factor |
| RT | Retention Time |
| SDG | Sample Delivery Group |
| S/N | Signal-to-noise ratio |
| TEF | Toxicity Equivalence Factor |
| TEQ | Toxicity Equivalence Quotient |

10450 Stancliff Rd, Houston, TX 77099 | 281-530-5656 | www.alsglobal.com

## State Certifications, Accreditations, and Licenses

| Agency | Number | Expire Date |
|---|---|---|
| Arizona Department of Health Services | AZ0793_2024 | 5/27/2024 |
| Arkansas Department of Environmental Quality | 88-00356 | 3/27/2024 |
| California State Environmental Laboratory Accreditation Program | 2919 | 4/30/2024 |
| Department of Defense | L23-358 | 5/31/2025 |
| Department of Defense | L22-90 | 3/31/2024 |
| Florida Department of Health | E87611-38 | 6/30/2024 |
| Illinois Environmental Protection Agency | 2000322023-11 | 6/30/2024 |
| Kansas Department of Health and Environment | E-10352 2023-2024 | 7/31/2024 |
| Louisiana Department of Environmental Quality | 03087-2023 | 6/30/2024 |
| Louisiana Department of Health and Hospitals | LA028-2023 | 12/31/2023 |
| Maine Department of Health and Human Services | 2022017 | 6/5/2024 |
| Maryland Department of the Environment | 343-2023 | 6/30/2024 |
| Michigan Depratment of Environmental Quality | 9971-2023 | 4/30/2024 |
| Minnesota Department of Health | 2368363 | 12/31/2023 |
| Nebraska Department of Health and Human Services | NE-OS-25-13 | 4/30/2024 |
| Nevada Division of Environmental Protection | TX026932024-1 | 7/31/2024 |
| New Hampshire Environmental Laboratory Accreditation Program | 209423 | 4/24/2024 |
| New Jersey Department of Environmental Protection | TX008-2024 | 6/30/2024 |
| New York Department of Health | 11707 | 3/31/2024 |
| Oregon Environmental Laboratory Accreditation Program | TX200002-011 | 5/15/2024 |
| Pennsylvania Department of Environmental Protection | 68-03441-017 | 6/30/2024 |
| Perry Johnson Laboratory Accreditation | L22-91 | 3/31/2024 |
| Tennessee Department of Environment and Concervation | TN04016-2023 | 4/30/2024 |
| Texas Commision on Environmental Quality | T104704231-23-30 | 4/30/2024 |
| Utah Department of Health Environmental Laboratory Certification | TX026932023-14 | 7/31/2024 |
| Washington Department of Ecology | C819-22 | 11/14/2023 |

# Chain of Custody

**ALS Environmental - Houston Specialties Laboratory**
10450 Stancliff Rd., Suite 210, Houston TX 77099
Phone (281)530-5656 Fax (281)530-5887
www.alsglobal.com

10450 Stancliff Rd, Ste 210
Houston, TX 77099
**T:** +1 281 530 5656
**F:** +1 281 530 5887
**www.alsglobal.com**

# Subcontract Chain of Custody

**SAMPLING STATE:** **Dept of Defense** **COC ID:** **23147**

**SUBCONTRACT TO:**

ALS Environmental
10450 Stancliff RoadSuite 210
Houston, TX 77084

**Phone:** +1 281 530 5656

**CUSTOMER INFORMATION:**

| | |
|---|---|
| **Company:** | ALS Houston |
| **Contact:** | James Guin |
| **Address:** | 10450 Stancliff Rd, Ste 210 |
| **Phone:** | +1 281 530 5656 |
| **Email:** | James.Guin@alsglobal.com |
| **Alternate Contact:** | Jumoke M. Lawal |
| **Email:** | jumoke.lawal@alsglobal.com |

**INVOICE INFORMATION:**

| | |
|---|---|
| **Company:** | ALS Houston |
| **Contact:** | Accounts Payable |
| **Address:** | 10450 Stancliff Rd, Ste 210 |
| **Phone:** | +1 281 530 5656 |
| **Reference:** | HS23090716 |
| **TSR:** | Holly Tignac |

| | LAB SAMPLE ID | CLIENT SAMPLE ID | MATRIX | COLLECT DATE |
|---|---|---|---|---|
| | ANALYSIS REQUESTED | | | DUE DATE |
| 1. | **HS23090716-02** | **LH18/24-SP650_091223_BIX** | **Water** | **12 Sep 2023 13:00** |
| | 6850-Perch. DOD Level II & Level IV in separate pdf | | | 14 Sep 2023 |
| 2. | **HS23090716-03** | **LH18/24-SP650_091223_AIX** | **Water** | **12 Sep 2023 13:00** |
| | 6850-Perch. DOD Level II & Level IV in separate pdf | | | 14 Sep 2023 |

**Comments:** Please analyze for the analysis listed above.
Send report to the emails shown above.

**QC Level:** DOD IV (DoD Data Package)

E2300826
ALS Environmental - US
HS23090716
5

Relinquished By: PC Date/Time:

Received By: Date/Time: 9-13-23 0825

Cooler ID(s): Temperature(s):

ALS Environmental

# Cooler Receipt Form

Project Chemist H

Client/Project ALS

Thermometer ID 1231

Date/Time Received: 9-13-23 Initials: cg

Date/Time Logged in: 9-13-23 Initials cg

1. Method of delivery: ○ US Mail ○ Fed Ex ○ UPS ○ DHL ☒ Courier (ALS) ○ Client

2. Samples received in: ☒ Cooler ○ Box ○ Envelope ○ Other

3. Were custody seals on coolers? ○ Yes ☒ No — If yes, how many and where?

Were they intact? ○ Yes ○ No ☒ N/A

Were they signed and dated? ○ Yes ○ No ☒ N/A

4. Packing Material: ○ Inserts ☒ Baggies ☑ Bubble Wrap ○ Gel Packs ☑ Wet Ice ○ Sleeves ○ Other

5. Foreign or Regulated Soil? ○ Yes ○ No Location of Sampling:

| Cooler Tracking Number | COC ID | Date Opened | Time Opened | Opened By | Temp °C | Temp Blank? |
|---|---|---|---|---|---|---|
| - | | 9-13-23 | 1223 | cg | 3.3 | ☐ |
| | | | | | | ☐ |
| | | | | | | ☐ |
| | | | | | | ☐ |

6. Were custody papers properly filled out (ink, signed, dated, etc)? ☒ Yes ○ No

7. Did all bottles arrive in good condition (not broken, no signs of leakage)? ☒ Yes ○ No

8. Were all sample labels complete (i.e., sample ID, analysis, preservation, etc)? ☒ Yes ○ No

9. Were appropriate bottles/containers and volumes received for the requested tests? ☒ Yes ○ No

10. Did sample labels and tags agree with custody documents? ☒ Yes ○ No

Notes, Discrepancies, & Resolutions:

Service request Label: E2300826 5

ALS Environmental - US
HS23090715

HS-HRMSCoolerReceipt R1.0

ALS Environmental - Houston HRMS

10450 Stancliff Rd., Suite 210
Houston, TX 77099
**T:** +1 281 530 5656
**F:** +1 281 530 5887
**www.alsglobal.com**

# SAMPLE ACCEPTANCE POLICY

This policy outlines the criteria samples must meet to be accepted by ALS Environmental – Houston HRMS.

**Cooler Custody Seals (desirable, mandatory if specified in SAP):**

- ✓ Intact on outside of cooler, signed and dated

**Chain-of-Custody (COC) documentation (mandatory):**

The following is required on each COC:

- ✓ Sample ID, the location, date and time of collection, collector's name, preservation type, sample type, and any other special remarks concerning the sampleThe COC must be completed in ink.
- ✓ Signature and date of relinquishing party.

In the absence of a COC at sample receipt, the COC will be requested from the client.

**Sample Integrity (mandatory):**

Samples are inspected upon arrival to ensure that sample integrity was not compromised during transfer to the laboratory.

- ✓ Sample containers must arrive in good condition (not broken or leaking).
- ✓ Samples must be labeled appropriately, including Sample IDs, and requested test using durable labels and indelible ink.
- ✓ The correct type of sample bottle must be used for the method requested.
- ✓ An appropriate sample volume, or weight, must be received.
- ✓ Sample IDs and number of containers must reconcile with the COC.
- ✓ Samples must be received within the method defined holding time.

**Temperature Requirement (varies by sample matrix):**

- ✓ Aqueous and Non-aqueous samples must be shipped and stored cold, at 0 to 6ºC.
- ✓ Tissue samples must be shipped and stored frozen, at -20 to -10ºC.
- ✓ Air samples are shipped and stored cold, at 0 to 6ºC
- ✓ The sample temperature must be recorded on the COC

All cooler inspections are documented on the Cooler Receipt Form (CRF). A separate CRF is completed for each service request. Any samples not meeting the above criteria are noted on the CRF and the Project Manager notified. The Project Manager must resolve any sample integrity issues with the client prior to proceeding with the analysis. Such resolutions are documented in writing and filed with the project folder. Data associated with samples received outside of this acceptance policy will be qualified on the case narrative of the final report

# Preparation Information Benchsheets

**ALS Environmental - Houston Specialties Laboratory**
10450 Stancliff Rd., Suite 210, Houston TX 77099
Phone (281)530-5656 Fax (281)530-5887
www.alsglobal.com

# *Preparation Information Benchsheet*

**Prep Run#:** 426475 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
**Team:** Semivoa GCMS/XMI **Prep Method:** **Prep Date/Time:** 9/14/23 08:10

| # | Lab Code | Client ID | B# | Method /Test | pH | Cl | Matrix | Amt. Ext. | Sample Description |
|---|---|---|---|---|---|---|---|---|---|
| 1 | E2300814-001 | 130_090723 | .01 | 6850/ClO4 DOD | | | Ground Water | 10mL | |
| 2 | E2300814-002 | 17WW03_090723 | .01 | 6850/ClO4 DOD | | | Ground Water | 10mL | |
| 3 | E2300814-003 | 17WW01_090723 | .01 | 6850/ClO4 DOD | | | Ground Water | 10mL | |
| 4 | E2300814-004 | 17WW02_090723 | .01 | 6850/ClO4 DOD | | | Ground Water | 10mL | |
| 5 | E2300814-005 | 17WW02_090723_a | .01 | 6850/ClO4 DOD | | | Ground Water | 10mL | |
| 6 | E2300814-006 | 17WW06_090723 | .02 | 6850/ClO4 DOD | | | Ground Water | 10mL | |
| 7 | E2300826-001 | LH18/24-SP650_091223_BIX | .01 | 6850/ClO4 DOD | | | Water | 10mL | |
| 8 | E2300826-002 | LH18/24-SP650_091223_AIX | .01 | 6850/ClO4 DOD | | | Water | 10mL | |
| 9 | E2300827-001 | LH18/24-SP650_091223_AIX | .01 | 6850/ClO4 DOD | | | Water | 10mL | |
| 10 | E2300828-001 | LH18/24-SP140_091223 | .01 | 6850/ClO4 DOD | | | Water | 10mL | |
| 11 | EQ2300447-01 | MB | | 6850/ClO4 | | | Liquid | 10mL | |
| 12 | EQ2300447-02 | LCS | | 6850/ClO4 | | | Liquid | 10mL | |
| 13 | EQ2300447-03 | DLCS | | 6850/ClO4 | | | Liquid | 10mL | |
| 14 | EQ2300447-04 | 17WW06_090723 MS | .02 | 6850/ClO4 DOD | | | Liquid | 10mL | |
| 15 | EQ2300447-05 | 17WW06_090723 DMS | .02 | 6850/ClO4 DOD | | | Liquid | 10mL | |
| 16 | K2310104-001 | LGAC-INF-091123 | .01 | 6850/ClO4 | | | Water | 10mL | |
| 17 | K2310104-002 | LGAC-INT1-091123 | .01 | 6850/ClO4 | | | Water | 10mL | |
| 18 | K2310104-003 | LGAC-INT2-091123 | .01 | 6850/ClO4 | | | Water | 10mL | |

## Spiking Solutions

Name: Perchlorate Intermediate Stock1 Inventory ID 230342 Logbook Ref: Perchlorate (1st Source) Expires On: 03/07/2024

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| EQ2300447-02 | 1.00µL | EQ2300447-02 | 1.00µL | EQ2300447-03 | 1.00µL | EQ2300447-03 | 1.00µL | EQ2300447-04 | 1.00µL | EQ2300447-05 | 1.00µL |

Name: Perchlorate Internal Standard 1ug/mL Inventory ID 230372 Logbook Ref: Perchlorate Internal Standard Expires On: 04/30/2024

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| E2300814-001 | 100.00µL | E2300814-002 | 100.00µL | E2300814-003 | 100.00µL | E2300814-004 | 100.00µL | E2300814-005 | 100.00µL | E2300814-006 | 100.00µL |
| E2300826-001 | 100.00µL | E2300826-002 | 100.00µL | E2300827-001 | 100.00µL | E2300828-001 | 100.00µL | EQ2300447-01 | 100.00µL | EQ2300447-01 | 100.00µL |
| EQ2300447-02 | 100.00µL | EQ2300447-02 | 100.00µL | EQ2300447-03 | 100.00µL | EQ2300447-03 | 100.00µL | EQ2300447-04 | 100.00µL | EQ2300447-05 | 100.00µL |
| K2310104-001 | 100.00µL | K2310104-002 | 100.00µL | K2310104-003 | 100.00µL | | | | | | |

## Preparation Materials

| | | | | | |
|---|---|---|---|---|---|
| Water HPLC Grade | HPLC water 5/18/23CG (229315) | 6850 Amber Glass screw vial | 2mL Screw Top Vial (221894) | 6850 0.45um syringe filters | 6850 0.45 SYRING FILTER (229979) |
| 6850 20mM amonium acetate in H2O | (230746) | 6850 Luer-Lok Syringes | luer-lock syringes (228116) | | |

# *Preparation Information Benchsheet*

**Prep Run#:** 426475 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
**Team:** Semivoa GCMS/XMI **Prep Method:** **Prep Date/Time:** 9/14/23 08:10

## Preparation Steps

Step: Preparation
Started: 9/14/23 08:10
Finished: 9/14/23 09:10
By: XMI
Comments

Comments: _____

Reviewed By: _____ Date: _____

Chain of Custody

Relinquished By: _____ Date: _____ Extracts Examined

Received By: _____ Date: _____ Yes No

# Analytical Results

**ALS Environmental - Houston Specialties Laboratory**
10450 Stancliff Rd., Suite 210, Houston TX 77099
Phone (281)530-5656 Fax (281)530-5887
www.alsglobal.com

**ALS Group USA, Corp. dba ALS Environmental**

Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | ALS Environmental - US | **Service Request:** | E2300826 |
| **Project:** | HS23090716 | **Date Collected:** | 9/12/23 1300 |
| **Sample Matrix:** | Water | **Date Received:** | 9/13/23 |
| **Sample Name:** | LH18/24-SP650_091223_BIX | **Units:** | µg/L |
| **Lab Code:** | E2300826-001 | **Basis:** | NA |

**Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry**

**Analytical Method:** 6850

| Analyte Name | Result | Q | LOQ | LOD | MDL | Dilution Factor | Date Extracted | Date Analyzed | Extraction Lot | Analysis Lot | Note |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | **67.5** | | 0.500 | 0.250 | 0.125 | 5 | 9/14/23 | 9/14/23 11:32 | 426475 | 817192 | |

**ALS Group USA, Corp. dba ALS Environmental**

Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | ALS Environmental - US | **Service Request:** | E2300826 |
| **Project:** | HS23090716 | **Date Collected:** | 9/12/23 1300 |
| **Sample Matrix:** | Water | **Date Received:** | 9/13/23 |
| **Sample Name:** | LH18/24-SP650_091223_AIX | **Units:** | µg/L |
| **Lab Code:** | E2300826-002 | **Basis:** | NA |

**Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry**

**Analytical Method:** 6850

| Analyte Name | Result | Q | LOQ | LOD | MDL | Dilution Factor | Date Extracted | Date Analyzed | Extraction Lot | Analysis Lot | Note |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | **0.185** | | 0.100 | 0.0500 | 0.0250 | 1 | 9/14/23 | 9/14/23 11:38 | 426475 | 817192 | |

**ALS Group USA, Corp. dba ALS Environmental**

Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | ALS Environmental - US | **Service Request:** | E2300826 |
| **Project:** | HS23090716 | **Date Collected:** | NA |
| **Sample Matrix:** | Water | **Date Received:** | NA |
| **Sample Name:** | Method Blank | **Units:** | µg/L |
| **Lab Code:** | EQ2300447-01 | **Basis:** | NA |

**Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry**

**Analytical Method:** 6850

| Analyte Name | Result | Q | LOQ | LOD | MDL | Dilution Factor | Date Extracted | Date Analyzed | Extraction Lot | Analysis Lot | Note |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | ND | U | 0.100 | 0.0500 | 0.0250 | 1 | 9/14/23 | 9/14/23 10:51 | 426475 | 817192 | |

# Accuracy & Precision

**ALS Environmental - Houston Specialties Laboratory**
10450 Stancliff Rd., Suite 210, Houston TX 77099
Phone (281)530-5656 Fax (281)530-5887
www.alsglobal.com

**ALS Group USA, Corp. dba ALS Environmental**

QA/QC Report

**Client:** ALS Environmental - US
**Project:** HS23090716
**Sample Matrix:** Water

**Service Request:** E2300826
**Date Analyzed:** 9/14/23

## Lab Control Sample Summary
## Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

**Analytical Method:** 6850
**Prep Method:**

**Units:** µg/L
**Basis:** NA

**Extraction Lot:** 426475

| | Lab Control Sample EQ2300447-02 | | | Duplicate Lab Control Sample EQ2300447-03 | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Analyte Name** | **Result** | **Spike Amount** | **% Rec** | **Result** | **Spike Amount** | **% Rec** | **% Rec Limits** | **RPD** | **RPD Limit** |
| Perchlorate | 0.108 | 0.100 | 108 | 0.114 | 0.100 | 114 | 84 - 119 | 6 | 15 |

**Results flagged with an asterisk (*) indicate values outside control criteria.**

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

**ALS Group USA, Corp. dba ALS Environmental**

Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | ALS Environmental - US | **Service Request:** | E2300826 |
| **Project:** | HS23090716 | **Date Collected:** | NA |
| **Sample Matrix:** | Water | **Date Received:** | NA |
| **Sample Name:** | Lab Control Sample | **Units:** | µg/L |
| **Lab Code:** | EQ2300447-02 | **Basis:** | NA |

**Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry**

**Analytical Method:** 6850

| Analyte Name | Result | Q | LOQ | LOD | MDL | Dilution Factor | Date Extracted | Date Analyzed | Extraction Lot | Analysis Lot | Note |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | **0.108** | | 0.100 | 0.0500 | 0.0250 | 1 | 9/14/23 | 9/14/23 11:26 | 426475 | 817192 | |

**ALS Group USA, Corp. dba ALS Environmental**

Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | ALS Environmental - US | **Service Request:** | E2300826 |
| **Project:** | HS23090716 | **Date Collected:** | NA |
| **Sample Matrix:** | Water | **Date Received:** | NA |
| **Sample Name:** | Duplicate Lab Control Sample | **Units:** | µg/L |
| **Lab Code:** | EQ2300447-03 | **Basis:** | NA |

**Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry**

**Analytical Method:** 6850

| Analyte Name | Result | Q | LOQ | LOD | MDL | Dilution Factor | Date Extracted | Date Analyzed | Extraction Lot | Analysis Lot | Note |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | **0.114** | | 0.100 | 0.0500 | 0.0250 | 1 | 9/14/23 | 9/14/23 11:02 | 426475 | 817192 | |

# Initial Calibration

**ALS Environmental - Houston HRMS**
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

**20230802**

# Injection Log

LCMS01 -Shimadzu 8050

**1st Review: XM**
**2nd Review: KN**

**ICAL Date:** 8/2/2023
**Cal. Std. xp:** 03/07/2024
**ICAL ID:** EC2300012

**Mobile Phases :** **A:**20mM ammonium acetate in water 230388 **B:**Acetonitrile 229152

| | Sample Name | | File Name | Acquisition Method | Dilution | Comments | Date/Time |
|---|---|---|---|---|---|---|---|
| 1 | IB | | 2230802-001 | Perchlorate6850c.lcm | 1x | | 8/2/2023 13:05 |
| 2 | IB | | 2230802-002 | Perchlorate6850c.lcm | 1x | | 8/2/2023 13:11 |
| 3 | Perchlorate ICAL 1 | | 2230802-003 | Perchlorate6850c.lcm | 1x | 230373 | 8/2/2023 13:17 |
| 4 | Perchlorate ICAL 2 | | 2230802-004 | Perchlorate6850c.lcm | 1x | 230375 | 8/2/2023 13:23 |
| 5 | Perchlorate ICAL 3 | | 2230802-005 | Perchlorate6850c.lcm | 1x | 230376 | 8/2/2023 13:28 |
| 6 | Perchlorate ICAL 4 | | 2230802-006 | Perchlorate6850c.lcm | 1x | 230377 | 8/2/2023 13:34 |
| 7 | Perchlorate ICAL 5 | | 2230802-007 | Perchlorate6850c.lcm | 1x | 230378 | 8/2/2023 13:39 |
| 8 | Perchlorate ICAL 6 | | 2230802-008 | Perchlorate6850c.lcm | 1x | 230379 | 8/2/2023 13:45 |
| 9 | Perchlorate ICAL 7 | | 2230802-009 | Perchlorate6850c.lcm | 1x | 230380 | 8/2/2023 13:50 |
| 10 | Perchlorate ICAL 8 | | 2230802-010 | Perchlorate6850c.lcm | 1x | 230381 | 8/2/2023 13:56 |
| 11 | Perchlorate ICAL 9 | | 2230802-011 | Perchlorate6850c.lcm | 1x | 230382 | 8/2/2023 14:02 |
| 12 | Perchlorate ICAL 10 | | 2230802-012 | Perchlorate6850c.lcm | 1x | 230383 | 8/2/2023 14:07 |
| 13 | PerchlorateICV | | 2230802-013 | Perchlorate6850c.lcm | 1x | 230385 | 8/2/2023 14:19 |

# *Initial Calibration - Detailed Report*

**Calibration ID:** EC2300012 **Instrument ID:** E-LCMS-01
**Column Name:** 1

| # | Lab Code | Sample Name | File Location | Aquisition Date |
|---|---|---|---|---|
| 01 | EC2300012-01 | Perchlorate ICAL 1 | 2230802-003 | 08/02/2023 13:17 |
| 02 | EC2300012-02 | Perchlorate ICAL 2 | 2230802-004 | 08/02/2023 13:23 |
| 03 | EC2300012-03 | Perchlorate ICAL 3 | 2230802-005 | 08/02/2023 13:28 |
| 04 | EC2300012-04 | Perchlorate ICAL 4 | 2230802-006 | 08/02/2023 13:34 |
| 05 | EC2300012-05 | Perchlorate ICAL 5 | 2230802-007 | 08/02/2023 13:39 |
| 06 | EC2300012-06 | Perchlorate ICAL 6 | 2230802-008 | 08/02/2023 13:45 |
| 07 | EC2300012-07 | Perchlorate ICAL 7 | 2230802-009 | 08/02/2023 13:50 |
| 08 | EC2300012-08 | Perchlorate ICAL 8 | 2230802-010 | 08/02/2023 13:56 |
| 09 | EC2300012-09 | Perchlorate ICAL 9 | 2230802-011 | 08/02/2023 14:02 |
| 10 | EC2300012-10 | Perchlorate ICAL 10 | 2230802-012 | 08/02/2023 14:07 |

**Analyte** **Curve Fit** **Weighting**

**Perchlorate** **Average RF** **RSD = 2.086** **Average RF = 0.1475**

| # | Amount | RF | # | Amount | RF | # | Amount | RF | # | Amount | RF |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 01 | 0.1000 | 0.1428 | 02 | 0.5000 | 0.1421 | 03 | 0.7000 | 0.1457 | 04 | 1.0000 | 0.149 |
| 05 | 2.0000 | 0.1515 | 06 | 5.0000 | 0.1475 | 07 | 10.0000 | 0.1503 | 08 | 20.0000 | 0.1477 |
| 09 | 30.0000 | 0.1485 | 10 | 50.0000 | 0.1496 | | | | | | |

**Analyte**

**Perchlorate** RSE = 2.09

| # | Amount | Calculated Conc | %D | # | Amount | Calculated Conc | %D | # | Amount | Calculated Conc | %D |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 01 | 0.1000 | 0.0968 | -3.2 | 02 | 0.5000 | 0.482 | -3.6 | 03 | 0.7000 | 0.692 | -1.2 |
| 04 | 1.0000 | 1.01 | 1.0 | 05 | 2.0000 | 2.05 | 2.7 | 06 | 5.0000 | 5.00 | -0.0 |
| 07 | 10.0000 | 10.2 | 1.9 | 08 | 20.0000 | 20.0 | 0.2 | 09 | 30.0000 | 30.2 | 0.7 |
| 10 | 50.0000 | 50.7 | 1.4 | | | | | | | | |

# *Initial Calibration Verification Summary Report*

| | | | |
|---|---|---|---|
| **Calibration ID:** | EC2300012 | **Instrument ID:** | E-LCMS-01 |
| **Datafile ID:** | 2230802-013 | **Column Name:** | 1 |

| Analyte | Lab Code | Type | Curve Fit | True Value | Calc Conc | Units | Result | Criteria |
|---|---|---|---|---|---|---|---|---|
| Perchlorate | EC2300012-11 | T | Average RF | 10 | 10.670 | ng/mL | 6.7 | <= 15 |

# Insight Report

Printed at 8/3/2023 9:30:46 AM

Method File: I:\LCMS01\DATA\20230802\20230802ICAL.lcm
Project File: I:\LCMS01\DATA\20230802\no use\20230802ICAL.damlp

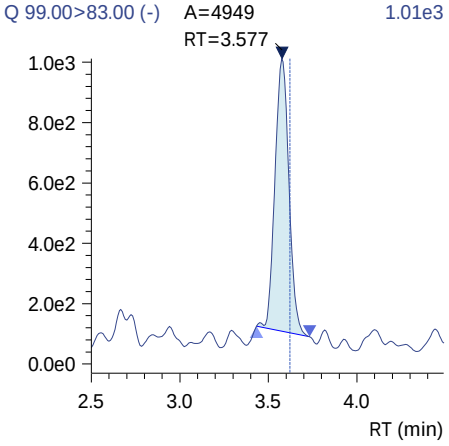
## Perchlorate ICAL 1

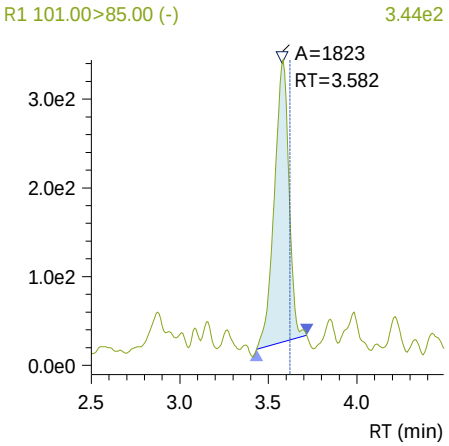
Sample ID: Perchlorate ICAL 1
Date Acquired: 8/2/2023 1:17:39 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230802\2230802-003.lcd
Vial: 1 | Inj. Volume: 10.0000uL | Tray: 1

| Name | Mode ID | Found RT | Area | ISTD Area | Conc. | Unit | Ref 1 m/z | Ref 1 Actual Ratio | Comment 1 |
|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | Auto | 3.577 | 4949 | 346538 | 0.0968 | ng/mL | 101.00 >85.00 | 36.83 | 21.29-39.54 |
| Sodium Perchlorate-18O4 _IS | Auto | 3.572 | 346538 | 346538 | 1.0000 | ng/mL | ---- | ---- | |

### Perchlorate

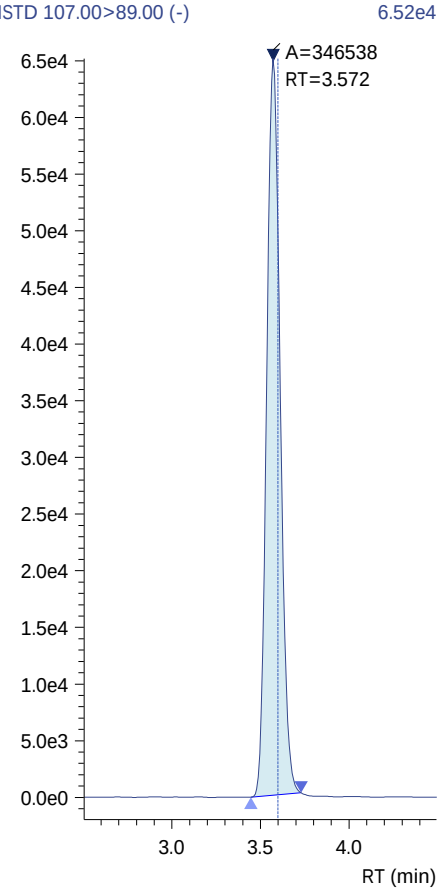
Conc 0.0968
R#1 36.83 (30.41)




### Sodium Perchlorate-18O4_IS

Conc 1.0000



# Insight Report

Printed at 8/3/2023 9:30:46 AM

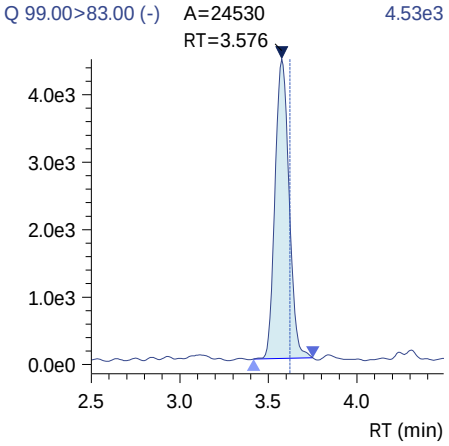
## Perchlorate ICAL 2

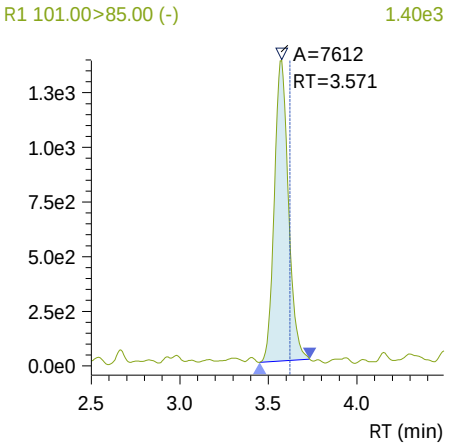
Sample ID: Perchlorate ICAL 2
Date Acquired: 8/2/2023 1:23:13 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230802\2230802-004.lcd
Vial: 2 | Inj. Volume: 10.0000uL | Tray: 1

| Name | Mode ID | Found RT | Area | ISTD Area | Conc. | Unit | Ref 1 m/z | Ref 1 Actual Ratio | Comment 1 |
|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | Auto | 3.576 | 24530 | 345149 | 0.4820 | ng/mL | 101.00 >85.00 | 31.03 | 21.29-39.54 |
| Sodium Perchlorate-18O4 _IS | Auto | 3.571 | 345149 | 345149 | 1.0000 | ng/mL | ---- | ---- | |

### Perchlorate

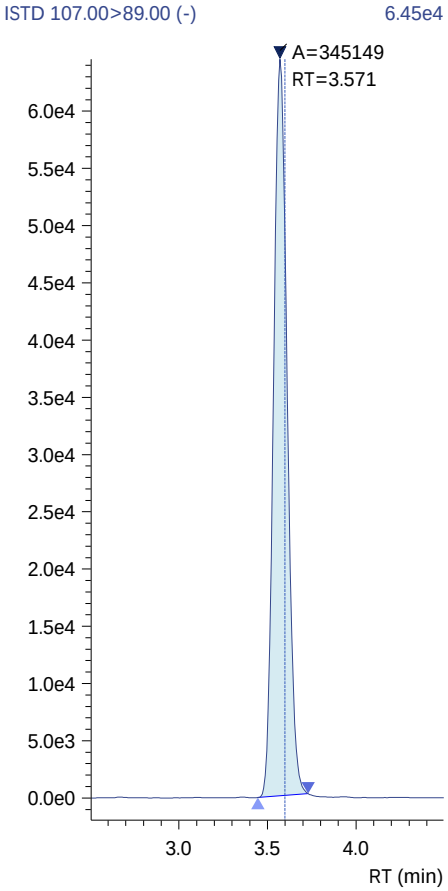
Conc 0.4820
R#1 31.03 (30.41)




### Sodium Perchlorate-18O4_IS

Conc 1.0000



# Insight Report



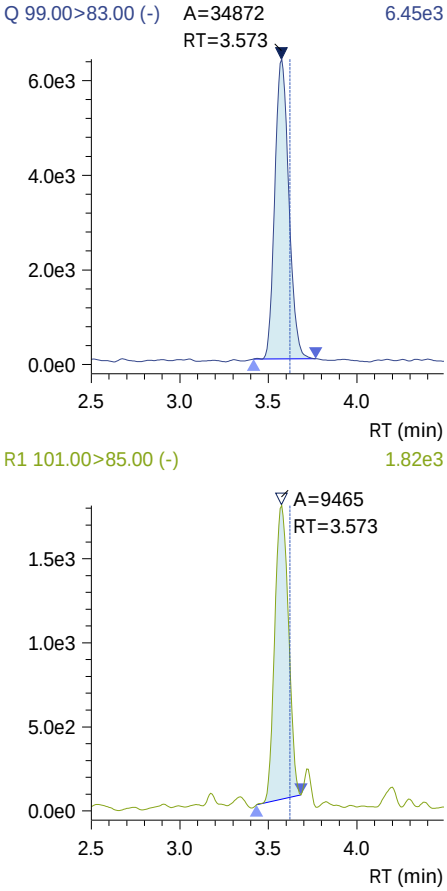
## Perchlorate ICAL 3

Sample ID: Perchlorate ICAL 3
Date Acquired: 8/2/2023 1:28:44 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230802\2230802-005.lcd
Vial: 3 | Inj. Volume: 10.0000uL | Tray: 1

| Name | Mode ID | Found RT | Area | ISTD Area | Conc. | Unit | Ref 1 m/z | Ref 1 Actual Ratio | Comment 1 |
|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | Auto | 3.573 | 34872 | 341974 | 0.6915 | ng/mL | 101.00 >85.00 | 27.14 | 21.29-39.54 |
| Sodium Perchlorate-18O4 _IS | Auto | 3.570 | 341974 | 341974 | 1.0000 | ng/mL | ---- | ---- | |

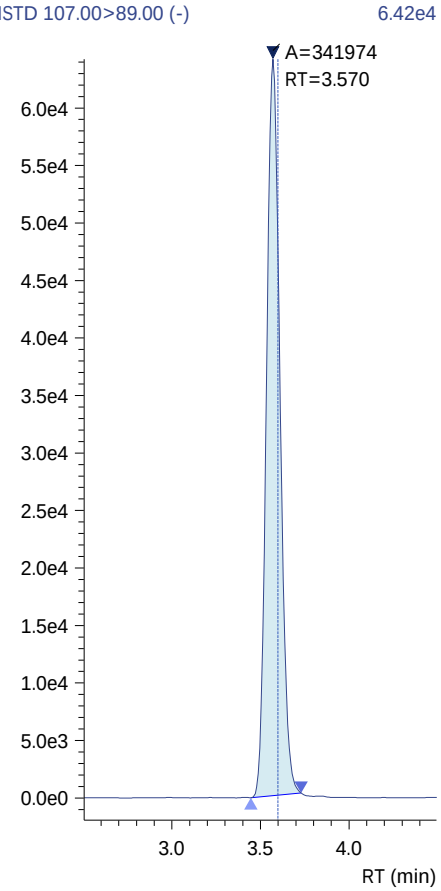
### Perchlorate

Conc 0.6915
R#1 27.14 (30.41)




### Sodium Perchlorate-18O4_IS

Conc 1.0000



# Insight Report



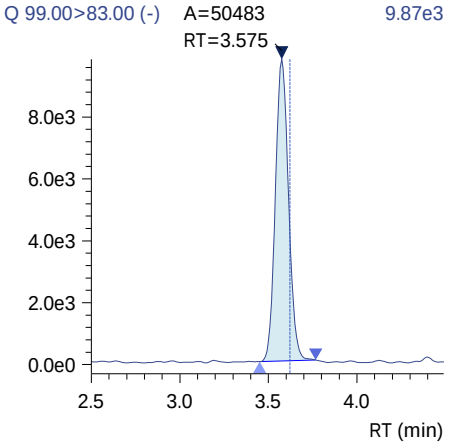
## Perchlorate ICAL 4

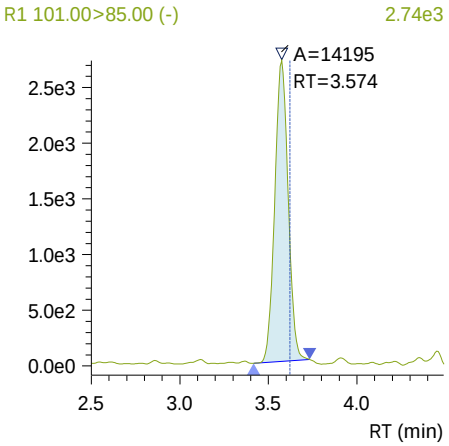
Sample ID: Perchlorate ICAL 4
Date Acquired: 8/2/2023 1:34:20 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230802\2230802-006.lcd
Vial: 4 | Inj. Volume: 10.0000uL | Tray: 1

| Name | Mode ID | Found RT | Area | ISTD Area | Conc. | Unit | Ref 1 m/z | Ref 1 Actual Ratio | Comment 1 |
|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | Auto | 3.575 | 50483 | 338838 | 1.0104 | ng/mL | 101.00 >85.00 | 28.12 | 21.29-39.54 |
| Sodium Perchlorate-18O4 _IS | Auto | 3.570 | 338838 | 338838 | 1.0000 | ng/mL | ---- | ---- | |

### Perchlorate

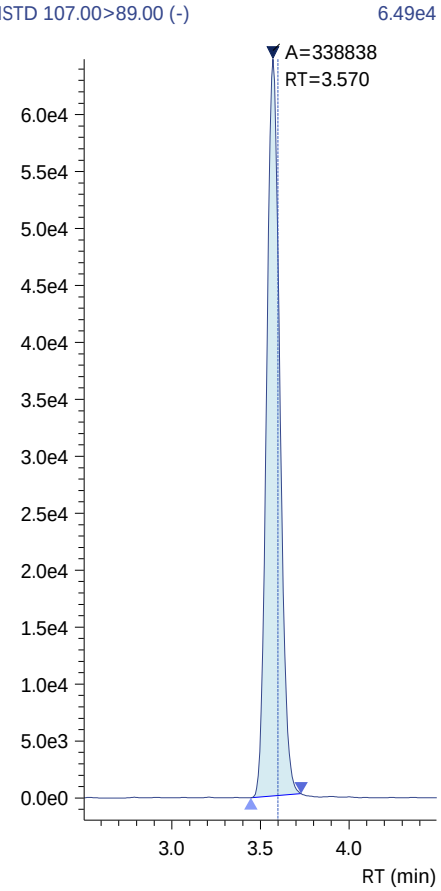
Conc 1.0104
R#1 28.12 (30.41)




### Sodium Perchlorate-18O4_IS

Conc 1.0000



# Insight Report

Printed at 8/3/2023 9:30:46 AM

## Perchlorate ICAL 5

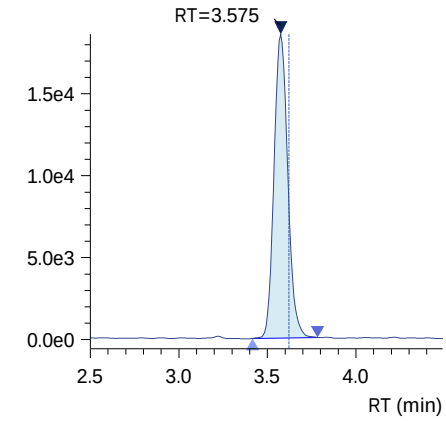
Sample ID: Perchlorate ICAL 5
Date Acquired: 8/2/2023 1:39:51 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230802\2230802-007.lcd
Vial: 5 | Inj. Volume: 10.0000uL | Tray: 1

| Name | Mode ID | Found RT | Area | ISTD Area | Conc. | Unit | Ref 1 m/z | Ref 1 Actual Ratio | Comment 1 |
|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | Auto | 3.575 | 100319 | 331124 | 2.0545 | ng/mL | 101.00 >85.00 | 27.89 | 21.29-39.54 |
| Sodium Perchlorate-18O4 _IS | Auto | 3.570 | 331124 | 331124 | 1.0000 | ng/mL | ---- | ---- | |

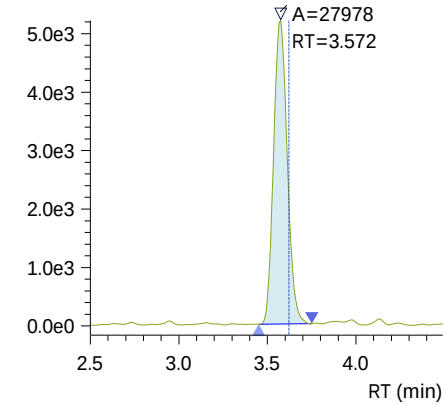
### Perchlorate

Conc 2.0545
R#1 27.89 (30.41)

Q 99.00>83.00 (-) A=100319 1.86e4



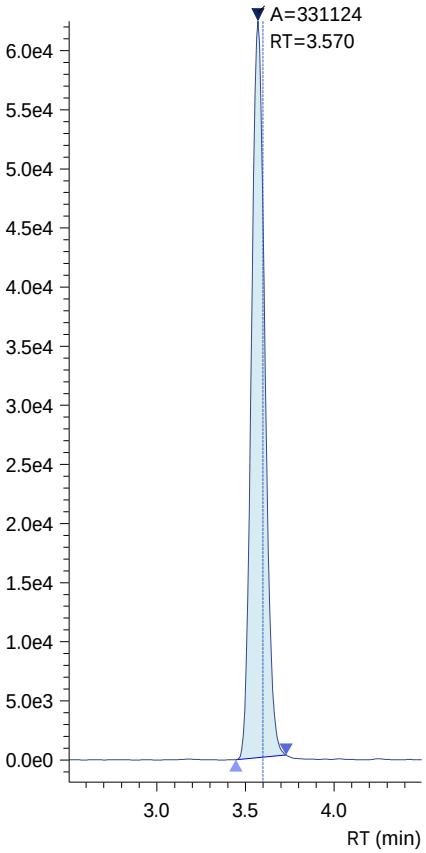

R1 101.00>85.00 (-) 5.22e3




### Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 6.25e4



# Insight Report

Printed at 8/3/2023 9:30:46 AM

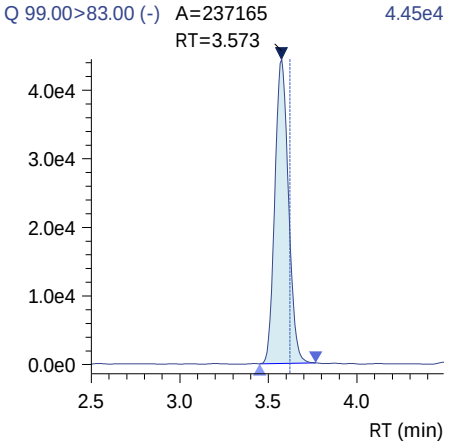
## Perchlorate ICAL 6

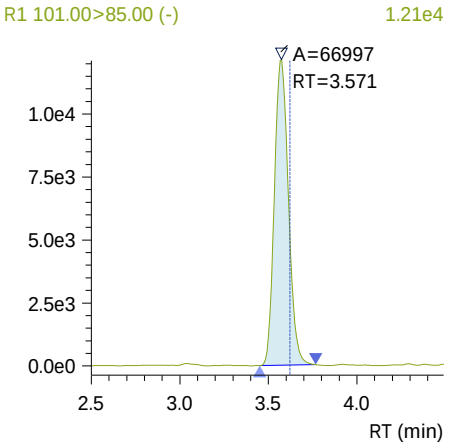
Sample ID: Perchlorate ICAL 6
Date Acquired: 8/2/2023 1:45:24 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230802\2230802-008.lcd
Vial: 6 | Inj. Volume: 10.0000uL | Tray: 1

| Name | Mode ID | Found RT | Area | ISTD Area | Conc. | Unit | Ref 1 m/z | Ref 1 Actual Ratio | Comment 1 |
|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | Auto | 3.573 | 237165 | 321666 | 5.0000 | ng/mL | 101.00 >85.00 | 28.25 | 21.29-39.54 |
| Sodium Perchlorate-18O4 _IS | Auto | 3.570 | 321666 | 321666 | 1.0000 | ng/mL | ---- | ---- | |

### Perchlorate

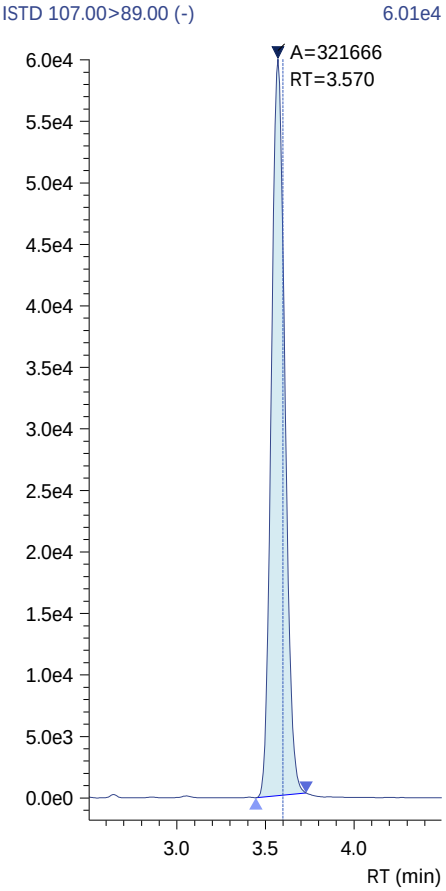
Conc 5.0000
R#1 28.25 (30.41)




### Sodium Perchlorate-18O4_IS

Conc 1.0000



# Insight Report

Printed at 8/3/2023 9:30:46 AM

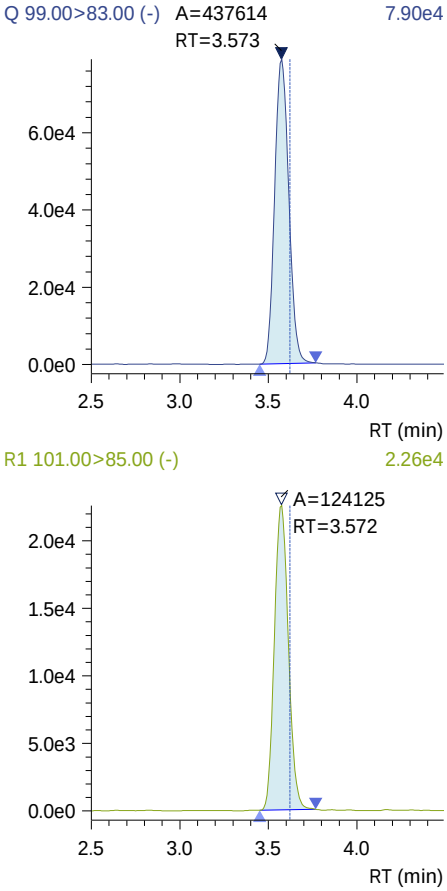
## Perchlorate ICAL 7

Sample ID: Perchlorate ICAL 7
Date Acquired: 8/2/2023 1:50:57 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230802\2230802-009.lcd
Vial: 7 | Inj. Volume: 10.0000uL | Tray: 1

| Name | Mode ID | Found RT | Area | ISTD Area | Conc. | Unit | Ref 1 m/z | Ref 1 Actual Ratio | Comment 1 |
|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | Auto | 3.573 | 437614 | 291215 | 10.1905 | ng/mL | 101.00 >85.00 | 28.36 | 21.29-39.54 |
| Sodium Perchlorate-18O4_IS | Auto | 3.570 | 291215 | 291215 | 1.0000 | ng/mL | ---- | ---- | |

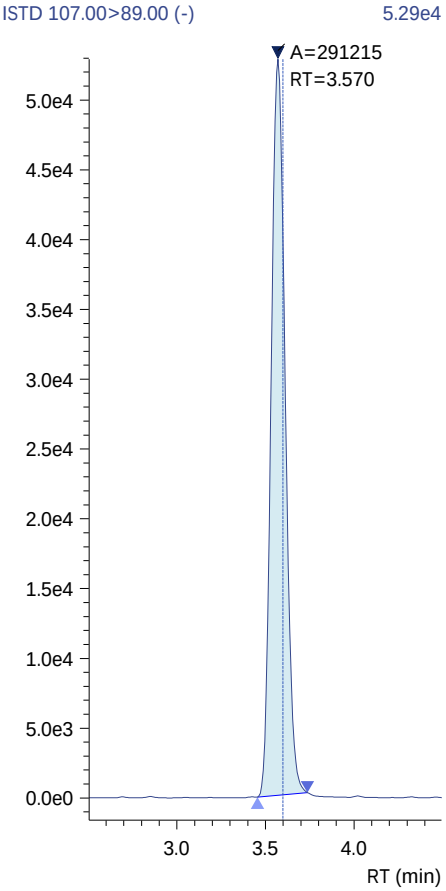
### Perchlorate

Conc 10.1905
R#1 28.36 (30.41)




### Sodium Perchlorate-18O4_IS

Conc 1.0000



# Insight Report

Printed at 8/3/2023 9:30:46 AM

## Perchlorate ICAL 8

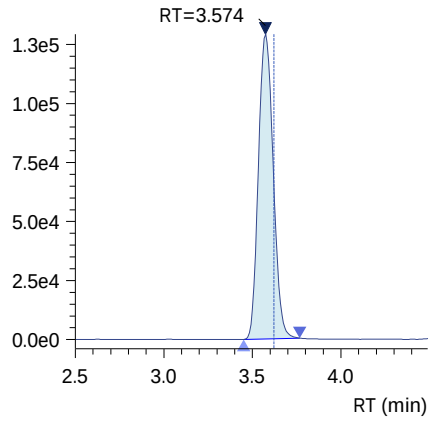
Sample ID: Perchlorate ICAL 8
Date Acquired: 8/2/2023 1:56:33 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230802\2230802-010.lcd
Vial: 8 | Inj. Volume: 10.0000uL | Tray: 1

| Name | Mode ID | Found RT | Area | ISTD Area | Conc. | Unit | Ref 1 m/z | Ref 1 Actual Ratio | Comment 1 |
|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | Auto | 3.574 | 749856 | 253829 | 20.03 36 | ng/mL | 101.00 >85.00 | 28.56 | 21.29-39.54 |
| Sodium Perchlorate-18O4 _IS | Auto | 3.569 | 253829 | 253829 | 1.0000 | ng/mL | ---- | ---- | |

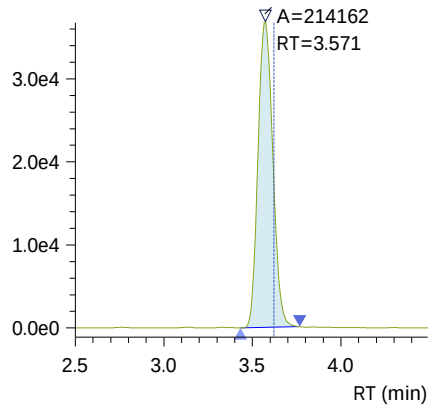
### Perchlorate

Conc 20.0336
R#1 28.56 (30.41)

Q 99.00>83.00 (-) A=749856 1.29e5



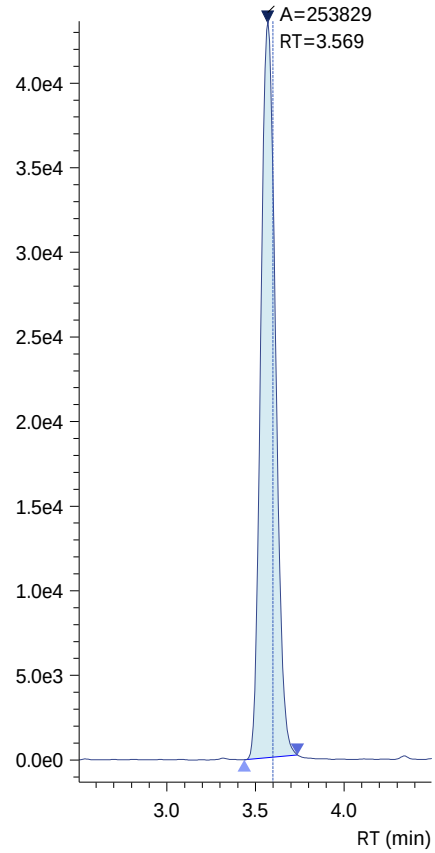

R1 101.00>85.00 (-) 3.68e4




### Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 4.37e4



# Insight Report

Printed at 8/3/2023 9:30:46 AM

## Perchlorate ICAL 9

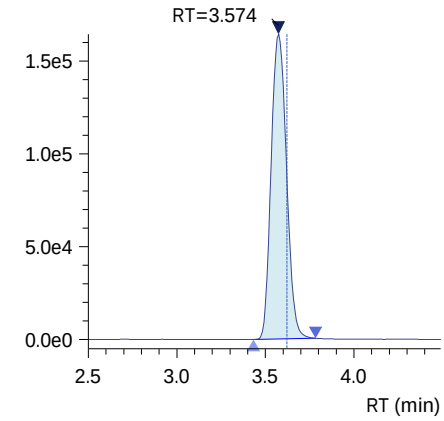
Sample ID: Perchlorate ICAL 9
Date Acquired: 8/2/2023 2:02:07 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230802\2230802-011.lcd
Vial: 9 | Inj. Volume: 10.0000uL | Tray: 1

| Name | Mode ID | Found RT | Area | ISTD Area | Conc. | Unit | Ref 1 m/z | Ref 1 Actual Ratio | Comment 1 |
|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | Auto | 3.574 | 990671 | 222379 | 30.2105 | ng/mL | 101.00 >85.00 | 27.95 | 21.29-39.54 |
| Sodium Perchlorate-18O4_IS | Auto | 3.568 | 222379 | 222379 | 1.0000 | ng/mL | ---- | ---- | |

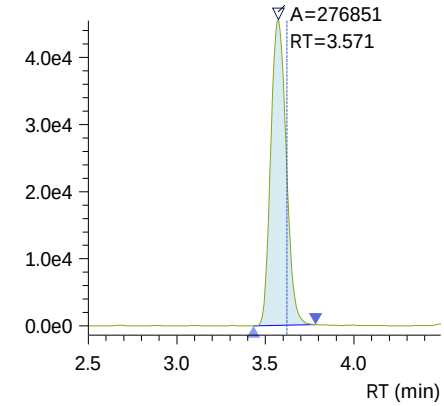
### Perchlorate

Conc 30.2105
R#1 27.95 (30.41)

Q 99.00>83.00 (-) A=990671 1.64e5



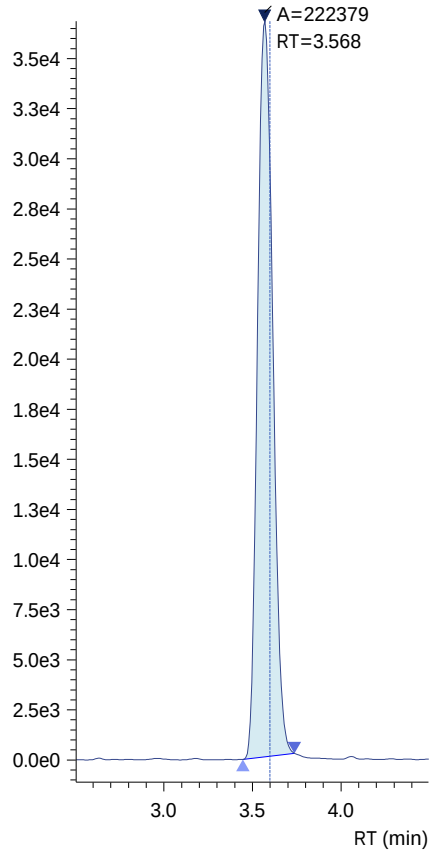

R1 101.00>85.00 (-) 4.55e4




### Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 3.69e4



# Insight Report

Printed at 8/3/2023 9:30:46 AM

## Perchlorate ICAL 10

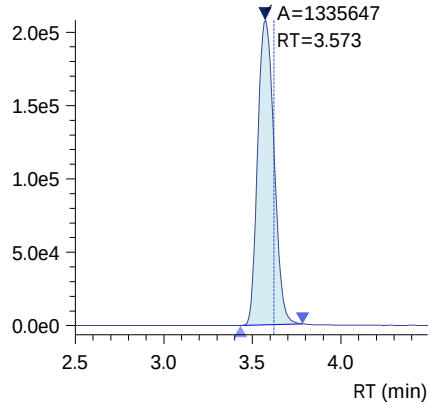
Sample ID: Perchlorate ICAL 10
Date Acquired: 8/2/2023 2:07:39 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230802\2230802-012.lcd
Vial: 10 | Inj. Volume: 10.0000uL | Tray: 1

| Name | Mode ID | Found RT | Area | ISTD Area | Conc. | Unit | Ref 1 m/z | Ref 1 Actual Ratio | Comment 1 |
|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | Auto | 3.573 | 1335647 | 178573 | 50.72<br>20 | ng/mL | 101.00<br>>85.00 | 28.04 | 21.29-39.54 |
| Sodium Perchlorate-18O4_IS | Auto | 3.567 | 178573 | 178573 | 1.0000 | ng/mL | ---- | ---- | |

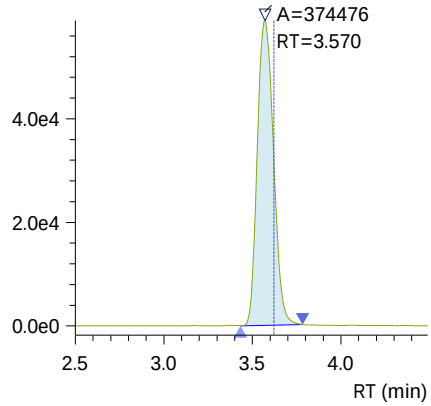
### Perchlorate

Conc 50.7220
R#1 28.04 (30.41)

Q 99.00>83.00 (-) 2.08e5



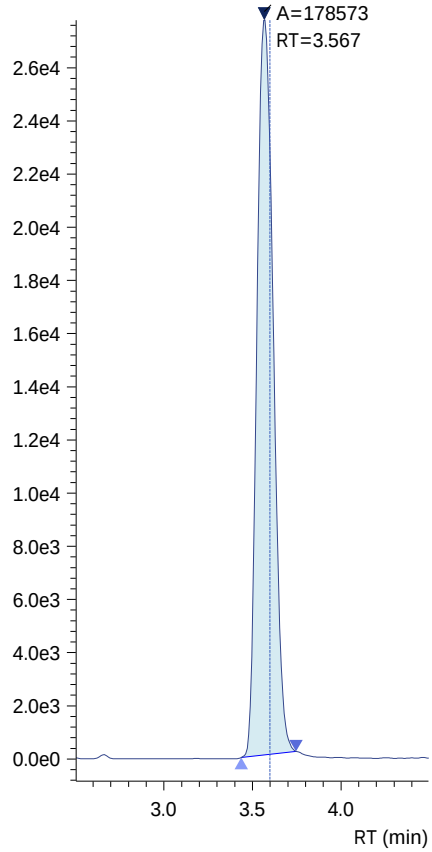

R1 101.00>85.00 (-) 5.90e4




### Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 2.78e4



# Insight Report

Printed at 8/3/2023 9:30:46 AM

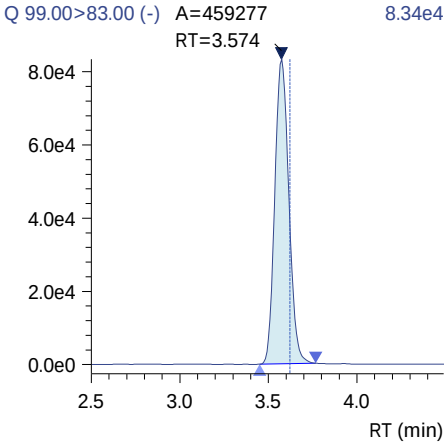
## PerchlorateICV

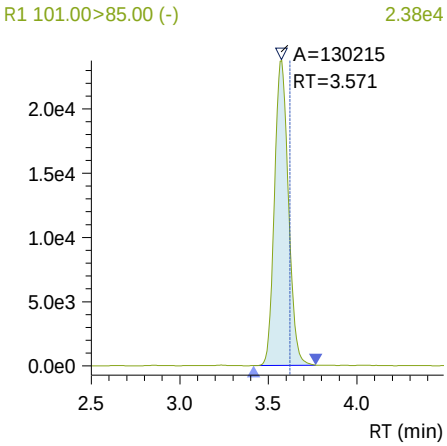
Sample ID: PerchlorateICV
Date Acquired: 8/2/2023 2:19:46 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230802\2230802-013.lcd
Vial: 11 | Inj. Volume: 10.0000uL | Tray: 1

| Name | Mode ID | Found RT | Area | ISTD Area | Conc. | Unit | Ref 1 m/z | Ref 1 Actual Ratio | Comment 1 |
|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | Auto | 3.574 | 459277 | 291890 | 10.6703 | ng/mL | 101.00 >85.00 | 28.35 | 21.29-39.54 |
| Sodium Perchlorate-18O4_IS | Auto | 3.570 | 291890 | 291890 | 1.0000 | ng/mL | ---- | ---- | |

### Perchlorate

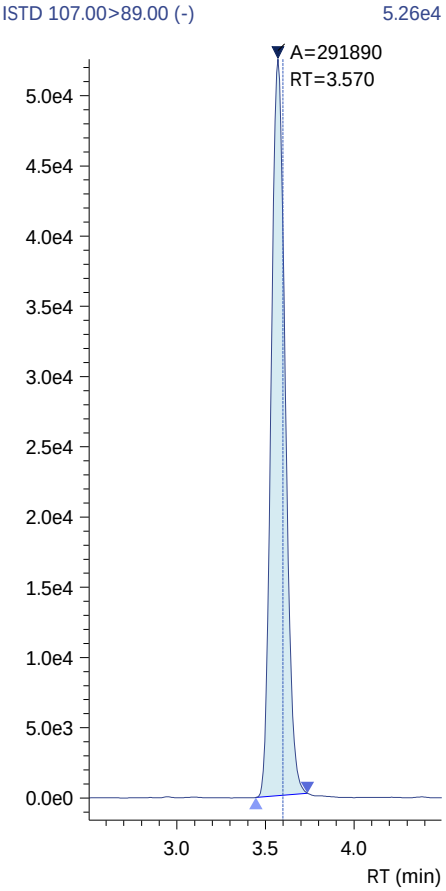
Conc 10.6703
R#1 28.35 (30.41)




### Sodium Perchlorate-18O4_IS

Conc 1.0000



# Chromatograms and Selected Ion Monitoring

**ALS Environmental - Houston HRMS**
10450 Stancliff Rd., Suite 320, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

**20230914-817192**

# Injection Log

LCMS01 -Shimadzu 8050

**1st Review: XM**
**2nd Review: KN**

**ICAL Date:** 8/2/2023
**Cal. Std. xp:** 02/02/2024
**ICAL ID:** EC2300012

**Mobile Phases :** **A:**20mM ammonium acetate in water 231240 **B:**Acetonitrile 229152

| | Sample Name | | File Name | Acquisition Method | Dilution | Comments | Date/Time |
|---|---|---|---|---|---|---|---|
| 1 | IB | | 2230914-001 | Perchlorate6850c.lcm | 1x | | 9/14/2023 9:58 |
| 2 | LODV | | 2230914-002 | Perchlorate6850c.lcm | 1x | 230386 | 9/14/2023 10:04 |
| 3 | ICS | | 2230914-003 | Perchlorate6850c.lcm | 1x | 32103051 | 9/14/2023 10:39 |
| 4 | CCV | | 2230914-004 | Perchlorate6850c.lcm | 1x | 230380 | 9/14/2023 10:44 |
| 5 | EQ2300447-01 | | 2230914-005 | Perchlorate6850c.lcm | 1x | | 9/14/2023 10:51 |
| 6 | EQ2300447-03 | | 2230914-007 | Perchlorate6850c.lcm | 1x | | 9/14/2023 11:02 |
| 7 | EQ2300447-02 | | 2230914-006 | Perchlorate6850c.lcm | 1x | | 9/14/2023 11:26 |
| 8 | E2300826-001x5 | | 2230914-008 | Perchlorate6850c.lcm | 5x | | 9/14/2023 11:32 |
| 9 | E2300826-002 | | 2230914-009 | Perchlorate6850c.lcm | 1x | | 9/14/2023 11:38 |
| 10 | E2300827-001 | | 2230914-010 | Perchlorate6850c.lcm | 1x | | 9/14/2023 11:43 |
| 11 | E2300828-001x1k | | 2230914-011 | Perchlorate6850c.lcm | 1000x | | 9/14/2023 11:49 |
| 12 | K2310104-001 | | 2230914-012 | Perchlorate6850c.lcm | 1x | | 9/14/2023 11:54 |
| 13 | K2310104-002 | | 2230914-013 | Perchlorate6850c.lcm | 1x | | 9/14/2023 12:00 |
| 14 | K2310104-003 | | 2230914-014 | Perchlorate6850c.lcm | 1x | | 9/14/2023 12:05 |
| 15 | CCV | | 2230914-015 | Perchlorate6850c.lcm | 1x | 230380 | 9/14/2023 12:11 |
| 16 | E2300814-001 | | 2230914-016 | Perchlorate6850c.lcm | 1x | | 9/14/2023 12:17 |
| 17 | E2300814-002 | | 2230914-017 | Perchlorate6850c.lcm | 1x | | 9/14/2023 12:22 |
| 18 | E2300814-003 | | 2230914-018 | Perchlorate6850c.lcm | 1x | | 9/14/2023 12:28 |
| 19 | E2300814-004x500 | | 2230914-019 | Perchlorate6850c.lcm | 500x | | 9/14/2023 12:33 |
| 20 | E2300814-005x500 | | 2230914-020 | Perchlorate6850c.lcm | 500x | | 9/14/2023 12:39 |
| 21 | E2300814-006x5k | | 2230914-021 | Perchlorate6850c.lcm | 5000x | | 9/14/2023 12:45 |
| 22 | EQ2300447-04x5k | | 2230914-022 | Perchlorate6850c.lcm | 5000x | | 9/14/2023 12:50 |
| 23 | EQ2300447-05x5k | | 2230914-023 | Perchlorate6850c.lcm | 5000x | | 9/14/2023 12:56 |
| 24 | CCV | | 2230914-024 | Perchlorate6850c.lcm | 1x | 230380 | 9/14/2023 13:07 |

**ALS Group USA, Corp. dba ALS Environmental**

QA/QC Report

| | | | |
|---|---|---|---|
| **Client:** | ALS Environmental - US | **Service Request:** | E2300826 |
| **Project:** | HS23090716 | **Date Analyzed:** | 9/14/23 10:44 |

**Internal Standard Area and RT Summary**

**Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry**

| | | | |
|---|---|---|---|
| **File ID:** | I:\LCMS01\DATA\20230914\2230914-004 | **Lab Code:** | EQ2300448-01 |
| **Instrument ID:** | E-LCMS-01 | **Analysis Lot:** | 817192 |
| **Analytical Method:** | 6850 | **Signal ID:** | 1 |

| | | Sodium Perchlorate-18O4 | |
|---|---|---|---|
| | | **Area** | **RT** |
| | **ICAL Average ==>** | 297,129 | 3.57 |
| | **Upper Limit ==>** | 445,694 | 5.57 |
| | **Lower Limit ==>** | 148,565 | 1.57 |
| ***Associated Analyses*** | | | |
| Continuing Calibration Verification | EQ2300448-01 | 276,448 | 3.57 |
| Method Blank | EQ2300447-01 | 329,992 | 3.57 |
| Duplicate Lab Control Sample | EQ2300447-03 | 339,139 | 3.57 |
| Lab Control Sample | EQ2300447-02 | 347,265 | 3.58 |
| LH18/24-SP650_091223_BIX | E2300826-001 | 297,992 | 3.57 |
| LH18/24-SP650_091223_AIX | E2300826-002 | 397,675 | 3.58 |

**Results flagged with an asterisk (*) indicate values outside control criteria.**

**ALS Group USA, Corp. dba ALS Environmental**

QA/QC Report

| | | | |
|---|---|---|---|
| **Client:** | ALS Environmental - US | **Service Request:** | E2300826 |
| **Project:** | HS23090716 | **Date Analyzed:** | 9/14/23 12:11 |

**Internal Standard Area and RT Summary**

**Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry**

| | | | |
|---|---|---|---|
| **File ID:** | I:\LCMS01\DATA\20230914\2230914-015 | **Lab Code:** | EQ2300448-02 |
| **Instrument ID:** | E-LCMS-01 | **Analysis Lot:** | 817192 |
| **Analytical Method:** | 6850 | **Signal ID:** | 1 |

| | | Sodium Perchlorate-18O4 | |
|---|---|---|---|
| | | **Area** | **RT** |
| | **ICAL Average ==>** | 297,129 | 3.57 |
| | **Upper Limit ==>** | 445,694 | 5.57 |
| | **Lower Limit ==>** | 148,565 | 1.57 |
| ***Associated Analyses*** | | | |
| Continuing Calibration Verification | EQ2300448-02 | 292,197 | 3.57 |

**Results flagged with an asterisk (*) indicate values outside control criteria.**

**ALS Group USA, Corp. dba ALS Environmental**

QA/QC Report

| | | | |
|---|---|---|---|
| **Client:** | ALS Environmental - US | **Service Request:** | E2300826 |
| **Project:** | HS23090716 | **Date Analyzed:** | 9/14/23 13:07 |

**Internal Standard Area and RT Summary**

**Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry**

| | | | |
|---|---|---|---|
| **File ID:** | I:\LCMS01\DATA\20230914\2230914-024 | **Lab Code:** | EQ2300448-03 |
| **Instrument ID:** | E-LCMS-01 | **Analysis Lot:** | 817192 |
| **Analytical Method:** | 6850 | **Signal ID:** | 1 |

| | | Sodium Perchlorate-18O4 | |
|---|---|---|---|
| | | **Area** | **RT** |
| | **ICAL Average ==>** | 297,129 | 3.57 |
| | **Upper Limit ==>** | 445,694 | 5.57 |
| | **Lower Limit ==>** | 148,565 | 1.57 |
| ***Associated Analyses*** | | | |
| Continuing Calibration Verification | EQ2300448-03 | 287,057 | 3.57 |

**Results flagged with an asterisk (*) indicate values outside control criteria.**

**ALS Group USA, Corp. dba ALS Environmental**

QA/QC Report

**Client:** ALS Environmental - US
**Project:** HS23090716

**Service Request:** E2300826
**Date Analyzed:** 9/14/23

## Continuing Calibration Verification Summary
## Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

**Analytical Method:** 6850
**File ID:** I:\LCMS01\DATA\20230914\2230914-004

**Calibration Date:** 8/2/23
**Calibration ID:** EC2300012
**Analysis Lot:** 817192
**Units:** ng/mL

| Analyte Name | Expected | Result | Average RF | CCV RF | %D | %Drift | Criteria | Curve Fit |
|---|---|---|---|---|---|---|---|---|
| Perchlorate | 10.0 | 9.76 | 0.1475 | 0.1440 | -2.4 | NA | ± 15 % | Average RF |

**ALS Group USA, Corp. dba ALS Environmental**

QA/QC Report

**Client:** ALS Environmental - US
**Project:** HS23090716

**Service Request:** E2300826
**Date Analyzed:** 9/14/23

## Continuing Calibration Verification Summary
## Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

**Analytical Method:** 6850
**File ID:** I:\LCMS01\DATA\20230914\2230914-015

**Calibration Date:** 8/2/23
**Calibration ID:** EC2300012
**Analysis Lot:** 817192
**Units:** ng/mL

| Analyte Name | Expected | Result | Average RF | CCV RF | %D | %Drift | Criteria | Curve Fit |
|---|---|---|---|---|---|---|---|---|
| Perchlorate | 10.0 | 9.88 | 0.1475 | 0.1457 | -1.2 | NA | ± 15 % | Average RF |

**ALS Group USA, Corp. dba ALS Environmental**

QA/QC Report

**Client:** ALS Environmental - US
**Project:** HS23090716

**Service Request:** E2300826
**Date Analyzed:** 9/14/23

## Continuing Calibration Verification Summary
## Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

**Analytical Method:** 6850
**File ID:** I:\LCMS01\DATA\20230914\2230914-024

**Calibration Date:** 8/2/23
**Calibration ID:** EC2300012
**Analysis Lot:** 817192
**Units:** ng/mL

| Analyte Name | Expected | Result | Average RF | CCV RF | %D | %Drift | Criteria | Curve Fit |
|---|---|---|---|---|---|---|---|---|
| Perchlorate | 10.0 | 9.99 | 0.1475 | 0.1473 | -0.1 | NA | ± 15 % | Average RF |

# Insight Report

Printed at 9/14/2023 1:26:53 PM

Method File: I:\LCMS01\DATA\20230914\20230914.lcm
Project File: I:\LCMS01\DATA\20230914\20230914.damlp

## IB

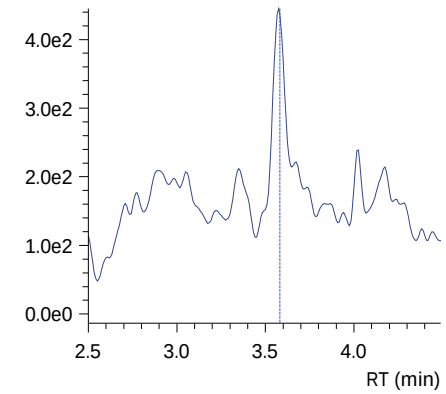
Sample ID: IB
Date Acquired: 9/14/2023 9:58:39 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230914\2230914-001.lcd
Vial: 4 | Inj. Volume: 10.0000uL | Tray: 0

| Name | Mode ID | Found RT | Area | ISTD Area | Conc. | Unit | Ref 1 m/z | Ref 1 Actual Ratio | Comment 1 |
|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | ND(W/B) | ---- | ---- | 445314 | ---- | ng/mL | 101.00 >85.00 | 0.00 | 19.12-35.51 |
| Sodium Perchlorate-18O4_IS | Auto | 3.575 | 445314 | 445314 | 1.0000 | ng/mL | ---- | ---- | |

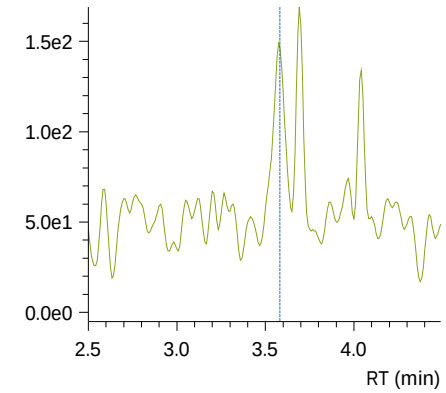
### Perchlorate

Conc ----
R#1 0.00 (27.31)

Q 99.00>83.00 (-) 4.45e2



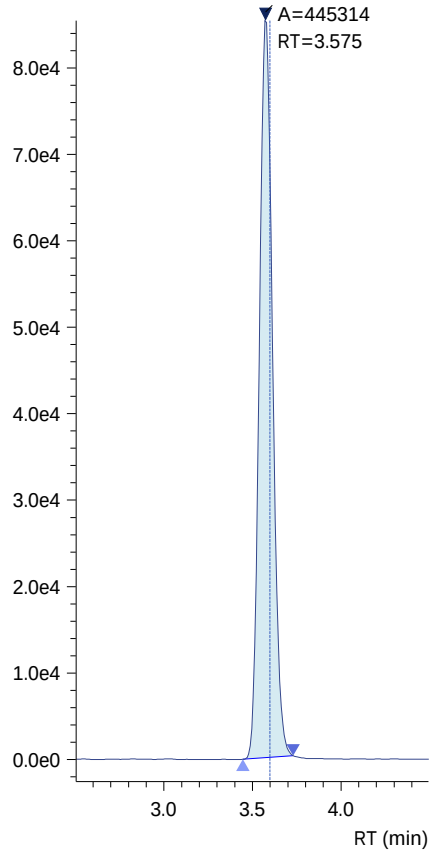

R1 101.00>85.00 (-) 1.69e2




### Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 8.55e4



# Insight Report

Printed at 9/14/2023 1:26:53 PM

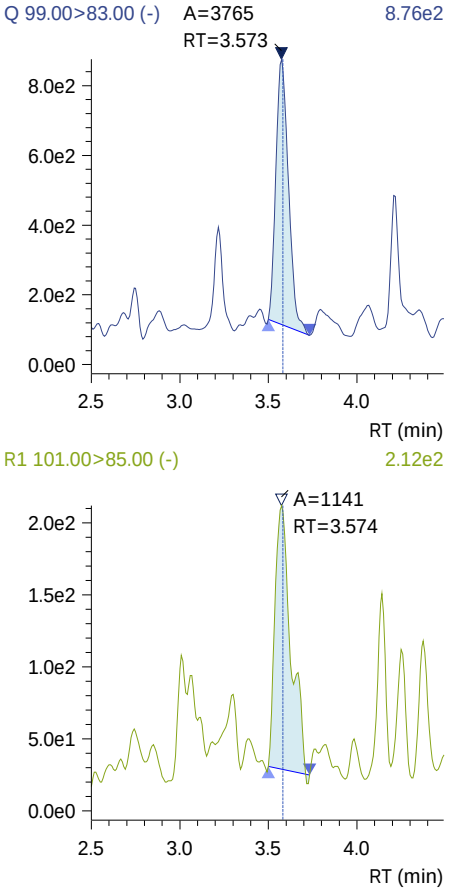
## LODV

Sample ID: LODV
Date Acquired: 9/14/2023 10:04:17 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230914\2230914-002.lcd
Vial: 12 | Inj. Volume: 10.0000uL | Tray: 1

| Name | Mode ID | Found RT | Area | ISTD Area | Conc. | Unit | Ref 1 m/z | Ref 1 Actual Ratio | Comment 1 |
|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | Auto | 3.573 | 3765 | 401553 | 0.0636 | ng/mL | 101.00 >85.00 | 30.30 | 19.12-35.51 |
| Sodium Perchlorate-18O4 _IS | Auto | 3.574 | 4015 53 | 401553 | 1.0000 | ng/mL | ---- | ---- | |

### Perchlorate

Conc 0.0636
R#1 30.30 (27.31)

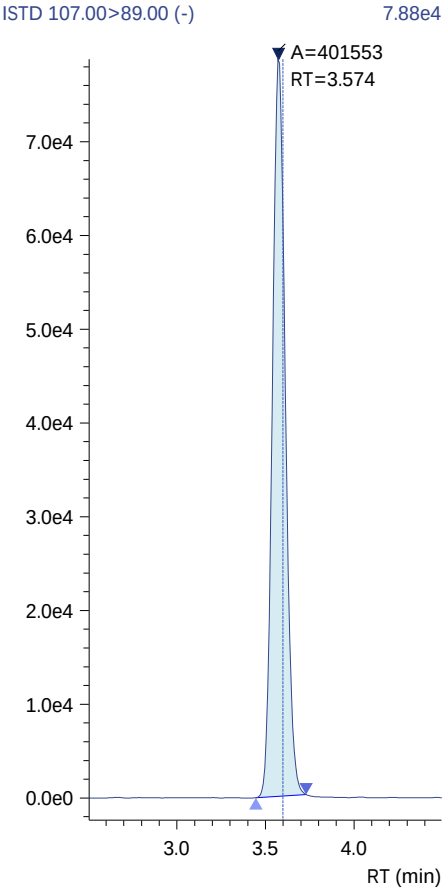






### Sodium Perchlorate-18O4_IS

Conc 1.0000



# Insight Report

Printed at 9/14/2023 1:26:53 PM

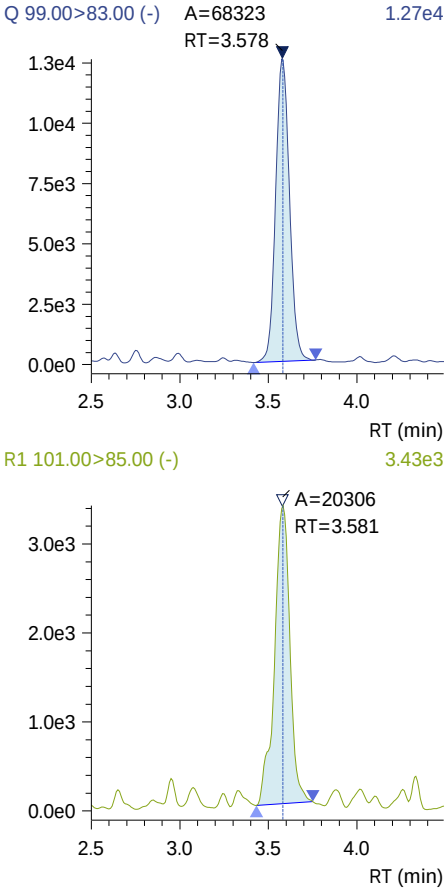
## ICS

Sample ID: ICS
Date Acquired: 9/14/2023 10:39:02 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230914\2230914-003.lcd
Vial: 2 | Inj. Volume: 10.0000uL | Tray: 0

| Name | Mode ID | Found RT | Area | ISTD Area | Conc. | Unit | Ref 1 m/z | Ref 1 Actual Ratio | Comment 1 |
|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | Auto | 3.578 | 68323 | 419340 | 1.1049 | ng/mL | 101.00 >85.00 | 29.72 | 19.12-35.51 |
| Sodium Perchlorate-18O4 _IS | Auto | 3.575 | 4193 40 | 419340 | 1.0000 | ng/mL | ---- | ---- | |

### Perchlorate

Conc 1.1049
R#1 29.72 (27.31)

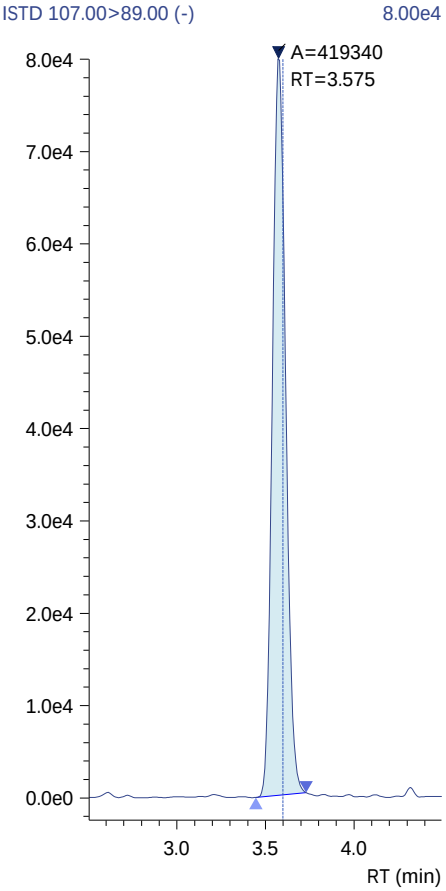






### Sodium Perchlorate-18O4_IS

Conc 1.0000



# Insight Report

Printed at 9/14/2023 1:26:53 PM

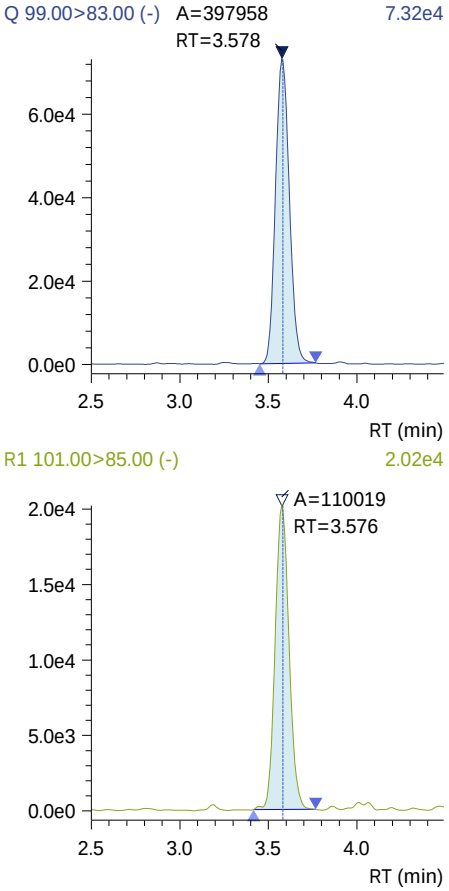
## CCV

Sample ID: CCV
Date Acquired: 9/14/2023 10:44:37 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230914\2230914-004.lcd
Vial: 7 | Inj. Volume: 10.0000uL | Tray: 1

| Name | Mode ID | Found RT | Area | ISTD Area | Conc. | Unit | Ref 1 m/z | Ref 1 Actual Ratio | Comment 1 |
|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | Auto | 3.578 | 397958 | 276448 | 9.7621 | ng/mL | 101.00 >85.00 | 27.65 | 19.12-35.51 |
| Sodium Perchlorate-18O4_IS | Auto | 3.574 | 276448 | 276448 | 1.0000 | ng/mL | ---- | ---- | |

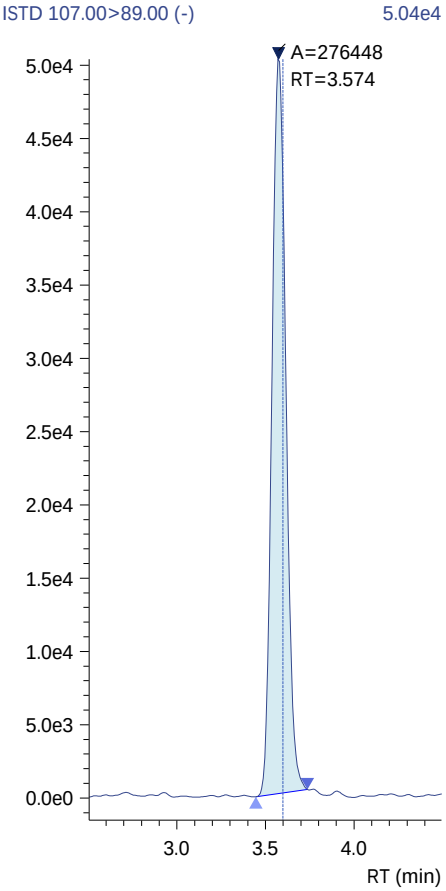
### Perchlorate

Conc 9.7621
R#1 27.65 (27.31)




### Sodium Perchlorate-18O4_IS

Conc 1.0000



# Insight Report

Printed at 9/14/2023 1:26:53 PM

## EQ2300447-01

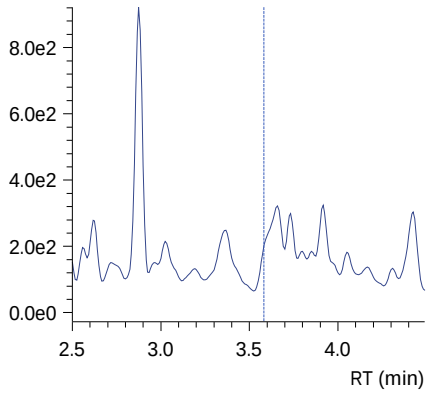
Sample ID: EQ2300447-01
Date Acquired: 9/14/2023 10:51:06 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230914\2230914-005.lcd
Vial: 22 | Inj. Volume: 10.0000uL | Tray: 3

| Name | Mode ID | Found RT | Area | ISTD Area | Conc. | Unit | Ref 1 m/z | Ref 1 Actual Ratio | Comment 1 |
|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | ND(W/B) | ---- | ---- | 329992 | ---- | ng/mL | 101.00 >85.00 | 0.00 | 19.12-35.51 |
| Sodium Perchlorate-18O4_IS | Auto | 3.573 | 329992 | 329992 | 1.0000 | ng/mL | ---- | ---- | |

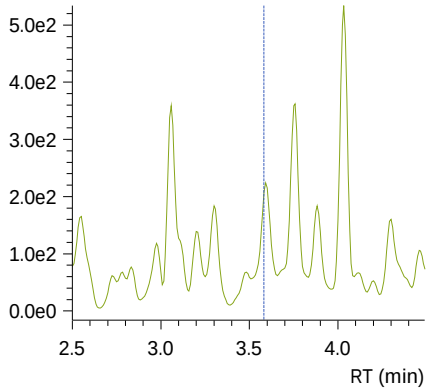
### Perchlorate

Conc ----
R#1 0.00 (27.31)

Q 99.00>83.00 (-) 9.22e2



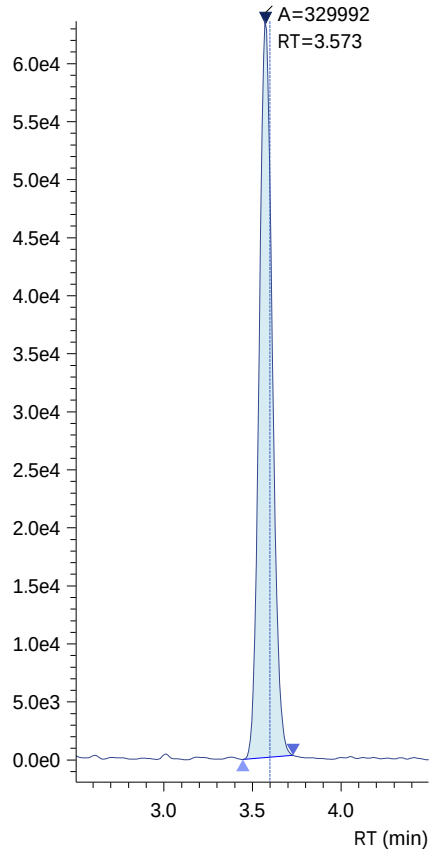

R1 101.00>85.00 (-) 5.34e2




### Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 6.37e4



# Insight Report

Printed at 9/14/2023 1:26:53 PM

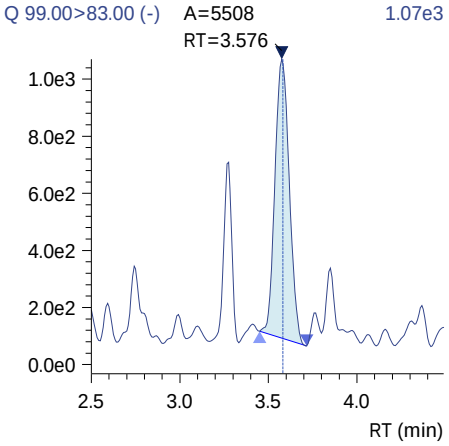
## EQ2300447-02

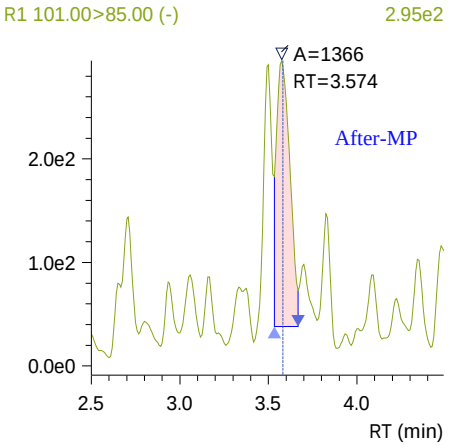
Sample ID: EQ2300447-02
Date Acquired: 9/14/2023 11:26:00 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230914\2230914-006.lcd
Vial: 23 | Inj. Volume: 10.0000uL | Tray: 3

| Name | Mode ID | Found RT | Area | ISTD Area | Conc. | Unit | Ref 1 m/z | Ref 1 Actual Ratio | Comment 1 |
|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | MI R1 | 3.576 | 5508 | 347265 | 0.1076 | ng/mL | 101.00 >85.00 | 24.80 | 19.12-35.51 |
| Sodium Perchlorate-18O4 _IS | Auto | 3.575 | 3472 65 | 347265 | 1.0000 | ng/mL | ---- | ---- | |

### Perchlorate

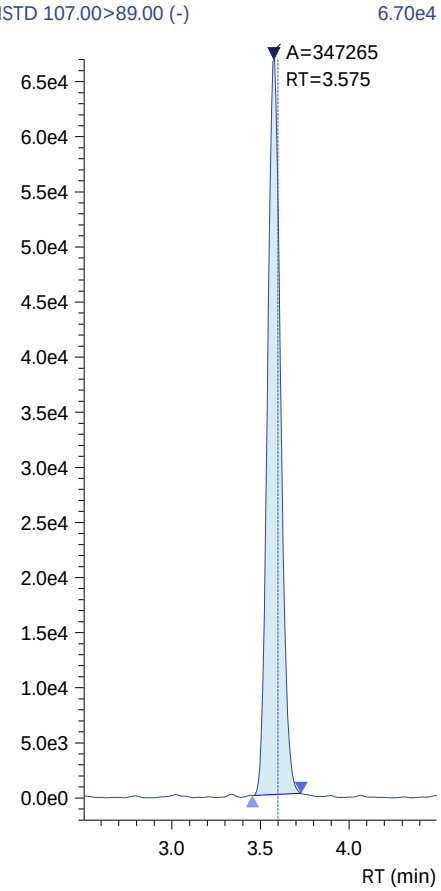
Conc 0.1076
R#1 24.80 (27.31)




### Sodium Perchlorate-18O4_IS

Conc 1.0000



# Insight Report

Printed at 9/14/2023 1:27:41 PM

Method File: I:\LCMS01\DATA\20230914\20230914.lcm
Project File: I:\LCMS01\DATA\20230914\20230914.damlp

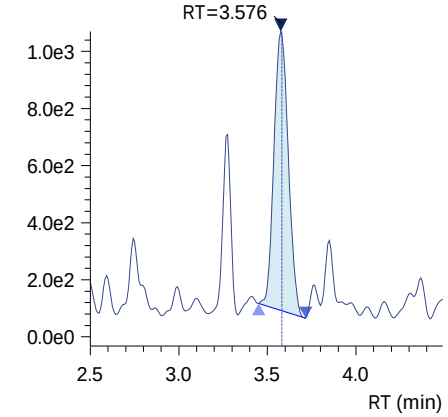
## EQ2300447-02

Sample ID: EQ2300447-02
Date Acquired: 9/14/2023 11:26:00 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230914\2230914-006.lcd
Vial: 23 | Inj. Volume: 10.0000uL | Tray: 3

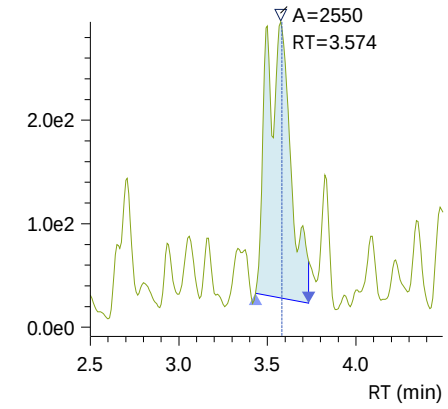
### Perchlorate

Conc 0.1076
R#1 46.30 (27.31)

Q 99.00>83.00 (-) A=5508 1.07e3



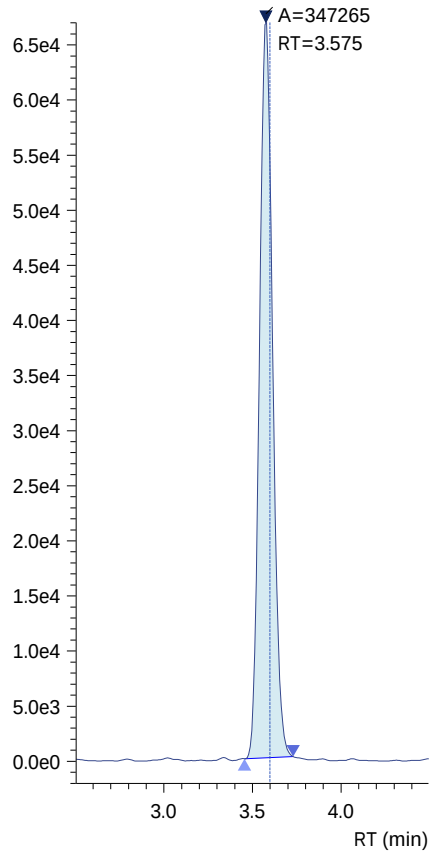

R1 101.00>85.00 (-) 2.95e2




### Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 6.70e4



# Insight Report

Printed at 9/14/2023 1:26:53 PM

## EQ2300447-03

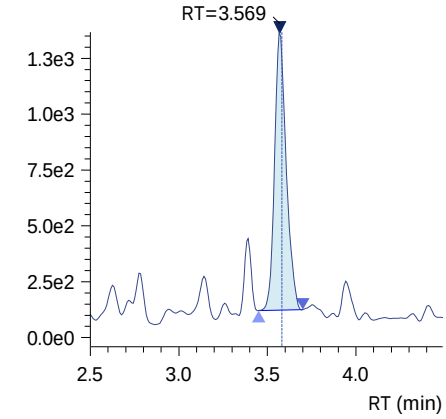
Sample ID: EQ2300447-03
Date Acquired: 9/14/2023 11:02:07 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230914\2230914-007.lcd
Vial: 24 | Inj. Volume: 10.0000uL | Tray: 3

| Name | Mode ID | Found RT | Area | ISTD Area | Conc. | Unit | Ref 1 m/z | Ref 1 Actual Ratio | Comment 1 |
|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | Auto | 3.569 | 5690 | 339139 | 0.1138 | ng/mL | 101.00 >85.00 | 28.86 | 19.12-35.51 |
| Sodium Perchlorate-18O4 _IS | Auto | 3.574 | 3391 39 | 339139 | 1.0000 | ng/mL | ---- | ---- | |

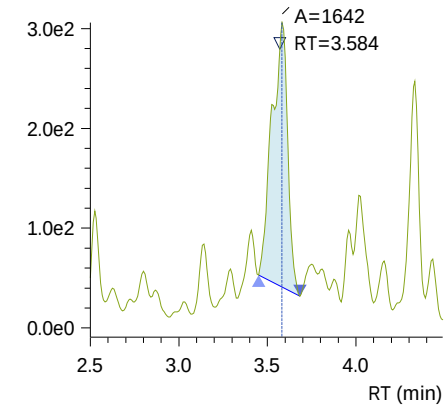
### Perchlorate

Conc 0.1138
R#1 28.86 (27.31)

Q 99.00>83.00 (-) A=5690 1.37e3



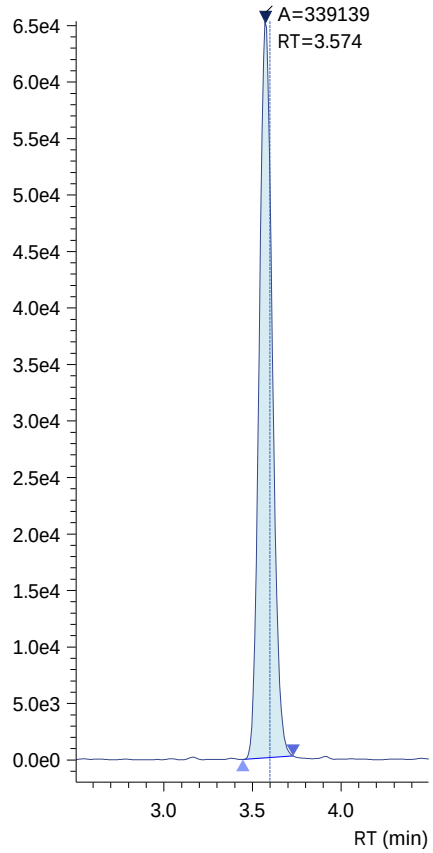

R1 101.00>85.00 (-) 3.06e2




### Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 6.54e4



# Insight Report

Printed at 9/14/2023 1:26:53 PM

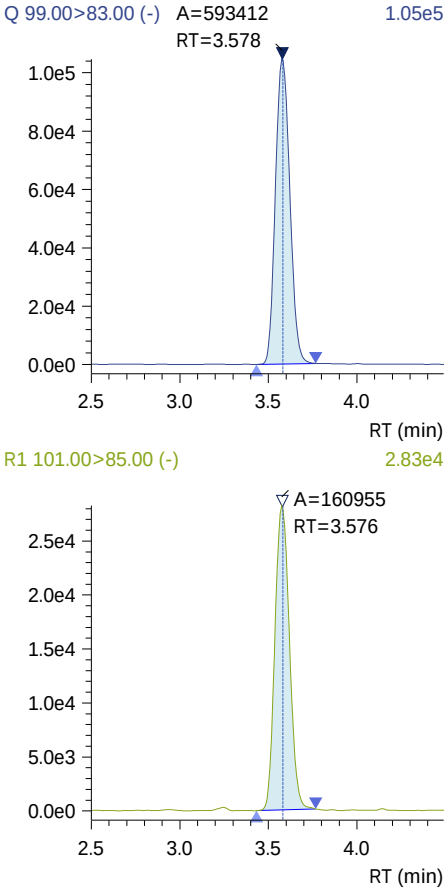
## E2300826-001x5

Sample ID: E2300826-001
Date Acquired: 9/14/2023 11:32:40 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230914\2230914-008.lcd
Vial: 25 | Inj. Volume: 10.0000uL | Tray: 3

| Name | Mode ID | Found RT | Area | ISTD Area | Conc. | Unit | Ref 1 m/z | Ref 1 Actual Ratio | Comment 1 |
|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | Auto | 3.578 | 5934 12 | 297992 | 13.50 43 | ng/mL | 101.00 >85.00 | 27.12 | 19.12-35.51 |
| Sodium Perchlorate-18O4 _IS | Auto | 3.574 | 2979 92 | 297992 | 1.0000 | ng/mL | ---- | ---- | |

### Perchlorate

Conc 13.5043
R#1 27.12 (27.31)

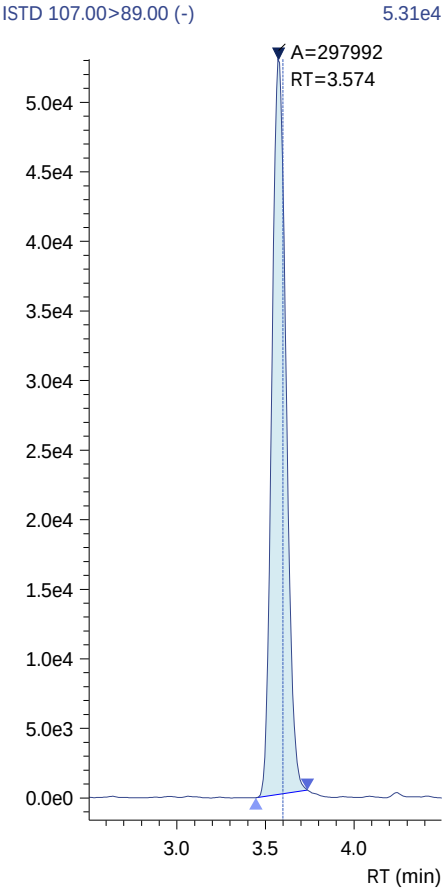






### Sodium Perchlorate-18O4_IS

Conc 1.0000



# Insight Report

Printed at 9/14/2023 1:26:53 PM

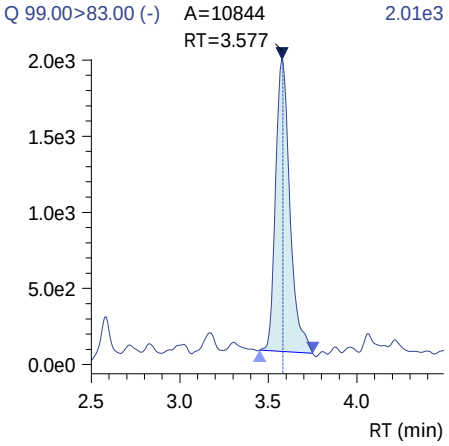
## E2300826-002

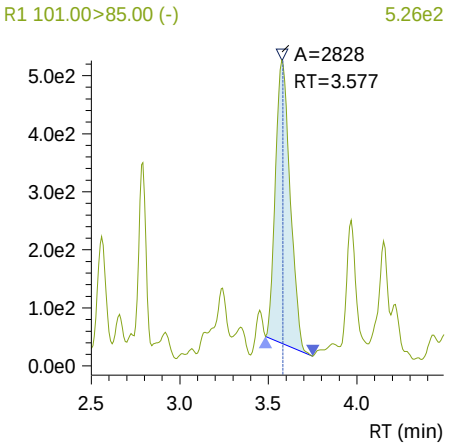
Sample ID: E2300826-002
Date Acquired: 9/14/2023 11:38:14 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230914\2230914-009.lcd
Vial: 26 | Inj. Volume: 10.0000uL | Tray: 3

| Name | Mode ID | Found RT | Area | ISTD Area | Conc. | Unit | Ref 1 m/z | Ref 1 Actual Ratio | Comment 1 |
|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | Auto | 3.577 | 10844 | 397675 | 0.1849 | ng/mL | 101.00 >85.00 | 26.08 | 19.12-35.51 |
| Sodium Perchlorate-18O4 _IS | Auto | 3.575 | 3976 75 | 397675 | 1.0000 | ng/mL | ---- | ---- | |

### Perchlorate

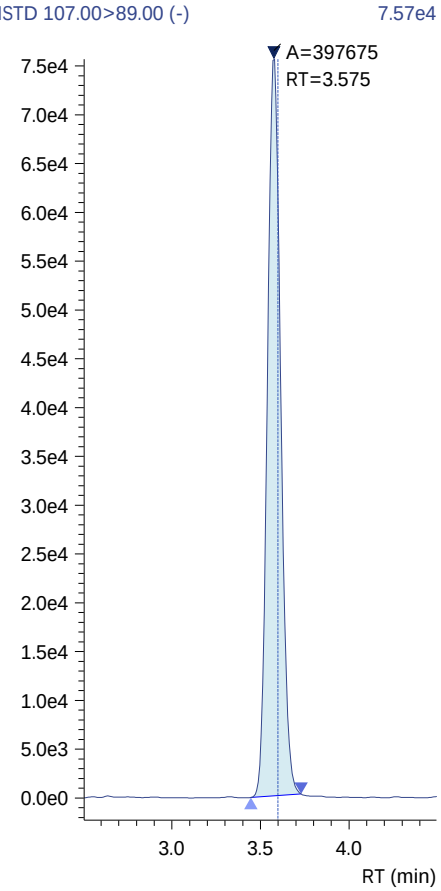
Conc 0.1849
R#1 26.08 (27.31)




### Sodium Perchlorate-18O4_IS

Conc 1.0000



# Insight Report

Printed at 9/14/2023 1:26:53 PM

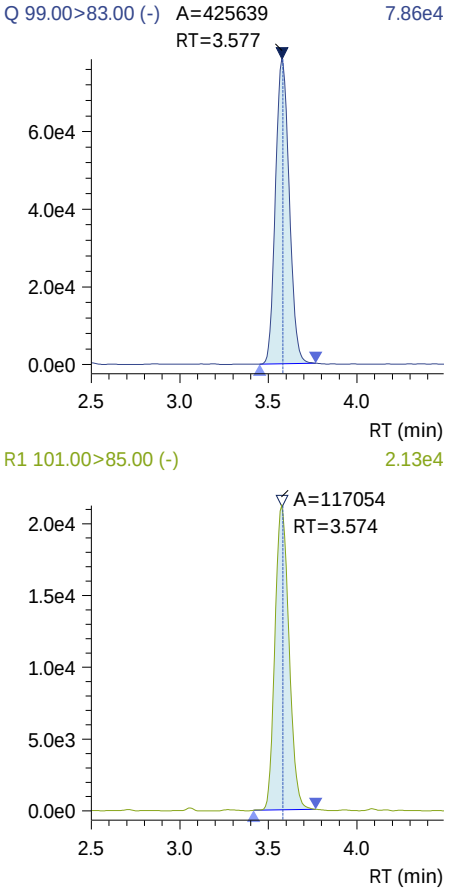
## CCV

Sample ID: CCV
Date Acquired: 9/14/2023 12:11:30 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230914\2230914-015.lcd
Vial: 7 | Inj. Volume: 10.0000uL | Tray: 1

| Name | Mode ID | Found RT | Area | ISTD Area | Conc. | Unit | Ref 1 m/z | Ref 1 Actual Ratio | Comment 1 |
|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | Auto | 3.577 | 425639 | 292197 | 9.8784 | ng/mL | 101.00 >85.00 | 27.50 | 19.12-35.51 |
| Sodium Perchlorate-18O4 _IS | Auto | 3.573 | 292197 | 292197 | 1.0000 | ng/mL | ---- | ---- | |

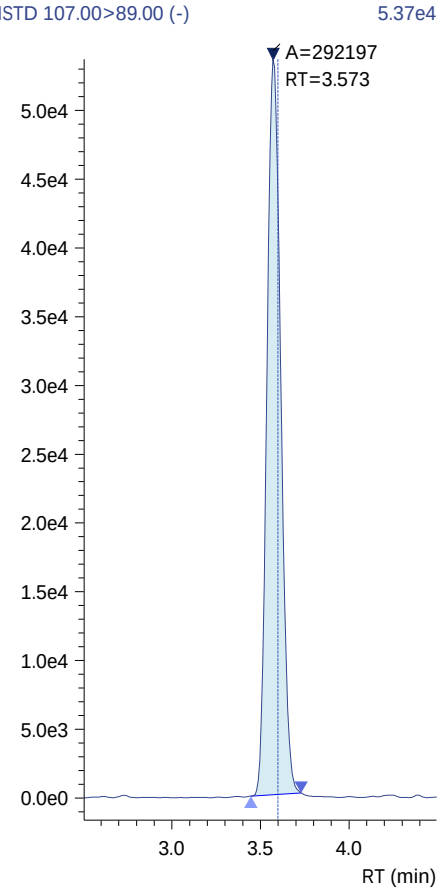
### Perchlorate

Conc 9.8784
R#1 27.50 (27.31)




### Sodium Perchlorate-18O4_IS

Conc 1.0000



# HS23091132 GROUNDWATER TREATMENT PLANT WEEKLY SAMPLES Cover Page

ALS WO# HS23091132

ALS Environmental
ALS Group USA, Corp
10450 Stancliff Road, Suite 210
Houston, TX 77099
**T :** +1 281 530 5656
**F :** +1 281 530 5887
**www.alsglobal.com**

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Chromatograms and Selected Ion Monitoring

10450 Stancliff Rd. Suite 210
Houston, TX 77099
T: +1 281 530 5656
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alsglobal.com

# WorkOrder: HS23091132

## GROUNDWATER TREATMENT PLANT WEEKLY SAMPLES

**Bhate Environmental Associates, Inc.**

Marcia Olive
445 Union Blvd Ste 129
Lakewood CO 80228

**27-Sep-2023**

# HS23091132 GROUNDWATER TREATMENT PLANT WEEKLY SAMPLES Final

ALS WO# HS23091132

10450 Stancliff Rd. Suite 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887

September 26, 2023

Marcia Olive
Bhate Environmental Associates, Inc.
445 Union Blvd Ste 129
Lakewood, CO 80228

Work Order: **HS23091132**

Laboratory Results for: **GROUNDWATER TREATMENT PLANT WEEKLY SAMPLES**

Dear Marcia Olive,

ALS Environmental received 3 sample(s) on Sep 20, 2023 for the analysis presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

**Generated By: JUMOKE.LAWAL**
James Guin

**ALS Houston, US** Date: 26-Sep-23

**Client:** Bhate Environmental Associates, Inc.
**Project:** GROUNDWATER TREATMENT PLANT WEEKLY SAMPLES
**Work Order:** HS23091132

## SAMPLE SUMMARY

| Lab Samp ID | Client Sample ID | Matrix | TagNo | Collection Date | Date Received | Hold |
|---|---|---|---|---|---|---|
| HS23091132-01 | LH18/24-SP650_091923 | Water | | 19-Sep-2023 13:00 | 20-Sep-2023 09:30 | ☐ |
| HS23091132-02 | LH18/24-SP650_091923_BIX | Water | | 19-Sep-2023 13:00 | 20-Sep-2023 09:30 | ☐ |
| HS23091132-03 | LH18/24-SP650_091923_AIX | Water | | 19-Sep-2023 13:00 | 20-Sep-2023 09:30 | ☐ |

**ALS Houston, US** Date: 26-Sep-23

**Client:** Bhate Environmental Associates, Inc. **CASE NARRATIVE**
**Project:** GROUNDWATER TREATMENT PLANT WEEKLY SAMPLES
**Work Order:** HS23091132

## Work Order Comments

- The analysis for Perchlorate was subcontracted to ALS Houston High-Res Lab. Final report attached

## WetChemistry by Method E350.3

### Batch ID: R447370

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

## WetChemistry by Method E415.1

### Batch ID: R447273

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

## WetChemistry by Method E365.3

### Batch ID: R446901

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

**ALS Houston, US** Date: 26-Sep-23

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**

Project: GROUNDWATER TREATMENT PLANT WEEKLY SAMPLES WorkOrder:HS23091132

Sample ID: LH18/24-SP650_091923 Lab ID:HS23091132-01

Collection Date: 19-Sep-2023 13:00 Matrix:Water

| ANALYSES | RESULT | QUAL | DL | LOD | LOQ | UNITS | DILUTION FACTOR | DATE ANALYZED |
|---|---|---|---|---|---|---|---|---|
| **AMMONIA AS N BY E350.3(ISE)** | | **Method:E350.3** | | | | | | Analyst: AB |
| **Nitrogen, Ammonia (As N)** | **24** | a | **0.10** | **0.20** | **0.20** | **mg/L** | 1 | 26-Sep-2023 15:32 |
| **ORTHO PHOSPHATE (PO4) AS P BY E365.3-1978** | | **Method:E365.3** | | | | | | Analyst: AB |
| **Phosphorus, Total Orthophosphate (As P)** | **4.80** | a | **0.100** | **0.250** | **0.250** | **mg/L** | 10 | 20-Sep-2023 16:53 |
| **TOTAL ORGANIC CARBON BY E415.1** | | **Method:E415.1** | | | | | | Analyst: DW |
| **Organic Carbon, Total** | **2.71** | a | **0.500** | **1.00** | **1.00** | **mg/L** | 1 | 25-Sep-2023 11:31 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

**ALS Houston, US** Date: 26-Sep-23

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**

Project: GROUNDWATER TREATMENT PLANT WEEKLY SAMPLES WorkOrder:HS23091132

Sample ID: LH18/24-SP650_091923_BIX Lab ID:HS23091132-02

Collection Date: 19-Sep-2023 13:00 Matrix:Water

| ANALYSES | RESULT | QUAL | DL | LOD | LOQ | UNITS | DILUTION FACTOR | DATE ANALYZED |
|---|---|---|---|---|---|---|---|---|
| **SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)** | | **Method:NA** | | | | | | Analyst: SUB |
| Subcontract Analysis | See Attached | | 0 | 0 | | NA | 1 | 21-Sep-2023 15:40 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

**ALS Houston, US** Date: 26-Sep-23

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**

Project: GROUNDWATER TREATMENT PLANT WEEKLY SAMPLES WorkOrder:HS23091132

Sample ID: LH18/24-SP650_091923_AIX Lab ID:HS23091132-03

Collection Date: 19-Sep-2023 13:00 Matrix:Water

| ANALYSES | RESULT | QUAL | DL | LOD | LOQ | UNITS | DILUTION FACTOR | DATE ANALYZED |
|---|---|---|---|---|---|---|---|---|
| **SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)** | | **Method:NA** | | | | | | Analyst: SUB |
| Subcontract Analysis | See Attached | | 0 | 0 | | NA | 1 | 21-Sep-2023 15:40 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

**Client:** Bhate Environmental Associates, Inc.
**Project:** GROUNDWATER TREATMENT PLANT WEEKLY SAMPLES
**WorkOrder:** HS23091132

## DATES REPORT

| Sample ID | Client Samp ID | Collection Date | Leachate Date | Prep Date | Analysis Date | DF |
|---|---|---|---|---|---|---|
| **Batch ID:** R446901 ( 0 ) | **Test Name :** ORTHO PHOSPHATE (PO4) AS P BY E365.3-1978 | | | | **Matrix:** Water | |
| HS23091132-01 | LH18/24-SP650_091923 | 19 Sep 2023 13:00 | | | 20 Sep 2023 16:53 | 10 |
| **Batch ID:** R447011 ( 0 ) | **Test Name :** SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850) | | | | **Matrix:** Water | |
| HS23091132-02 | LH18/24-SP650_091923_BIX | 19 Sep 2023 13:00 | | | 21 Sep 2023 15:40 | 1 |
| HS23091132-03 | LH18/24-SP650_091923_AIX | 19 Sep 2023 13:00 | | | 21 Sep 2023 15:40 | 1 |
| **Batch ID:** R447273 ( 0 ) | **Test Name :** TOTAL ORGANIC CARBON BY E415.1 | | | | **Matrix:** Water | |
| HS23091132-01 | LH18/24-SP650_091923 | 19 Sep 2023 13:00 | | | 25 Sep 2023 11:31 | 1 |
| **Batch ID:** R447370 ( 0 ) | **Test Name :** AMMONIA AS N BY E350.3(ISE) | | | | **Matrix:** Water | |
| HS23091132-01 | LH18/24-SP650_091923 | 19 Sep 2023 13:00 | | | 26 Sep 2023 15:32 | 1 |

**ALS Houston, US** Date: 26-Sep-23

**Client:** Bhate Environmental Associates, Inc.
**Project:** GROUNDWATER TREATMENT PLANT WEEKLY SAMPLES
**WorkOrder:** HS23091132

**QC BATCH REPORT**

**Batch ID:** R446901 ( 0 ) **Instrument:** UV-2450 **Method:** ORTHO PHOSPHATE (PO4) AS P BY E365.3-1978

**MBLK** Sample ID: **MBLK-R446901** Units: **mg/L** Analysis Date: **20-Sep-2023 16:53**
Client ID: Run ID: **UV-2450_446901** SeqNo: **7555660** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Phosphorus, Total Orthophosphate (As P) | 0.0250 | 0.0250 | | | | | | | | U |

**LCS** Sample ID: **LCS-R446901** Units: **mg/L** Analysis Date: **20-Sep-2023 16:53**
Client ID: Run ID: **UV-2450_446901** SeqNo: **7555659** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Phosphorus, Total Orthophosphate (As P) | 0.277 | 0.0250 | 0.25 | 0 | 111 | 85 - 115 | | | | |

**MS** Sample ID: **HS23091132-01MS** Units: **mg/L** Analysis Date: **20-Sep-2023 16:53**
Client ID: **LH18/24-SP650_091923** Run ID: **UV-2450_446901** SeqNo: **7555662** PrepDate: DF: **10**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Phosphorus, Total Orthophosphate (As P) | 7.13 | 0.250 | 2.5 | 4.8 | 93.2 | 80 - 120 | | | | |

**MSD** Sample ID: **HS23091132-01MSD** Units: **mg/L** Analysis Date: **20-Sep-2023 16:53**
Client ID: **LH18/24-SP650_091923** Run ID: **UV-2450_446901** SeqNo: **7555661** PrepDate: DF: **10**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Phosphorus, Total Orthophosphate (As P) | 7.43 | 0.250 | 2.5 | 4.8 | 105 | 80 - 120 | 7.13 | 4.12 | 20 | |

**The following samples were analyzed in this batch:** HS23091132-01

**ALS Houston, US** Date: 26-Sep-23

**Client:** Bhate Environmental Associates, Inc.
**Project:** GROUNDWATER TREATMENT PLANT WEEKLY SAMPLES
**WorkOrder:** HS23091132

**QC BATCH REPORT**

**Batch ID: R447273 ( 0 )** **Instrument: TOC_04** **Method: TOTAL ORGANIC CARBON BY E415.1**

**MBLK** Sample ID: **MBLK-09252023** Units: **mg/L** Analysis Date: **25-Sep-2023 10:49**
Client ID: Run ID: **TOC_04_447273** SeqNo: **7564122** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Organic Carbon, Total | 1.00 | 1.00 | | | | | | | | U |

**LCS** Sample ID: **LCS-09252023** Units: **mg/L** Analysis Date: **25-Sep-2023 11:03**
Client ID: Run ID: **TOC_04_447273** SeqNo: **7564123** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Organic Carbon, Total | 9.622 | 1.00 | 10 | 0 | 96.2 | 85 - 115 | | | | |

**LCSD** Sample ID: **LCSD-09252023** Units: **mg/L** Analysis Date: **25-Sep-2023 11:17**
Client ID: Run ID: **TOC_04_447273** SeqNo: **7564124** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Organic Carbon, Total | 9.63 | 1.00 | 10 | 0 | 96.3 | 85 - 115 | 9.622 | 0.0831 | 20 | |

**MS** Sample ID: **HS23091296-01MS** Units: **mg/L** Analysis Date: **25-Sep-2023 11:59**
Client ID: Run ID: **TOC_04_447273** SeqNo: **7564127** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Organic Carbon, Total | 14.86 | 1.00 | 10 | 2.967 | 119 | 80 - 120 | | | | |

**The following samples were analyzed in this batch:** HS23091132-01

**ALS Houston, US** Date: 26-Sep-23

**Client:** Bhate Environmental Associates, Inc.
**Project:** GROUNDWATER TREATMENT PLANT WEEKLY SAMPLES
**WorkOrder:** HS23091132

**QC BATCH REPORT**

**Batch ID: R447370 ( 0 )** **Instrument: WetChem_HS** **Method: AMMONIA AS N BY E350.3(ISE)**

**MBLK** Sample ID: **MBLK-R447370** Units: **mg/L** Analysis Date: **26-Sep-2023 15:32**
Client ID: Run ID: **WetChem_HS_447370** SeqNo: **7565692** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Nitrogen, Ammonia (As N) | 0.20 | 0.20 | | | | | | | | U |

**LCS** Sample ID: **LCS-R447370** Units: **mg/L** Analysis Date: **26-Sep-2023 15:32**
Client ID: Run ID: **WetChem_HS_447370** SeqNo: **7565691** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Nitrogen, Ammonia (As N) | 9.311 | 0.20 | 10 | 0 | 93.1 | 80 - 120 | | | | |

**MS** Sample ID: **HS23091030-01MS** Units: **mg/L** Analysis Date: **26-Sep-2023 15:32**
Client ID: Run ID: **WetChem_HS_447370** SeqNo: **7565694** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Nitrogen, Ammonia (As N) | 10.22 | 0.20 | 10 | 1.94 | 82.8 | 80 - 120 | | | | |

**MSD** Sample ID: **HS23091030-01MSD** Units: **mg/L** Analysis Date: **26-Sep-2023 15:32**
Client ID: Run ID: **WetChem_HS_447370** SeqNo: **7565693** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Nitrogen, Ammonia (As N) | 10.3 | 0.20 | 10 | 1.94 | 83.6 | 80 - 120 | 10.22 | 0.75 | 20 | |

**The following samples were analyzed in this batch:** HS23091132-01

**ALS Houston, US** Date: 26-Sep-23

**Client:** Bhate Environmental Associates, Inc.
**Project:** GROUNDWATER TREATMENT PLANT WEEKLY SAMPLES
**WorkOrder:** **HS23091132**

**QUALIFIERS, ACRONYMS, UNITS**

| Qualifier | Description |
|---|---|
| * | Value exceeds Regulatory Limit |
| a | Not accredited |
| B | Analyte detected in the associated Method Blank above the Reporting Limit |
| E | Value above quantitation range |
| H | Analyzed outside of Holding Time |
| J | Analyte detected below quantitation limit |
| M | Manually integrated, see raw data for justification |
| n | Not offered for accreditation |
| ND | Not Detected at the Reporting Limit |
| O | Sample amount is > 4 times amount spiked |
| P | Dual Column results percent difference > 40% |
| R | RPD above laboratory control limit |
| S | Spike Recovery outside laboratory control limits |
| U | Analyzed but not detected above the MDL/SDL |

| Acronym | Description |
|---|---|
| DCS | Detectability Check Study |
| DUP | Method Duplicate |
| LCS | Laboratory Control Sample |
| LCSD | Laboratory Control Sample Duplicate |
| MBLK | Method Blank |
| MDL | Method Detection Limit |
| MQL | Method Quantitation Limit |
| MS | Matrix Spike |
| MSD | Matrix Spike Duplicate |
| PDS | Post Digestion Spike |
| PQL | Practical Quantitaion Limit |
| SD | Serial Dilution |
| SDL | Sample Detection Limit |
| TRRP | Texas Risk Reduction Program |

## CERTIFICATIONS,ACCREDITATIONS & LICENSES

| Agency | Number | Expire Date |
|---|---|---|
| Arkansas | 88-00356 | 27-Mar-2024 |
| California | 2919; 2024 | 30-Apr-2024 |
| Dept of Defense | L23-358 | 31-May-2025 |
| Florida | E87611-38 | 30-Jun-2024 |
| Illinois | 2000322023-11 | 30-Jun-2024 |
| Kansas | E-10352 2023-2024 | 31-Jul-2024 |
| Louisiana | 03087 2023-2024 | 30-Jun-2024 |
| Maryland | 343; 2023-2024 | 30-Jun-2024 |
| North Carolina | 624-2023 | 31-Dec-2023 |
| North Dakota | R-193 2023-2024 | 30-Apr-2024 |
| Texas | T104704231-23-31 | 30-Apr-2024 |
| Utah | TX026932023-14 | 31-Jul-2024 |

**ALS Houston, US** Date: 26-Sep-23

## Sample Receipt Checklist

**Work Order ID:** HS23091132 **Date/Time Received:** 20-Sep-2023 09:30

**Client Name:** Bhate Environmental **Received by:** Corey Grandits

| **Completed By:** | /S/ Corey Grandits | 20-Sep-2023 10:35 | **Reviewed by:** | /S/ James Guin | 22-Sep-2023 12:04 |
|---|---|---|---|---|---|
| | eSignature | Date/Time | | eSignature | Date/Time |

Matrices: W Carrier name: FedEx

| | | | |
|---|---|---|---|
| Shipping container/cooler in good condition? | Yes ☑ | No ☐ | Not Present ☐ |
| Custody seals intact on shipping container/cooler? | Yes ☑ | No ☐ | Not Present ☐ |
| Custody seals intact on sample bottles? | Yes ☐ | No ☐ | Not Present ☑ |
| VOA/TX1005/TX1006 Solids in hermetically sealed vials? | Yes ☐ | No ☐ | Not Present ☑ |
| Chain of custody present? | Yes ☑ | No ☐ | 1 Page(s) |
| Chain of custody signed when relinquished and received? | Yes ☑ | No ☐ | |
| Samplers name present on COC? | Yes ☑ | No ☐ | |
| Chain of custody agrees with sample labels? | Yes ☑ | No ☐ | |
| Samples in proper container/bottle? | Yes ☑ | No ☐ | |
| Sample containers intact? | Yes ☑ | No ☐ | |
| Sufficient sample volume for indicated test? | Yes ☑ | No ☐ | |
| All samples received within holding time? | Yes ☑ | No ☐ | |
| Container/Temp Blank temperature in compliance? | Yes ☑ | No ☐ | |

| | | |
|---|---|---|
| Temperature(s)/Thermometer(s): | 2.4uc/2.3c | IR31 |
| Cooler(s)/Kit(s): | Black | |
| Date/Time sample(s) sent to storage: | 9/20/23 | |

| | | | |
|---|---|---|---|
| Water - VOA vials have zero headspace? | Yes ☑ | No ☐ | No VOA vials submitted ☐ |
| Water - pH acceptable upon receipt? | Yes ☑ | No ☐ | N/A ☐ |
| pH adjusted? | Yes ☐ | No ☑ | N/A ☐ |
| pH adjusted by: | | | |

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

Corrective Action:

# CHAIN OF CUSTODY

Name Of Lab Shipping To: ALS 10450 Stancliff Rd. Suite 210 Houston, TX. 77099 (281) 530-5656 ATTN: James Guin

Page 1 of 1

**Project:** BHATE
LONGHORN ARMY AMMN. PLANT (LHAAP)
GROUNDWATER TREATMENT PLANT (GWTP)
KARNACK, TEXAS

**Project No.** JVPCIBH.0001

**Job:** GROUNDWATER TREATMENT PLANT WEEKLY SAMPLES

**Prepared By:** Scott Beesinger

**P.O. Number**

**HS23091132**

Bhate Environmental Associates, Inc.
GROUNDWATER TREATMENT PLANT WEEKLY S

| Field Sample I.D. | Sample Matrix | Date / Time | MS / MSD | No. OF CONTAINERS | Analyses: AMMONIA-N | TOTAL ORGANIC CARBON | ORTHO-PHOSPHATE | PERCHLORATE | Remarks (Preservatives, etc.) | Lab I.D.# |
|---|---|---|---|---|---|---|---|---|---|---|
| LH18/24-SP650_091923 | Water | 09/19/23 / 13:00 | | 3 | X | X | | | H2SO4 | |
| LH18/24-SP650_091923 | Water | 09/19/23 / 13:00 | | 1 | | | X | | NONE | |
| LH18/24–SP650_091923_BIX | Water | 09/19/23 / 13:00 | | 1 | | | | X | NONE | |
| LH18/24-SP650_091923_AIX | Water | 09/19/23 / 13:00 | | 1 | | | | X | NONE | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

Additional Remarks: **24 HR. TAT on Perchlorate Samples. Standard TAT on all other parameters**

| Relinquished By: | Date | Time | Received By: | Date | Time | Relinquished By: | Date | Time | Received By: | Date | Time |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Scott Beesinger | 09/19/23 | 13:30 | CS | 9.20.23 | 0930 | | | | | | |

**For Lab Use Only**

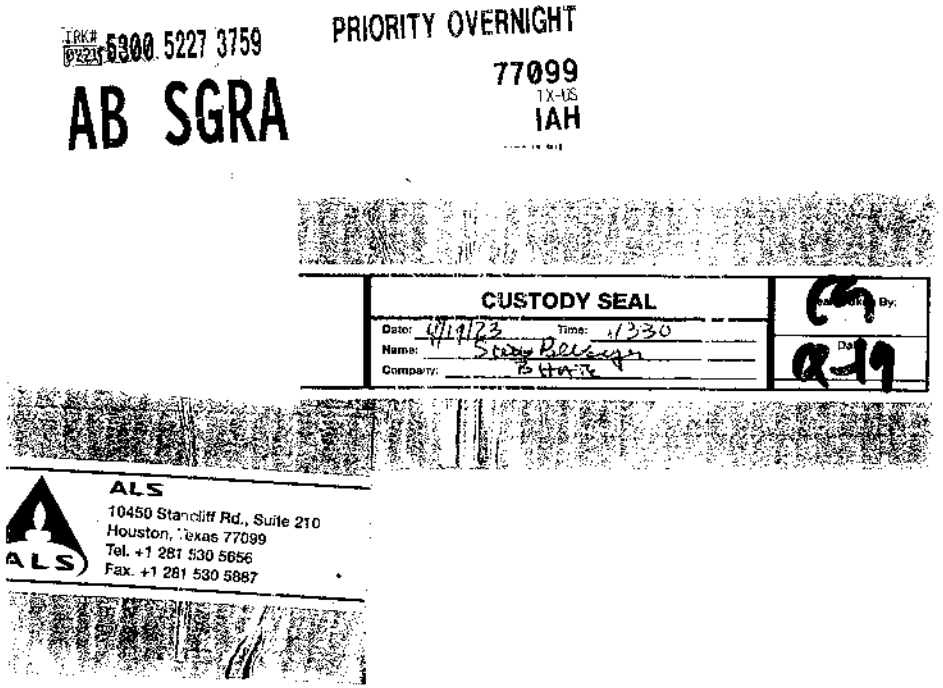
| Received At Lab By: | Date | Time | Airbill No. | Opened By: | Date | Time | Temp of Container | Seal No. | Condition |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |

Remarks:

12.31 CF = 0.1

2.4°

(Word) S:\Forms\Chain of Custody - BiWeekly


TRK# 5300 5227 3759
PRIORITY OVERNIGHT
77099
TX-US
IAH
AB SGRA
CUSTODY SEAL
Date: 4/19/23
Time: 1330
Name:
Company:
By:
ALS
10450 Stancliff Rd., Suite 210
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5887

September 21, 2023 Service Request No:E2300864

James Guin
ALS Environmental - US
10450 Stancliff Rd #210
Houston, TX 77099

**Laboratory Results for: HS23091132**

Dear James,

Enclosed are the results of the sample(s) submitted to our laboratory September 20, 2023
For your reference, these analyses have been assigned our service request number **E2300864.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current TNI standards, where applicable, and except as noted in the laboratory case narrative provided. All results are intended to be considered in their entirety and ALS Environmental is not responsible for use of less than the complete final report. Results apply only to the items submitted to the laboratory, as received for analysis. In accordance with the current TNI Standard, a statement on the estimated uncertainty of measurement of any quantitative analysis will be supplied upon request.

Please contact me if you have any questions. My extension is 2190. You may also contact me via email at hussam.kelany@alsglobal.com.

Respectfully submitted,

**ALS Group USA, Corp. dba ALS Environmental**



Hussam Kelany
Project Manager

ADDRESS 10450 Stancliff Rd., Suite 210, Houston, TX 77099
PHONE +1 281 530 5656 | FAX +1 281 530 5887
ALS Group USA, Corp.
dba ALS Environmental

# Certificate of Analysis

**ALS Environmental - Houston Specialties Laboratory**
10450 Stancliff Rd., Suite 210, Houston TX 77099
Phone (281)530-5656 Fax (281)530-5887
www.alsglobal.com

| | | | |
|---|---|---|---|
| **Client:** | ALS Environmental - US | **Service Request No.:** | E2300864 |
| **Project:** | HS23091132 | **Date Received:** | 09/20/23 |
| **Sample Matrix:** | Water | | |

## CASE NARRATIVE

All analyses were performed in adherence to the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier IV. When appropriate to the method, method blank results have been reported with each analytical test.

### Sample Receipt

Two samples were received for analysis at ALS Environmental in Houston on 09/20/23.

The samples were received in good condition and are consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

### Data Validation Notes and Discussion

**Precision and Accuracy:**

EQ2300460: Laboratory Control Spike/Duplicate Laboratory Control Spike (LCS/DLCS) samples were analyzed and reported in lieu of a MS/MSD for this extraction batch.

*The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and ALS Environmental (ALS) is not responsible for utilization of less than the complete report.*

*Use of ALS group USA Corp dba ALS Environmental (ALS)'s Name. Client shall not use ALS's name or trademark in any marketing or reporting materials, press releases or in any other manner ("Materials") whatsoever and shall not attribute to ALS any test result, tolerance or specification derived from ALS's data ("Attribution") without ALS's prior written consent, which may be withheld by ALS for any reason in its sole discretion. To request ALS's consent, Client shall provide copies of the proposed Materials or Attribution and describe in writing Client's proposed use of such Materials or Attribution. If ALS has not provided written approval of the Materials or Attribution within ten (10) days of receipt from Client, Client's request to use ALS's name or trademark in any Materials or Attribution shall be deemed denied. ALS may, in its discretion, reasonably charge Client for its time in reviewing Materials or Attribution requests. Client acknowledges and agrees that the unauthorized use of ALS's name or trademark may cause ALS to incur irreparable harm for which the recovery of money damages will be inadequate. Accordingly, Client acknowledges and agrees that a violation shall justify preliminary injunctive relief. For questions contact the laboratory.*

**Client:** ALS Environmental - US **Service Request:**E2300864
**Project:** HS23091132

## SAMPLE CROSS-REFERENCE

| SAMPLE # | CLIENT SAMPLE ID | DATE | TIME |
|---|---|---|---|
| E2300864-001 | LH18/24-SP650_091923_BIX | 9/19/2023 | 1300 |
| E2300864-002 | LH18/24-SP650_091923_AIX | 9/19/2023 | 1300 |

# Service Request Summary

**Folder #:** **E2300864**
Client Name: ALS Environmental - US
Project Name: HS23091132
Project Number:

**Report To:** James Guin
ALS Environmental - US
10450 Stancliff Rd #210
Houston, TX 77099
USA
Phone Number: 281-530-5656
Cell Number:
Fax Number:
E-mail: james.guin@alsglobal.com

Project Chemist: Hussam Kelany
Originating Lab: HOUSTON
Logged By: CGRANDITS
Date Received: 09/20/23
Internal Due Date: 9/21/2023
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS23091132
EDD: BASIC_WQC_CASNo, EQUIS APTIM LONGHORN EFWEDD

2 120 mL-Plastic Bottle Natural WM Unpreserved
**Location:** EHRMS-AirArch 1
**Pressure Gas:**
**Rush**

| Lab Samp No. | Client Samp No | Matrix | Collected | HOUSTON<br>ClO4 DOD/6850 |
|---|---|---|---|---|
| E2300864-001 | LH18/24-SP650_091923_BIX | Water | 09/19/23 1300 | **IV** |
| E2300864-002 | LH18/24-SP650_091923_AIX | Water | 09/19/23 1300 | **IV** |

# Service Request Summary

**Folder #:** **E2300864**
Client Name: ALS Environmental - US
Project Name: HS23091132
Project Number:

**Report To:** James Guin
ALS Environmental - US
10450 Stancliff Rd #210
Houston, TX 77099
USA
Phone Number: 281-530-5656
Cell Number:
Fax Number:
E-mail: james.guin@alsglobal.com

Project Chemist: Hussam Kelany
Originating Lab: HOUSTON
Logged By: CGRANDITS
Date Received: 09/20/23
Internal Due Date: 9/21/2023
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS23091132
EDD: BASIC_WQC_CASNo, EQUIS APTIM LONGHORN EFWEDD

2 120 mL-Plastic Bottle Natural WM Unpreserved
**Location:** EHRMS-AirArch 1
**Pressure Gas:**
**Rush**

## Test Comments:

| Group | Test/Method | Samples | Comments |
|---|---|---|---|
| Semivoa GCMS | ClO4 DOD/6850 | 2 | Level IV due 9/27 |

# Data Qualifiers

## Lab Standard

| | |
|---|---|
| + | Possible Tedlar bag artifact. |
| A | TIC is a suspected aldol-condensation product |
| B | Analyte found in the associated method blank as well as in the sample. |
| BC | Reported results are not blank corrected. |
| BH | The back section of the tube yielded higher results than the front. |
| BT | Results indicated possible breakthrough; back section >=10% front section. |
| C | Result identification confirmed. |
| D | Compound identified in an analysis at a secondary dilution factor |
| D | Spike was diluted out |
| DE | Reported results are corrected for desorption efficiency. |
| E | Estimated value. Concentration above calibration range |
| E | The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample. |
| F | The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard. |
| H | The chromatographic fingerprint of the sample resembles a petroleum product but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard. |
| H1 | Sample analysis performed past holding time. See case narrative. |
| H2 | Initial analysis within holding time. Reanalysis for the required dilution was past holding time. |
| H3 | Sample was received and analyzed past holding time. |
| H4 | Sample was extracted past required extraction holding time, but analyzed within analysis holding time. See case narrative. |
| I | (Auto) The reference ion ratio was outside acceptance criteria, which may indicate a potential bias to this result. |
| I | Internal standard not within the specified limits. See case narrative. |
| I | The reference ion ratio was outside acceptance criteria, which may indicate a potential bias to this result. |
| J | Estimated Value. Concentration found below MRL. |
| K | A deflection in the QC ion may indicate interference with the quantitation of this ion. The concentration of this analyte should be considered as an estimate. |
| K | Analyte was detected above the method reporting limit prior to normalization. |
| K | The reference ion ratio was outside acceptance criteria, which may indicate a potential bias to this result. |
| L | The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard. |
| L1 | Laboratory control sample recovery outside the specified limits; results may be biased high. |
| L2 | Laboratory control sample recovery outside the specified limits; results may be biased low. |
| L3 | Laboratory control sample recovery outside the specified limits. |
| M | Matrix interference; results may be biased high. |
| M | The duplicate injection precision not met. |

# Data Qualifiers

## Lab Standard

| | |
|---|---|
| M1 | Matrix interference due to coelution with a non-target compound; results may be biased high. |
| N | Presumptive evidence of a compound for TICs that have been identified based on a mass spectral library search. |
| N | The Matrix Spike sample recovery is not within control limits. See case narrative. |
| O | The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard. |
| P | Indicates chlorodiphenyl ether interference present at the retention time of the target compound. |
| P | Pesticide/Aroclor target analyte > 40% difference for detected concentrations between GC columns |
| Q | Indicates as estimated value because the P and P + 2 theoretical abundance ratio does not meet method criteria. |
| R | Duplicate Precision not met. |
| R1 | Duplicate precision not within the specified limits; however, the results are below the MRL and considered estimated. |
| S | Surrogate recovery not within specified limits. |
| S | The reported value was determined by the Method of Standard Additions (MSA). |
| T | Analyte is a tentatively identified compound, result is estimated. |
| U | Compound was analyzed for, but was not detected (ND). |
| V1 | The continuing calibration verification standard was outside (biased high) the specified limits for this compound. |
| V2 | The continuing calibration verification standard was outside (biased low) the specified limits for this compound. |
| W | Result quantified, but the corresponding peak was detected outside the generated retention time window. |
| W | The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance. |
| X | See case narrative. |
| Y | Recovery outside limits |
| Y | The chromatogram resembles a petroleum product but does not match the calibration standard. |
| Z | The chromatogram does not resemble a petroleum product. |
| i | The MRL/MDL has been elevated due to a matrix interference. |

# ALS Laboratory Group

**Acronyms**

| | |
|---|---|
| Cal | Calibration |
| Conc | CONCentration |
| Dioxin(s) | Polychlorinated dibenzo-p-dioxin(s) |
| EDL | Estimated Detection Limit |
| EMPC | Estimated Maximum Possible Concentration |
| Flags | Data qualifiers |
| Furan(s) | Polychlorinated dibenzofuran(s) |
| g | Grams |
| ICAL | Initial CALibration |
| ID | IDentifier |
| Ions | Masses monitored for the analyte during data acquisition |
| L | Liter (s) |
| LCS | Laboratory Control Sample |
| DLCS | Duplicate Laboratory Control Sample |
| MB | Method Blank |
| MCL | Method Calibration Limit |
| MDL | Method Detection Limit |
| mL | Milliliters |
| MS | Matrix Spiked sample |
| DMS | Duplicate Matrix Spiked sample |
| NO | Number of peaks meeting all identification criteria |
| PCDD(s) | Polychlorinated dibenzo-p-dioxin(s) |
| PCDF(s) | Polychlorinated dibenzofuran(s) |
| ppb | Parts per billion |
| ppm | Parts per million |
| ppq | Parts per quadrillion |
| ppt | Parts per trillion |
| QA | Quality Assurance |
| QC | Quality Control |
| Ratio | Ratio of areas from monitored ions for an analyte |
| % Rec. | Percent recovery |
| RPD | Relative Percent Difference |
| RRF | Relative Response Factor |
| RT | Retention Time |
| SDG | Sample Delivery Group |
| S/N | Signal-to-noise ratio |
| TEF | Toxicity Equivalence Factor |
| TEQ | Toxicity Equivalence Quotient |

10450 Stancliff Rd, Houston, TX 77099 | 281-530-5656 | www.alsglobal.com

## State Certifications, Accreditations, and Licenses

| Agency | Number | Expire Date |
|---|---|---|
| Arizona Department of Health Services | AZ0793_2024 | 5/27/2024 |
| Arkansas Department of Environmental Quality | 88-00356 | 3/27/2024 |
| California State Environmental Laboratory Accreditation Program | 2919 | 4/30/2024 |
| Department of Defense | L23-358 | 5/31/2025 |
| Department of Defense | L22-90 | 3/31/2024 |
| Florida Department of Health | E87611-38 | 6/30/2024 |
| Illinois Environmental Protection Agency | 2000322023-11 | 6/30/2024 |
| Kansas Department of Health and Environment | E-10352 2023-2024 | 7/31/2024 |
| Louisiana Department of Environmental Quality | 03087-2023 | 6/30/2024 |
| Louisiana Department of Health and Hospitals | LA028-2023 | 12/31/2023 |
| Maine Department of Health and Human Services | 2022017 | 6/5/2024 |
| Maryland Department of the Environment | 343-2023 | 6/30/2024 |
| Michigan Depratment of Environmental Quality | 9971-2023 | 4/30/2024 |
| Minnesota Department of Health | 2368363 | 12/31/2023 |
| Nebraska Department of Health and Human Services | NE-OS-25-13 | 4/30/2024 |
| Nevada Division of Environmental Protection | TX026932024-1 | 7/31/2024 |
| New Hampshire Environmental Laboratory Accreditation Program | 209423 | 4/24/2024 |
| New Jersey Department of Environmental Protection | TX008-2024 | 6/30/2024 |
| New York Department of Health | 11707 | 3/31/2024 |
| Oregon Environmental Laboratory Accreditation Program | TX200002-011 | 5/15/2024 |
| Pennsylvania Department of Environmental Protection | 68-03441-017 | 6/30/2024 |
| Perry Johnson Laboratory Accreditation | L22-91 | 3/31/2024 |
| Tennessee Department of Environment and Concervation | TN04016-2023 | 4/30/2024 |
| Texas Commision on Environmental Quality | T104704231-23-30 | 4/30/2024 |
| Utah Department of Health Environmental Laboratory Certification | TX026932023-14 | 7/31/2024 |
| Washington Department of Ecology | C819-22 | 11/14/2023 |

# Chain of Custody

**ALS Environmental - Houston Specialties Laboratory**
10450 Stancliff Rd., Suite 210, Houston TX 77099
Phone (281)530-5656 Fax (281)530-5887
www.alsglobal.com

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Houston, TX 77099
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F: +1 281 530 5887
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# Subcontract Chain of Custody

**SAMPLING STATE:** Dept of Defense **COC ID:** 23238

**SUBCONTRACT TO:**

ALS Environmental
10450 Stancliff RoadSuite 210
Houston, TX 77084 **Phone:** +1 281 530 5656

**CUSTOMER INFORMATION:**

| | |
|---|---|
| **Company:** | ALS Houston |
| **Contact:** | James Guin |
| **Address:** | 10450 Stancliff Rd, Ste 210 |
| **Phone:** | +1 281 530 5656 |
| **Email:** | James.Guin@alsglobal.com |
| **Alternate Contact:** | Jumoke M. Lawal |
| **Email:** | jumoke.lawal@alsglobal.com |

**INVOICE INFORMATION:**

| | |
|---|---|
| **Company:** | ALS Houston |
| **Contact:** | Accounts Payable |
| **Address:** | 10450 Stancliff Rd, Ste 210 |
| **Phone:** | +1 281 530 5656 |
| **Reference:** | HS23091132 |
| **TSR:** | Holly Tignac |

| | LAB SAMPLE ID | CLIENT SAMPLE ID | MATRIX | COLLECT DATE |
|---|---|---|---|---|
| | ANALYSIS REQUESTED | | | DUE DATE |
| 1. | **HS23091132-02** | **LH18/24-SP650_091923_BIX** | **Water** | **19 Sep 2023 13:00** |
| | 6850-Perch. DOD Level II & Level IV in separate pdf | | | 21 Sep 2023 |
| 2. | **HS23091132-03** | **LH18/24-SP650_091923_AIX** | **Water** | **19 Sep 2023 13:00** |
| | 6850-Perch. DOD Level II & Level IV in separate pdf | | | 21 Sep 2023 |

**Comments:** Please analyze for the analysis listed above.
Send report to the emails shown above.

**QC Level:** DOD IV (DoD Data Package)

E2300864 5
ALS Environmental - US
HS23091132

Relinquished By: PC Date/Time:

Received By: CG Date/Time: 9-20-23 1640

Cooler ID(s): Temperature(s):

# Cooler Receipt Form

ALS Environmental

Project Chemist H

Client/Project ALS

Thermometer ID IR1

Date/Time Received: 9.20.23 Initials: cg

Date/Time Logged in: 9.20.23 Initials cg

1. Method of delivery: ○ US Mail ○ Fed Ex ○ UPS ○ DHL ☒ ALS Courier ○ Client

2. Samples received in: ☒ Cooler ○ Box ○ Envelope ○ Other

3. Were custody seals on coolers? ○ Yes ☒ No
   Were they intact? ○ Yes ○ No ☒ N/A
   Were they signed and dated? ○ Yes ○ No ☒ N/A
   If yes, how many and where?

4. Packing Material: ○ Inserts ☒ Baggies ○ Bubble Wrap ○ Gel Packs ☒ Wet Ice ○ Sleeves ○ Other

5. Foreign or Regulated Soil? ○ Yes ○ No Location of Sampling:

| Cooler Tracking Number | COC ID | Date Opened | Time Opened | Opened By | Temp. °C | Temp Blank? |
|---|---|---|---|---|---|---|
| ~~blank~~ | | 9.20.23 | 1640 | cg | 3.1 | ☐ |
| | | | | | | ☐ |
| | | | | | | ☐ |
| | | | | | | ☐ |

6. Were custody papers properly filled out (ink, signed, dated, etc)? ☒ Yes ○ No
7. Did all bottles arrive in good condition (not broken, no signs of leakage)? ☒ Yes ○ No
8. Were all sample labels complete (i.e., sample ID, analysis, preservation, etc)? ☒ Yes ○ No
9. Were appropriate bottles/containers and volumes received for the requested tests? ☒ Yes ○ No
10. Did sample labels and tags agree with custody documents? ☒ Yes ○ No

Notes, Discrepancies, & Resolutions:

Service request Label: E2300864 5
ALS Environmental - US
HS23091132



10450 Stancliff Rd., Suite 210
Houston, TX 77099
**T:** +1 281 530 5656
**F:** +1 281 530 5887
**www.alsglobal.com**

# SAMPLE ACCEPTANCE POLICY

This policy outlines the criteria samples must meet to be accepted by ALS Environmental – Houston HRMS.

**Cooler Custody Seals (desirable, mandatory if specified in SAP):**

- ✓ Intact on outside of cooler, signed and dated

**Chain-of-Custody (COC) documentation (mandatory):**

The following is required on each COC:

- ✓ Sample ID, the location, date and time of collection, collector's name, preservation type, sample type, and any other special remarks concerning the sampleThe COC must be completed in ink.
- ✓ Signature and date of relinquishing party.

In the absence of a COC at sample receipt, the COC will be requested from the client.

**Sample Integrity (mandatory):**

Samples are inspected upon arrival to ensure that sample integrity was not compromised during transfer to the laboratory.

- ✓ Sample containers must arrive in good condition (not broken or leaking).
- ✓ Samples must be labeled appropriately, including Sample IDs, and requested test using durable labels and indelible ink.
- ✓ The correct type of sample bottle must be used for the method requested.
- ✓ An appropriate sample volume, or weight, must be received.
- ✓ Sample IDs and number of containers must reconcile with the COC.
- ✓ Samples must be received within the method defined holding time.

**Temperature Requirement (varies by sample matrix):**

- ✓ Aqueous and Non-aqueous samples must be shipped and stored cold, at 0 to 6ºC.
- ✓ Tissue samples must be shipped and stored frozen, at -20 to -10ºC.
- ✓ Air samples are shipped and stored cold, at 0 to 6ºC
- ✓ The sample temperature must be recorded on the COC

All cooler inspections are documented on the Cooler Receipt Form (CRF). A separate CRF is completed for each service request. Any samples not meeting the above criteria are noted on the CRF and the Project Manager notified. The Project Manager must resolve any sample integrity issues with the client prior to proceeding with the analysis. Such resolutions are documented in writing and filed with the project folder. Data associated with samples received outside of this acceptance policy will be qualified on the case narrative of the final report

# Preparation Information Benchsheets

**ALS Environmental - Houston Specialties Laboratory**
10450 Stancliff Rd., Suite 210, Houston TX 77099
Phone (281)530-5656 Fax (281)530-5887
www.alsglobal.com

# *Preparation Information Benchsheet*

**Prep Run#:** 426900 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
**Team:** Semivoa GCMS/XMI **Prep Method:** **Prep Date/Time:** 9/21/23 08:00

| # | Lab Code | Client ID | B# | Method /Test | pH | Cl | Matrix | Amt. Ext. | Sample Description |
|---|---|---|---|---|---|---|---|---|---|
| 1 | E2300855-001 | MA01MW004-S | .01 | 6850/ClO4 DOD | | | Ground Water | 10mL | |
| 2 | E2300864-001 | LH18/24-SP650_091923_BIX | .01 | 6850/ClO4 DOD | | | Water | 10mL | |
| 3 | E2300864-002 | LH18/24-SP650_091923_AIX | .01 | 6850/ClO4 DOD | | | Water | 10mL | |
| 4 | EQ2300460-01 | MB | | 6850/ClO4 | | | Liquid | 10mL | |
| 5 | EQ2300460-02 | LCS | | 6850/ClO4 | | | Liquid | 10mL | |
| 6 | EQ2300460-03 | DLCS | | 6850/ClO4 | | | Liquid | 10mL | |
| 7 | K2310422-001 | LGAC-INF-091823 | .01 | 6850/ClO4 | | | Water | 10mL | |
| 8 | K2310422-002 | LGAC-INT1-091823 | .01 | 6850/ClO4 | | | Water | 10mL | |
| 9 | K2310422-003 | LGAC-INT2-091823 | .01 | 6850/ClO4 | | | Water | 10mL | |

## Spiking Solutions

Name: Perchlorate Intermediate Stock1 Inventory ID 230342 Logbook Ref: Perchlorate (1st Source) Expires On: 03/07/2024

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| EQ2300460-02 | 1.00µL | EQ2300460-02 | 1.00µL | EQ2300460-03 | 1.00µL | EQ2300460-03 | 1.00µL |

Name: Perchlorate Internal Standard 1ug/mL Inventory ID 230372 Logbook Ref: Perchlorate Internal Standard Expires On: 04/30/2024

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| E2300855-001 | 100.00µL | E2300864-001 | 100.00µL | E2300864-002 | 100.00µL | EQ2300460-01 | 100.00µL | EQ2300460-01 | 100.00µL | EQ2300460-02 | 100.00µL |
| EQ2300460-02 | 100.00µL | EQ2300460-03 | 100.00µL | EQ2300460-03 | 100.00µL | K2310422-001 | 100.00µL | K2310422-002 | 100.00µL | K2310422-003 | 100.00µL |

## Preparation Steps

Step: Preparation
Started: 9/21/23 08:00
Finished: 9/21/23 09:00
By: XMI
Comments

Comments: _____

Reviewed By: _____ Date: _____

Chain of Custody

Relinquished By: _____ Date: _____ Extracts Examined

Received By: _____ Date: _____ Yes No

# Analytical Results

**ALS Environmental - Houston Specialties Laboratory**
10450 Stancliff Rd., Suite 210, Houston TX 77099
Phone (281)530-5656 Fax (281)530-5887
www.alsglobal.com

**ALS Group USA, Corp. dba ALS Environmental**

Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | ALS Environmental - US | **Service Request:** | E2300864 |
| **Project:** | HS23091132 | **Date Collected:** | 9/19/23 1300 |
| **Sample Matrix:** | Water | **Date Received:** | 9/20/23 |
| **Sample Name:** | LH18/24-SP650_091923_BIX | **Units:** | µg/L |
| **Lab Code:** | E2300864-001 | **Basis:** | NA |

**Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry**

**Analytical Method:** 6850

| Analyte Name | Result | Q | LOQ | LOD | MDL | Dilution Factor | Date Extracted | Date Analyzed | Extraction Lot | Analysis Lot | Note |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | **9.17** | | 0.100 | 0.0500 | 0.0250 | 1 | 9/21/23 | 9/21/23 10:25 | 426900 | 817943 | |

**ALS Group USA, Corp. dba ALS Environmental**

Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | ALS Environmental - US | **Service Request:** | E2300864 |
| **Project:** | HS23091132 | **Date Collected:** | 9/19/23 1300 |
| **Sample Matrix:** | Water | **Date Received:** | 9/20/23 |
| **Sample Name:** | LH18/24-SP650_091923_AIX | **Units:** | µg/L |
| **Lab Code:** | E2300864-002 | **Basis:** | NA |

**Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry**

**Analytical Method:** 6850

| Analyte Name | Result | Q | LOQ | LOD | MDL | Dilution Factor | Date Extracted | Date Analyzed | Extraction Lot | Analysis Lot | Note |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | **4.69** | | 0.100 | 0.0500 | 0.0250 | 1 | 9/21/23 | 9/21/23 10:30 | 426900 | 817943 | |

**ALS Group USA, Corp. dba ALS Environmental**

Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | ALS Environmental - US | **Service Request:** | E2300864 |
| **Project:** | HS23091132 | **Date Collected:** | NA |
| **Sample Matrix:** | Water | **Date Received:** | NA |
| **Sample Name:** | Method Blank | **Units:** | µg/L |
| **Lab Code:** | EQ2300460-01 | **Basis:** | NA |

**Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry**

**Analytical Method:** 6850

| Analyte Name | Result | Q | LOQ | LOD | MDL | Dilution Factor | Date Extracted | Date Analyzed | Extraction Lot | Analysis Lot | Note |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | ND | U | 0.100 | 0.0500 | 0.0250 | 1 | 9/21/23 | 9/21/23 10:02 | 426900 | 817943 | |

# Accuracy & Precision

**ALS Environmental - Houston Specialties Laboratory**
10450 Stancliff Rd., Suite 210, Houston TX 77099
Phone (281)530-5656 Fax (281)530-5887
www.alsglobal.com

**ALS Group USA, Corp. dba ALS Environmental**

QA/QC Report

**Client:** ALS Environmental - US
**Project:** HS23091132
**Sample Matrix:** Water

**Service Request:** E2300864
**Date Analyzed:** 9/21/23

**Lab Control Sample Summary**
**Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry**

**Analytical Method:** 6850
**Prep Method:**

**Units:** µg/L
**Basis:** NA

**Extraction Lot:** 426900

| | Lab Control Sample EQ2300460-02 | | | Duplicate Lab Control Sample EQ2300460-03 | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Analyte Name** | **Result** | **Spike Amount** | **% Rec** | **Result** | **Spike Amount** | **% Rec** | **% Rec Limits** | **RPD** | **RPD Limit** |
| Perchlorate | 0.113 | 0.100 | 113 | 0.100 | 0.100 | 100 | 84 - 119 | 12 | 15 |

**Results flagged with an asterisk (*) indicate values outside control criteria.**

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

**ALS Group USA, Corp. dba ALS Environmental**

Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | ALS Environmental - US | **Service Request:** | E2300864 |
| **Project:** | HS23091132 | **Date Collected:** | NA |
| **Sample Matrix:** | Water | **Date Received:** | NA |
| **Sample Name:** | Lab Control Sample | **Units:** | µg/L |
| **Lab Code:** | EQ2300460-02 | **Basis:** | NA |

**Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry**

**Analytical Method:** 6850

| Analyte Name | Result | Q | LOQ | LOD | MDL | Dilution Factor | Date Extracted | Date Analyzed | Extraction Lot | Analysis Lot | Note |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | **0.113** | | 0.100 | 0.0500 | 0.0250 | 1 | 9/21/23 | 9/21/23 10:08 | 426900 | 817943 | |

**ALS Group USA, Corp. dba ALS Environmental**

Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | ALS Environmental - US | **Service Request:** | E2300864 |
| **Project:** | HS23091132 | **Date Collected:** | NA |
| **Sample Matrix:** | Water | **Date Received:** | NA |
| **Sample Name:** | Duplicate Lab Control Sample | **Units:** | µg/L |
| **Lab Code:** | EQ2300460-03 | **Basis:** | NA |

**Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry**

**Analytical Method:** 6850

| Analyte Name | Result | Q | LOQ | LOD | MDL | Dilution Factor | Date Extracted | Date Analyzed | Extraction Lot | Analysis Lot | Note |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | **0.100** | | 0.100 | 0.0500 | 0.0250 | 1 | 9/21/23 | 9/21/23 11:01 | 426900 | 817943 | |

# HS23091132 Wetchem NIT-AMM_W- E350.3 - ISE

ALS WO# HS23091132

ALS Laboratory Group

NH3_WL_E350.3 ISE
NH3_N_ISE

# Ion Selective Electrode Logbook

Logbook **3231**

| | | | | | |
|---|---|---|---|---|---|
| Analyst: NB | | | | Date: 09/25/23 | |
| Method: SM4500NH3-D/EPA 350.3 or SM4500 NH3 B-F | | | | | |
| Probe Calibration Date: 09/25/23 | | Cal Std ID: 322/46903-38 | | Probe ID: NH3-8 | |
| Std Level | | mV | Conc., mg/L: | Sodium Thiosulfate ID: 3120426219 | |
| STD 1 (mg/L): | | 143.5 | 0.199 | Std Level / mV / Conc., mg/L: | |
| STD 2 (mg/L): | | 109.8 | 0.999 | STD 4 (mg/L): 46.9 | 10.033 |
| STD 3 (mg/L): | | 64.6 | 5.011 | STD 5 (mg/L): 1.0 | 50.200 |
| LSC / MS Spike ID: 3120CV1B-24 | | | | ICAL Date & Slope: | |
| ICV Cal STD ID: 322/46903 | | | | | |
| DPD Reagent ID: 3120427513 | | | | | |

| WO # / SX # | Bottle # | Initial g or ml | Final Vol. ml | Dilution Factor | Initial Conc. mg/L | Final Conc. mg/L | Chlorine Check ( +/– ) | Comments |
|---|---|---|---|---|---|---|---|---|
| ICV | | 50 mL | 50 mL | | 9.134 | | | |
| ICB | | | | | 0.002 | | | |
| MBLK | | | | | 0.002 | | | |
| LCS | | | | | 9.311 | | | |
| HS23091132-01 | | | | | 23.970 | | - | |
| 1132-01 | | | | | 1.940 | | | |
| 1132-01 MS | | | | | 10.222 | | | |
| 1132-01 MSD | | | | | 10.299 | | | |
| 1183-01 | | | | | 1.396 | | | |
| 1178-01 | | | | | 1.214 | | | |
| 1258-01 | | | | | 1.165 | | | |
| 1360-01 | | | | | 1.228 | | | |
| CCV | | | | | 9.014 | | | |
| CCB | | | | | 0.008 | | | |
| HS23091181-01 | | | | | 0.889 | | - | |
| 1181-01 MS | | | | | 9.998 | | | |
| 1181-01 MSD | | | | | 10.167 | | | |
| 1254-01 | | | | | 0.088 | | | |
| 1244-01 | | | | | 0.593 | | | |
| 1370-01 | | " | | | 0.365 | | | |
| 1356-02 | | 5 mL | | | 24.609 | | + | |
| 1356-05 | | | | | 23.867 | | + | |
| 1356-08 | | | | | | | + | |
| CCV | | 50 mL | | | 9.560 | | | |
| CCB | | " | " | | 0.208 | | | |

| Batch ID: 447378 | Reported By | Reviewed By: |
|---|---|---|


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ALS Laboratory Group

NIT_Amm_ISE E3803 ISE
NIT_Amm_ISE ISE

Logbook **32317**

# Ion Selective Electrode Logbook

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Analyst: | | | | | Date: | | | |
| Method: SM4500NH3-D/EPA 350.3 or SM4500 NH3 B-F | | | | | | | | |
| Probe Calibration Date: | | Cal Std ID: con. page 28 | | | Probe ID: | | | |
| Std Level | | mV | Conc., mg/L: | | Sodium Thiosulfate ID: | | | |
| STD 1 (mg/L): | | | | | Std Level | mV | Conc., mg/L: | |
| STD 2 (mg/L): | | | | | STD 4 (mg/L): | | | |
| STD 3 (mg/L): | | | | | STD 5 (mg/L): | | | |
| LSC / MS Spike ID: | | | | | ICAL Date & Slope: | | | |
| ICV Cal STD ID: | | | | | | | | |
| DPD Reagent ID: | | | | | | | | |

| WO # / SX # | Bottle # | Initial g or ml | Final Vol. ml | Dilution Factor | Initial Conc. mg/L | Final Conc. mg/L | Chlorine Check ( +/– ) | Comments |
|---|---|---|---|---|---|---|---|---|
| HS2309356-11 | | 5mL | 50mL | | | | + | |
| 1356-15 | | " | " | | | | + | |
| 1356-18 | | " | " | | | | + | |
| 1372-01 | | 50mL | " | | | | – | |
| 1349-01 | | " | " | | | | " | |
| CVJ | | " | " | | | | | |
| CCB | | " | " | | | | | |
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| Batch ID: | Reported By | Reviewed By: |
|---|---|---|


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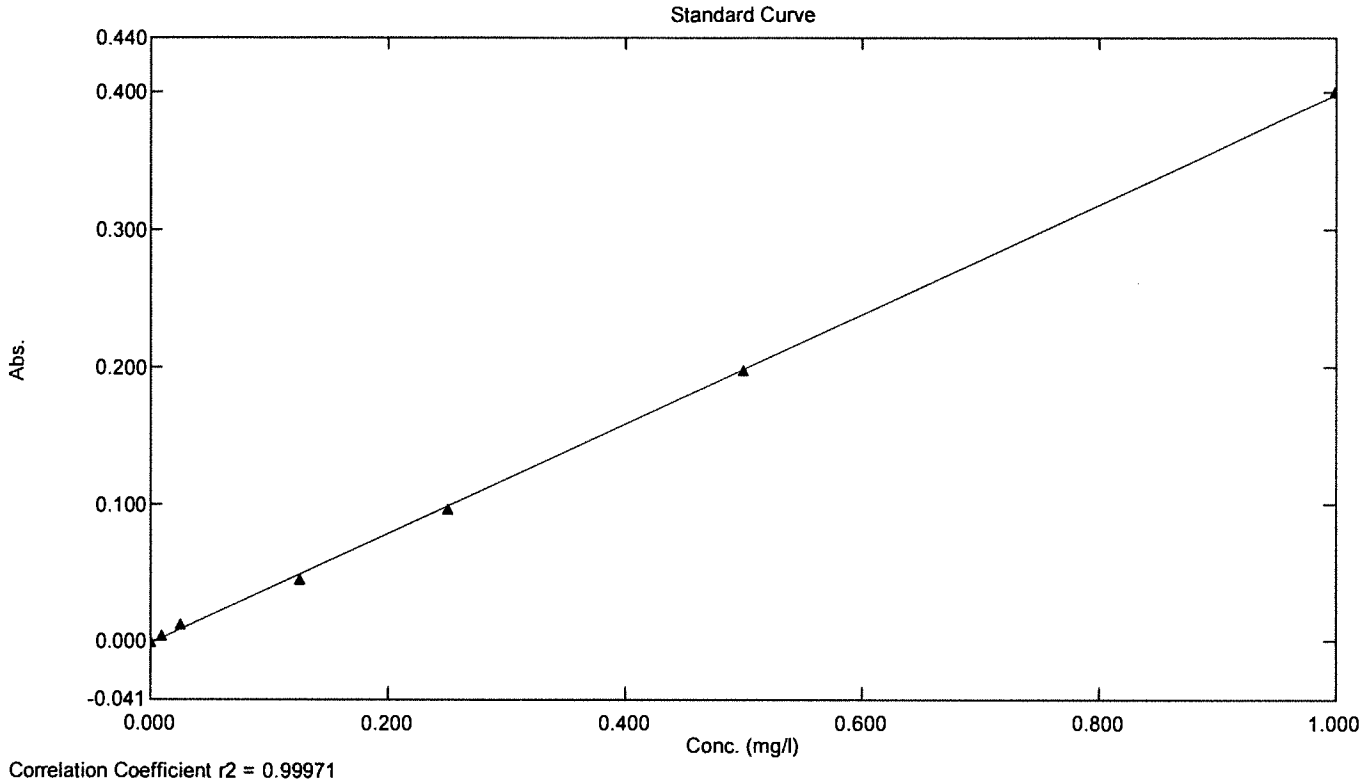
# HS23091132 Wetchem P-ORTHO

ALS WO# HS23091132

# Standard Table Report

09/22/2023 06:09:48 PM

File Name: C:\Program Files (x86)\Shimadzu\UVProbe\Data\P_ORTHO ( 365.3 METHOD)\2023\09202023_P_ORTHO_W.pho




Correlation Coefficient r2 = 0.99971

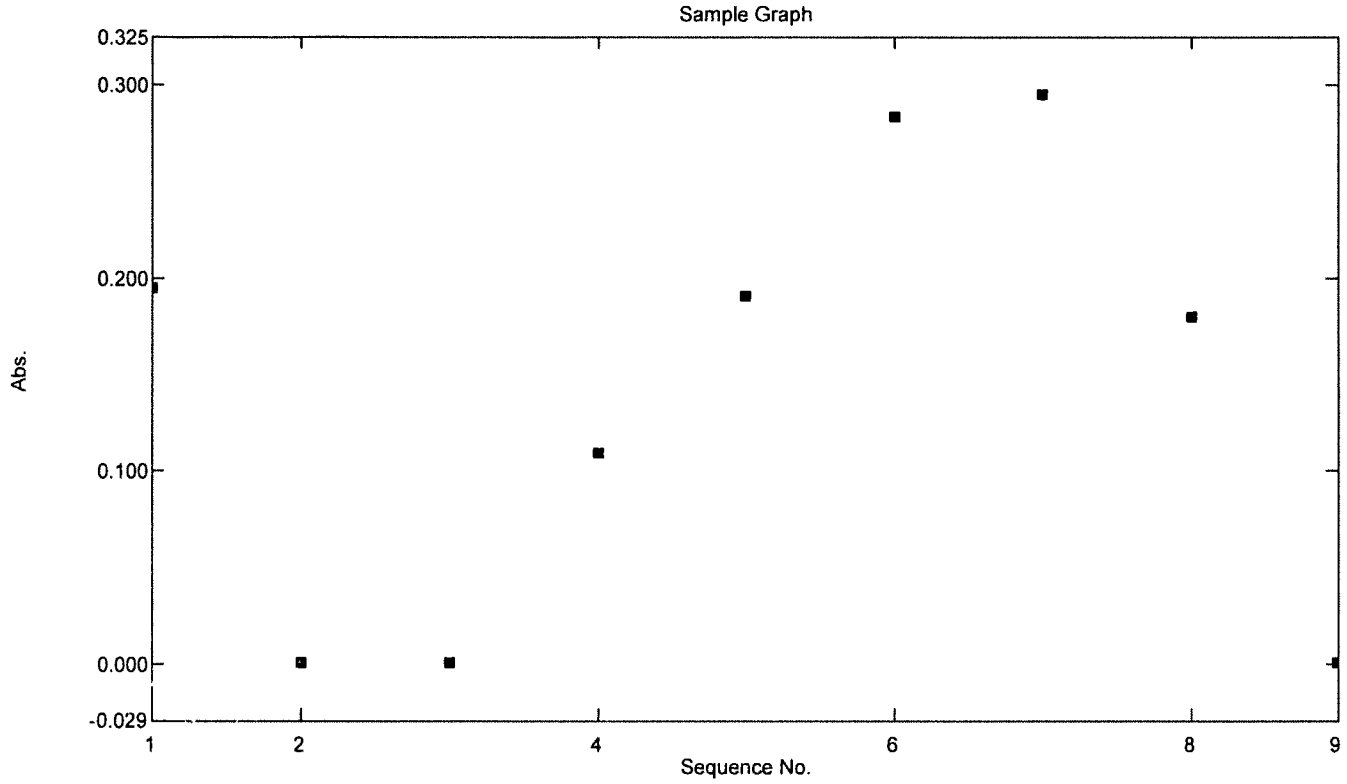
Standard Table

| | Sample ID | Type | Ex | Conc | WL650.0 | Wgt.Factor | Comments |
|---|---|---|---|---|---|---|---|
| 1 | STD1 | Standard | | 0.000 | -0.000 | 1.000 | |
| 2 | STD2 | Standard | | 0.010 | 0.005 | 1.000 | |
| 3 | STD3 | Standard | | 0.025 | 0.012 | 1.000 | |
| 4 | STD4 | Standard | | 0.125 | 0.045 | 1.000 | |
| 5 | STD5 | Standard | | 0.250 | 0.096 | 1.000 | |
| 6 | STD6 | Standard | | 0.500 | 0.197 | 1.000 | |
| 7 | STD7 | Standard | | 1.000 | 0.400 | 1.000 | |
| 8 | | | | | | | |

# Sample Table Report

09/22/2023 06:09:51 PM

File Name: C:\Program Files (x86)\Shimadzu\UVProbe\Data\P_ORTHO ( 365.3 METHOD)\2023\09202023_P_ORTHO_W.pho




Sample Table

| | Sample ID | Date | Time | Conc | WL650. | Comments |
|---|---|---|---|---|---|---|
| 1 | CCV | 09/20/2023 | 04:35:51 PM | 0.491 | 0.195 | 322146604 WC-23 |
| 2 | CCB | 09/20/2023 | 04:36:08 PM | 0.004 | 0.000 | |
| 3 | MBLK | 09/20/2023 | 04:36:14 PM | 0.004 | 0.000 | 11N 3100607720 |
| 4 | LCS | 09/20/2023 | 04:36:49 PM | 0.277 | 0.109 | 322146603 WC-21 |
| 5 | HS23091132.01 | 09/20/2023 | 04:39:02 PM | 0.480 | 0.190 | DF=10X |
| 6 | HS23091132.01MS | 09/20/2023 | 04:43:07 PM | 0.713 | 0.284 | DF=10X |
| 7 | HS23091132.01MSD | 09/20/2023 | 04:43:25 PM | 0.743 | 0.296 | DF=10X |
| 8 | CCV2 | 09/20/2023 | 04:44:04 PM | 0.453 | 0.180 | MOLYBDATE 322146301 |
| 9 | CCB2 | 09/20/2023 | 04:44:14 PM | 0.005 | 0.001 | ACID 322147202 |
| 10 | | | | | | |

# HS23091132 Wetchem TOC_W

ALS WO# HS23091132

C:\TOC-L\Data\2023_06_21_002.tlx

| | Type | Analysis | Sample Nam | Sample ID | Origin | Manual Diluti | Result | Notes | Status | Date / Time |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Standard | NPOC | CALIBRATI | | 06.21.2023. | 1.000 | | | Completed | 6/21/2023 6: |
| 2 | Unknown | NPOC | ICV | | 06.21.2023. | 1.000 | NPOC:7.77 | | Completed | 6/21/2023 6: |
| 3 | Unknown | NPOC | ICB | | 06.21.2023. | 1.000 | NPOC:0.01 | | Completed | 6/21/2023 7: |

C:\TOC-L\Data\2023_06_21_002.tlx

| | Vial |
|---|---|
| 1 | 60, 61, 62, 6 |
| 2 | 67 |
| 3 | 68 |

# TOC-Control L Report

2023_06_21_002.tlx

**Instr.Information**

Instrument Options: TOC/ASI/IC Unit/
Catalyst: Regular Sensitivity

**Cal. Curve**

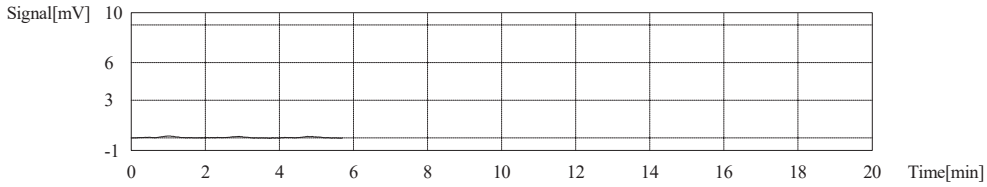
Sample Name: CALIBRATION
Sample ID:
Cal. Curve: 06.21.2023.2023_06_21_17_09_26.cal
Status: Completed

| Type | Anal. |
|---|---|
| Standard | NPOC |

Conc: 0.000mg/L

| No. | Area | Inj. Vol. | Aut. Dil. | Rem. | Ex. | Date / Time |
|---|---|---|---|---|---|---|
| 1 | 0.3327 | 50uL | 1.000 | ******* | | 6/21/2023 5:17:20 PM |
| 2 | 0.000 | 50uL | 1.000 | ******* | | 6/21/2023 5:19:28 PM |
| 3 | 0.4000 | 50uL | 1.000 | ******* | | 6/21/2023 5:21:36 PM |

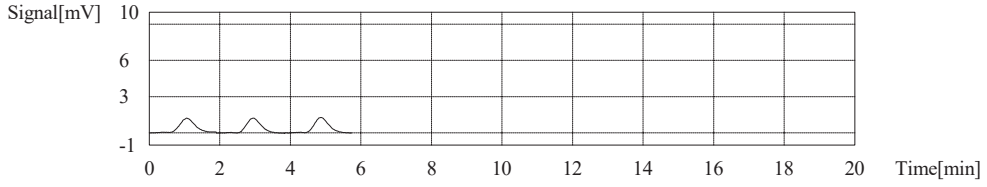
Acid Add. 0.000%
Sparge Gas Flow 80mL/min
Sp. Time 120.0sec
Mean Area 0.2442




Conc: 1.000mg/L

| No. | Area | Inj. Vol. | Aut. Dil. | Rem. | Ex. | Date / Time |
|---|---|---|---|---|---|---|
| 1 | 3.239 | 50uL | 1.000 | ******* | | 6/21/2023 5:29:24 PM |
| 2 | 3.486 | 50uL | 1.000 | ******* | | 6/21/2023 5:31:35 PM |
| 3 | 3.544 | 50uL | 1.000 | ******* | | 6/21/2023 5:33:43 PM |

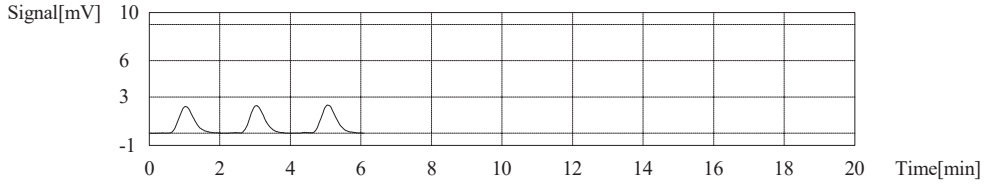
Acid Add. 0.000%
Sparge Gas Flow 80mL/min
Sp. Time 120.0sec
Mean Area 3.423




Conc: 2.000mg/L

| No. | Area | Inj. Vol. | Aut. Dil. | Rem. | Ex. | Date / Time |
|---|---|---|---|---|---|---|
| 1 | 6.496 | 50uL | 1.000 | ******* | | 6/21/2023 5:41:39 PM |
| 2 | 6.578 | 50uL | 1.000 | ******* | | 6/21/2023 5:43:54 PM |
| 3 | 6.676 | 50uL | 1.000 | ******* | | 6/21/2023 5:46:11 PM |

Acid Add. 0.000%
Sparge Gas Flow 80mL/min
Sp. Time 120.0sec
Mean Area 6.583



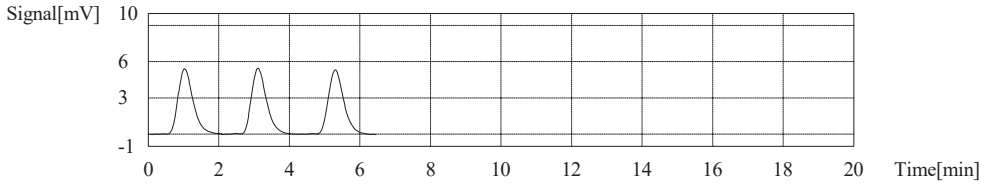
# TOC-Control L Report

2023_06_21_002.tlx

Conc: 5.000mg/L

| No. | Area | Inj. Vol. | Aut. Dil. | Rem. | Ex. | Date / Time |
|---|---|---|---|---|---|---|
| 1 | 15.80 | 50uL | 1.000 | ******* | | 6/21/2023 5:54:11 PM |
| 2 | 15.85 | 50uL | 1.000 | ******* | | 6/21/2023 5:56:36 PM |
| 3 | 16.15 | 50uL | 1.000 | ******* | | 6/21/2023 5:59:02 PM |

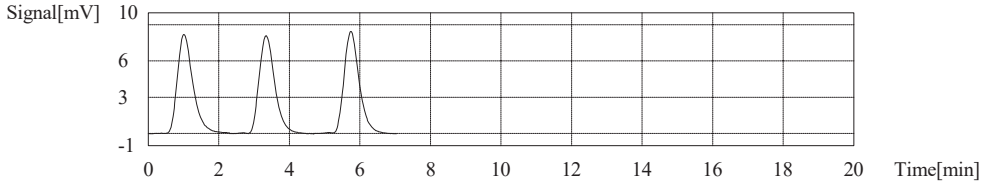
Acid Add. 0.000%
Sparge Gas Flow 80mL/min
Sp. Time 120.0sec
Mean Area 15.93




Conc: 10.00mg/L

| No. | Area | Inj. Vol. | Aut. Dil. | Rem. | Ex. | Date / Time |
|---|---|---|---|---|---|---|
| 1 | 24.91 | 50uL | 1.000 | ******* | | 6/21/2023 6:07:14 PM |
| 2 | 24.77 | 50uL | 1.000 | ******* | | 6/21/2023 6:09:54 PM |
| 3 | 25.05 | 50uL | 1.000 | ******* | | 6/21/2023 6:12:28 PM |

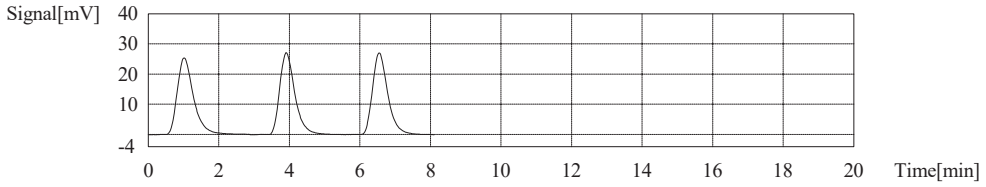
Acid Add. 0.000%
Sparge Gas Flow 80mL/min
Sp. Time 120.0sec
Mean Area 24.91




Conc: 25.00mg/L

| No. | Area | Inj. Vol. | Aut. Dil. | Rem. | Ex. | Date / Time |
|---|---|---|---|---|---|---|
| 1 | 80.93 | 50uL | 1.000 | ******* | | 6/21/2023 6:21:15 PM |
| 2 | 81.18 | 50uL | 1.000 | ******* | | 6/21/2023 6:24:07 PM |
| 3 | 81.22 | 50uL | 1.000 | ******* | | 6/21/2023 6:26:57 PM |

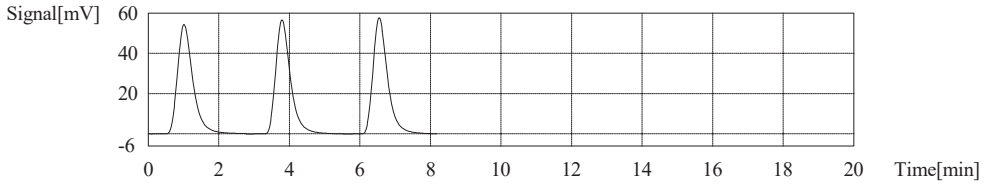
Acid Add. 0.000%
Sparge Gas Flow 80mL/min
Sp. Time 120.0sec
Mean Area 81.11




Conc: 50.00mg/L

| No. | Area | Inj. Vol. | Aut. Dil. | Rem. | Ex. | Date / Time |
|---|---|---|---|---|---|---|
| 1 | 163.2 | 50uL | 1.000 | ******* | | 6/21/2023 6:35:37 PM |
| 2 | 164.6 | 50uL | 1.000 | ******* | | 6/21/2023 6:38:38 PM |
| 3 | 165.0 | 50uL | 1.000 | ******* | | 6/21/2023 6:41:31 PM |

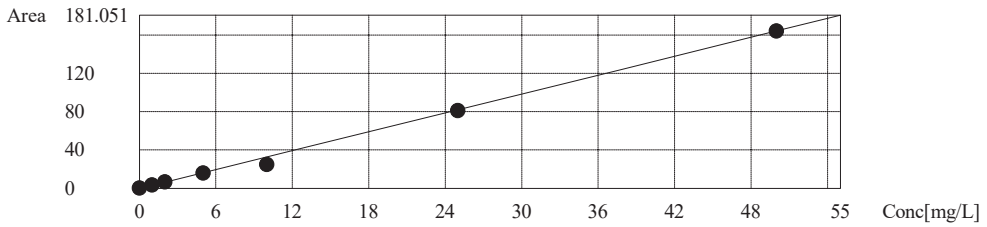
Acid Add. 0.000%
Sparge Gas Flow 80mL/min
Sp. Time 120.0sec
Mean Area 164.3



# TOC-Control L Report

2023_06_21_002.tlx

| | |
|---|---|
| Slope: | 3.292 |
| Intercept | 0.000 |
| r^2 | 0.9976 |
| r | 0.9988 |
| RSE(%) | N/A |
| Zero Shift | Yes |




**Sample**

| | |
|---|---|
| Sample Name: | ICV |
| Sample ID: | |
| Origin: | 06.21.2023.cal |
| Status | Completed |
| Chk. Result | |

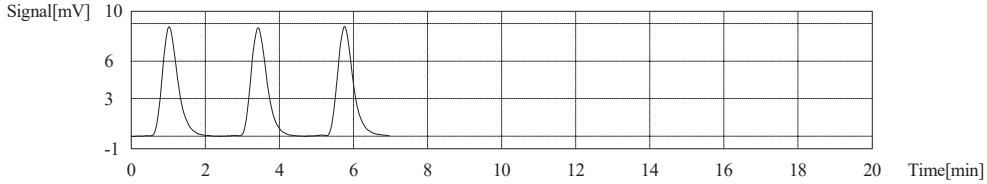
| Type | Anal. | Manual Dilution | Result |
|---|---|---|---|
| Unknown | NPOC | 1.000 | NPOC:7.778mg/L |

1. Det

Anal.: NPOC

| No. | Area | Conc. | Inj. Vol. | Aut. Dil. | Ex. | Cal. Curve | Date / Time |
|---|---|---|---|---|---|---|---|
| 1 | 25.58 | 7.771mg/L | 50uL | 1.000 | | 06.21.2023.2023_06_21_17_09_26.cal | 6/21/2023 6:49:49 PM |
| 2 | 25.53 | 7.756mg/L | 50uL | 1.000 | | 06.21.2023.2023_06_21_17_09_26.cal | 6/21/2023 6:52:22 PM |
| 3 | 25.70 | 7.807mg/L | 50uL | 1.000 | | 06.21.2023.2023_06_21_17_09_26.cal | 6/21/2023 6:54:51 PM |

| | |
|---|---|
| Mean Area | 25.60 |
| Mean Conc. | 7.778mg/L |




**Sample**

| | |
|---|---|
| Sample Name: | ICB |
| Sample ID: | |
| Origin: | 06.21.2023.cal |
| Status | Completed |
| Chk. Result | |

| Type | Anal. | Manual Dilution | Result |
|---|---|---|---|
| Unknown | NPOC | 1.000 | NPOC:0.01449mg/L |

1. Det

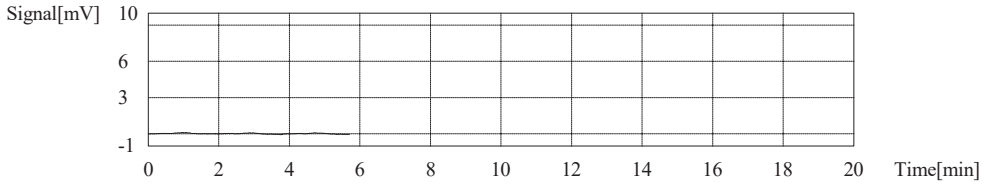
Anal.: NPOC

| No. | Area | Conc. | Inj. Vol. | Aut. Dil. | Ex. | Cal. Curve | Date / Time |
|---|---|---|---|---|---|---|---|
| 1 | 0.000 | 0.000mg/L | 50uL | 1.000 | | 06.21.2023.2023_06_21_17_09_26.cal | 6/21/2023 7:02:39 PM |
| 2 | 0.000 | 0.000mg/L | 50uL | 1.000 | | 06.21.2023.2023_06_21_17_09_26.cal | 6/21/2023 7:04:47 PM |
| 3 | 0.1431 | 0.04347mg/L | 50uL | 1.000 | | 06.21.2023.2023_06_21_17_09_26.cal | 6/21/2023 7:06:55 PM |

# TOC-Control L Report

2023_06_21_002.tlx

| | |
|---|---|
| Mean Area | 0.04770 |
| Mean Conc. | 0.01449mg/L |



C:\TOC-L\Data\2023_09_25_001.tlx

| | Sample Name | Sample ID | Origin | Result | Status | Date / Time | Vial |
|---|---|---|---|---|---|---|---|
| 1 | CCV | 322147105 | 09.20.2023. | NPOC:24.1 | Completed | 9/25/2023 10:25: | 1 |
| 2 | CCB | | 09.20.2023. | NPOC:0.15 | Completed | 9/25/2023 10:37: | 2 |
| 3 | MBLK-09252023 | | 09.20.2023. | NPOC:0.09 | Completed | 9/25/2023 10:49: | 3 |
| 4 | LCS-09252023 | 3100607901 | 09.20.2023. | NPOC:9.62 | Completed | 9/25/2023 11:03: | 4 |
| 5 | LCSD-09252023 | | 09.20.2023. | NPOC:9.63 | Completed | 9/25/2023 11:17: | 5 |
| 6 | HS23091132-01 | TOC_W | 09.20.2023. | NPOC:2.71 | Completed | 9/25/2023 11:31: | 6 |
| 7 | HS23091296-01 | | 09.20.2023. | NPOC:2.96 | Completed | 9/25/2023 11:44: | 7 |
| 8 | HS23091296-01M | | 09.20.2023. | NPOC:14.8 | Completed | 9/25/2023 11:59: | 8 |
| 9 | HS23091296-02 | | 09.20.2023. | NPOC:1.58 | Completed | 9/25/2023 12:12: | 9 |
| 10 | HS23091296-03 | | 09.20.2023. | NPOC:1.68 | Completed | 9/25/2023 12:25: | 10 |
| 11 | HS23091296-04 | | 09.20.2023. | NPOC:2.12 | Completed | 9/25/2023 12:38: | 11 |
| 12 | HS23091296-05 | | 09.20.2023. | NPOC:2.22 | Completed | 9/25/2023 12:51: | 12 |
| 13 | CCV | 322147105 | 09.20.2023. | NPOC:25.3 | Completed | 9/25/2023 1:06:2 | 1 |
| 14 | CCB | | 09.20.2023. | NPOC:0.20 | Completed | 9/25/2023 1:18:4 | 2 |
| 15 | HS23091296-06 | | 09.20.2023. | NPOC:0.83 | Completed | 9/25/2023 1:31:3 | 13 |
| 16 | HS23091296-07 | | 09.20.2023. | NPOC:2.04 | Completed | 9/25/2023 1:44:5 | 14 |
| 17 | HS23091296-08 | | 09.20.2023. | NPOC:0.85 | Completed | 9/25/2023 1:57:3 | 15 |
| 18 | HS23091296-10 | | 09.20.2023. | NPOC:2.33 | Completed | 9/25/2023 2:11:0 | 16 |
| 19 | CCV | 322147105 | 09.20.2023. | NPOC:24.9 | Completed | 9/25/2023 2:25:5 | 1 |
| 20 | CCB | | 09.20.2023. | NPOC:0.18 | Completed | 9/25/2023 2:38:1 | 2 |
| 21 | MBLK-09252023 | | 09.20.2023. | NPOC:0.16 | Completed | 9/25/2023 2:50:3 | 3 |
| 22 | LCS-09252023 | 3100607901 | 09.20.2023. | NPOC:9.90 | Completed | 9/25/2023 3:04:3 | 4 |
| 23 | LCSD-09252023 | | 09.20.2023. | NPOC:9.96 | Completed | 9/25/2023 3:18:4 | 5 |
| 24 | HS23091234-02 | TOC_W 5310B | 09.20.2023. | NPOC:6.10 | Completed | 9/25/2023 3:32:5 | 17 |
| 25 | HS23091234-02M | | 09.20.2023. | NPOC:16.2 | Completed | 9/25/2023 3:47:3 | 18 |
| 26 | HS23091234-03 | | 09.20.2023. | NPOC:7.21 | Completed | 9/25/2023 4:01:2 | 19 |
| 27 | HS23091234-04 | | 09.20.2023. | NPOC:32.4 | Completed | 9/25/2023 4:16:3 | 20 |
| 28 | HS23091234-06 | | 09.20.2023. | NPOC:7.95 | Completed | 9/25/2023 4:30:2 | 21 |
| 29 | HS23091234-08 | | 09.20.2023. | NPOC:14.7 | Completed | 9/25/2023 4:45:1 | 22 |
| 30 | HS23091234-10 | | 09.20.2023. | NPOC:21.6 | Completed | 9/25/2023 4:59:5 | 23 |
| 31 | CCV | 322147105 | 09.20.2023. | NPOC:25.7 | Completed | 9/25/2023 5:14:4 | 1 |
| 32 | CCB | | 09.20.2023. | NPOC:0.20 | Completed | 9/25/2023 5:27:0 | 2 |
| 33 | HS23091103-01 | | 09.20.2023. | NPOC:3.80 | Completed | 9/25/2023 5:41:0 | 24 |
| 34 | HS23091172-01 | | 09.20.2023. | NPOC:0.00 | Completed | 9/25/2023 5:53:2 | 25 |
| 35 | HS23091180-01 | | 09.20.2023. | NPOC:0.00 | Completed | 9/25/2023 6:05:3 | 26 |
| 36 | HS23091187-01 | | 09.20.2023. | NPOC:48.2 | Completed | 9/25/2023 6:22:0 | 27 |
| 37 | CCV | 322147105 | 09.20.2023. | NPOC:25.2 | Completed | 9/25/2023 6:37:1 | 28 |
| 38 | CCB | | 09.20.2023. | NPOC:0.48 | Completed | 9/25/2023 6:49:5 | 29 |

# TOC-Control L Report



**Instr.Information**

Instrument Options TOC/ASI/IC Unit/
Catalyst Regular Sensitivity

**Sample**

Sample Name: CCV
Sample ID: 322147105
Origin: 09.20.2023.1.cal
Status Completed
Chk. Result

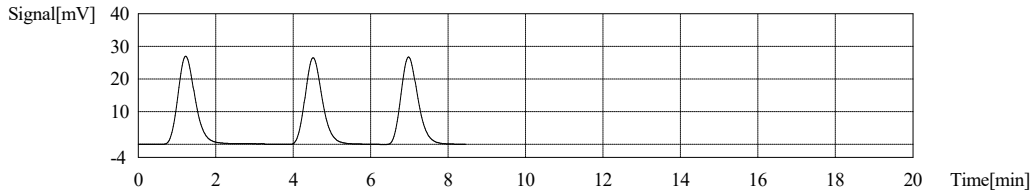
| Type | Anal. | Manual Dilution | Result |
|---|---|---|---|
| Unknown | NPOC | 1.000 | NPOC:24.16mg/L |

1. Det

Anal.: NPOC

| No. | Area | Conc. | Inj. Vol. | Aut. Dil. | Ex. | Cal. Curve | Date / Time |
|---|---|---|---|---|---|---|---|
| 1 | 84.00 | 24.42mg/L | 50uL | 1.000 | | 09.20.2023.1.2023_09_20_12_39_24.cal | 9/25/2023 10:19:37 AM |
| 2 | 82.37 | 23.94mg/L | 50uL | 1.000 | | 09.20.2023.1.2023_09_20_12_39_24.cal | 9/25/2023 10:22:22 AM |
| 3 | 82.95 | 24.11mg/L | 50uL | 1.000 | | 09.20.2023.1.2023_09_20_12_39_24.cal | 9/25/2023 10:25:18 AM |

Mean Area 83.11
Mean Conc. 24.16mg/L




**Sample**

Sample Name: CCB
Sample ID:
Origin: 09.20.2023.1.cal
Status Completed
Chk. Result

| Type | Anal. | Manual Dilution | Result |
|---|---|---|---|
| Unknown | NPOC | 1.000 | NPOC:0.1546mg/L |

1. Det

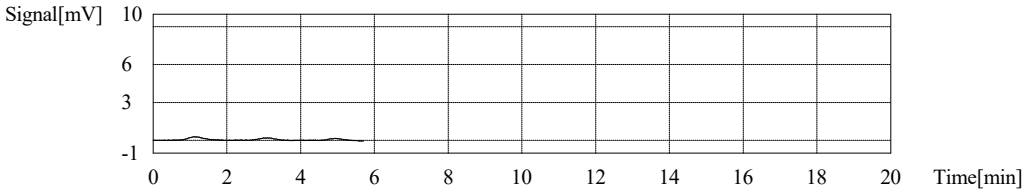
Anal.: NPOC

| No. | Area | Conc. | Inj. Vol. | Aut. Dil. | Ex. | Cal. Curve | Date / Time |
|---|---|---|---|---|---|---|---|
| 1 | 0.6764 | 0.1966mg/L | 50uL | 1.000 | | 09.20.2023.1.2023_09_20_12_39_24.cal | 9/25/2023 10:33:22 AM |
| 2 | 0.5773 | 0.1678mg/L | 50uL | 1.000 | | 09.20.2023.1.2023_09_20_12_39_24.cal | 9/25/2023 10:35:30 AM |
| 3 | 0.3417 | 0.09933mg/L | 50uL | 1.000 | | 09.20.2023.1.2023_09_20_12_39_24.cal | 9/25/2023 10:37:38 AM |

# TOC-Control L Report



Mean Area 0.5318
Mean Conc. 0.1546mg/L




**Sample**

Sample Name: MBLK-09252023
Sample ID:
Origin: 09.20.2023.1.cal
Status Completed
Chk. Result

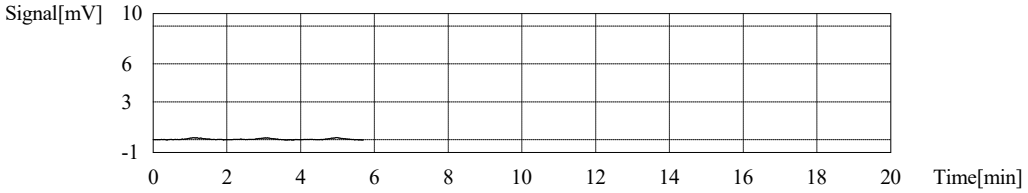
| Type | Anal. | Manual Dilution | Result |
|---|---|---|---|
| Unknown | NPOC | 1.000 | NPOC:0.09805mg/L |

1. Det

Anal.: NPOC

| No. | Area | Conc. | Inj. Vol. | Aut. Dil. | Ex. | Cal. Curve | Date / Time |
|---|---|---|---|---|---|---|---|
| 1 | 0.3297 | 0.09584mg/L | 50uL | 1.000 | | 09.20.2023.1.2023_09_20_12_39_24.cal | 9/25/2023 10:45:42 AM |
| 2 | 0.3324 | 0.09663mg/L | 50uL | 1.000 | | 09.20.2023.1.2023_09_20_12_39_24.cal | 9/25/2023 10:47:50 AM |
| 3 | 0.3498 | 0.1017mg/L | 50uL | 1.000 | | 09.20.2023.1.2023_09_20_12_39_24.cal | 9/25/2023 10:49:58 AM |

Mean Area 0.3373
Mean Conc. 0.09805mg/L




**Sample**

Sample Name: LCS-09252023
Sample ID: 3100607901
Origin: 09.20.2023.1.cal
Status Completed
Chk. Result

| Type | Anal. | Manual Dilution | Result |
|---|---|---|---|
| Unknown | NPOC | 1.000 | NPOC:9.622mg/L |

1. Det

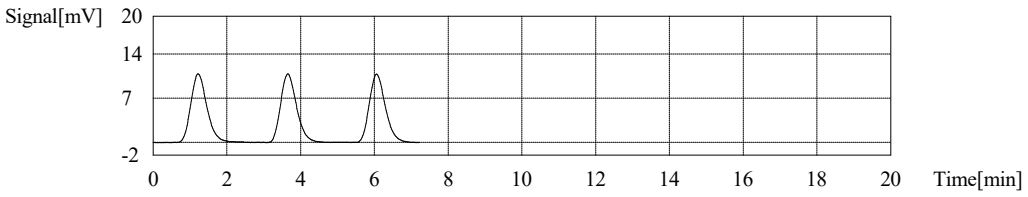
Anal.: NPOC

| No. | Area | Conc. | Inj. Vol. | Aut. Dil. | Ex. | Cal. Curve | Date / Time |
|---|---|---|---|---|---|---|---|
| 1 | 32.98 | 9.587mg/L | 50uL | 1.000 | | 09.20.2023.1.2023_09_20_12_39_24.cal | 9/25/2023 10:58:35 AM |
| 2 | 33.17 | 9.642mg/L | 50uL | 1.000 | | 09.20.2023.1.2023_09_20_12_39_24.cal | 9/25/2023 11:01:13 AM |
| 3 | 33.15 | 9.637mg/L | 50uL | 1.000 | | 09.20.2023.1.2023_09_20_12_39_24.cal | 9/25/2023 11:03:50 AM |

# TOC-Control L Report



Mean Area 33.10
Mean Conc. 9.622mg/L




**Sample**

Sample Name: LCSD-09252023
Sample ID:
Origin: 09.20.2023.1.cal
Status Completed
Chk. Result

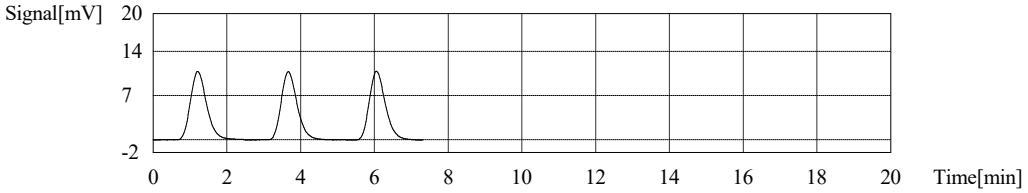
| Type | Anal. | Manual Dilution | Result |
|---|---|---|---|
| Unknown | NPOC | 1.000 | NPOC:9.630mg/L |

1. Det

Anal.: NPOC

| No. | Area | Conc. | Inj. Vol. | Aut. Dil. | Ex. | Cal. Curve | Date / Time |
|---|---|---|---|---|---|---|---|
| 1 | 33.19 | 9.648mg/L | 50uL | 1.000 | | 09.20.2023.1.2023_09_20_12_39_24.cal | 9/25/2023 11:12:27 AM |
| 2 | 32.70 | 9.506mg/L | 50uL | 1.000 | | 09.20.2023.1.2023_09_20_12_39_24.cal | 9/25/2023 11:15:06 AM |
| 3 | 33.49 | 9.735mg/L | 50uL | 1.000 | | 09.20.2023.1.2023_09_20_12_39_24.cal | 9/25/2023 11:17:48 AM |

Mean Area 33.13
Mean Conc. 9.630mg/L




**Sample**

Sample Name: HS23091132-01
Sample ID: TOC_W
Origin: 09.20.2023.1.cal
Status Completed
Chk. Result

| Type | Anal. | Manual Dilution | Result |
|---|---|---|---|
| Unknown | NPOC | 1.000 | NPOC:2.714mg/L |

1. Det

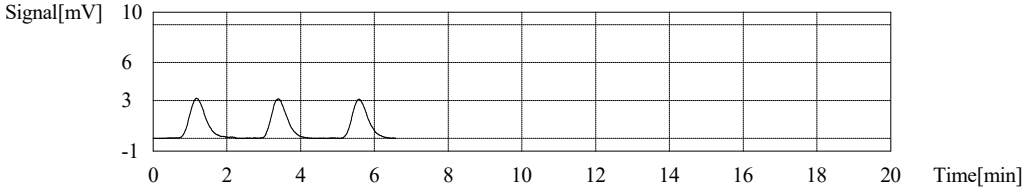
Anal.: NPOC

| No. | Area | Conc. | Inj. Vol. | Aut. Dil. | Ex. | Cal. Curve | Date / Time |
|---|---|---|---|---|---|---|---|
| 1 | 9.369 | 2.724mg/L | 50uL | 1.000 | | 09.20.2023.1.2023_09_20_12_39_24.cal | 9/25/2023 11:26:12 AM |
| 2 | 9.307 | 2.706mg/L | 50uL | 1.000 | | 09.20.2023.1.2023_09_20_12_39_24.cal | 9/25/2023 11:28:37 AM |
| 3 | 9.337 | 2.714mg/L | 50uL | 1.000 | | 09.20.2023.1.2023_09_20_12_39_24.cal | 9/25/2023 11:31:02 AM |

# TOC-Control L Report



Mean Area 9.338
Mean Conc. 2.714mg/L




**Sample**

Sample Name: HS23091296-01
Sample ID:
Origin: 09.20.2023.1.cal
Status Completed
Chk. Result

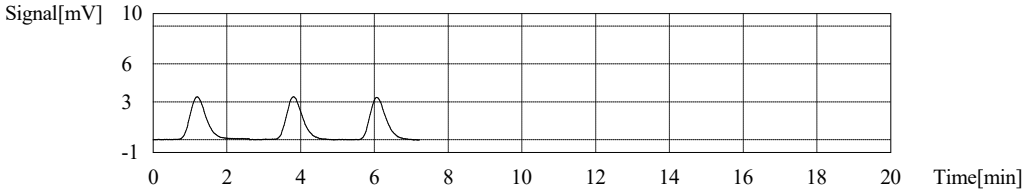
| Type | Anal. | Manual Dilution | Result |
|---|---|---|---|
| Unknown | NPOC | 1.000 | NPOC:2.967mg/L |

1. Det

Anal.: NPOC

| No. | Area | Conc. | Inj. Vol. | Aut. Dil. | Ex. | Cal. Curve | Date / Time |
|---|---|---|---|---|---|---|---|
| 1 | 10.22 | 2.971mg/L | 50uL | 1.000 | | 09.20.2023.1.2023_09_20_12_39_24.cal | 9/25/2023 11:39:48 AM |
| 2 | 10.27 | 2.985mg/L | 50uL | 1.000 | | 09.20.2023.1.2023_09_20_12_39_24.cal | 9/25/2023 11:42:20 AM |
| 3 | 10.13 | 2.945mg/L | 50uL | 1.000 | | 09.20.2023.1.2023_09_20_12_39_24.cal | 9/25/2023 11:44:54 AM |

Mean Area 10.21
Mean Conc. 2.967mg/L




**Sample**

Sample Name: HS23091296-01MS
Sample ID:
Origin: 09.20.2023.1.cal
Status Completed
Chk. Result

| Type | Anal. | Manual Dilution | Result |
|---|---|---|---|
| Unknown | NPOC | 1.000 | NPOC:14.86mg/L |

1. Det

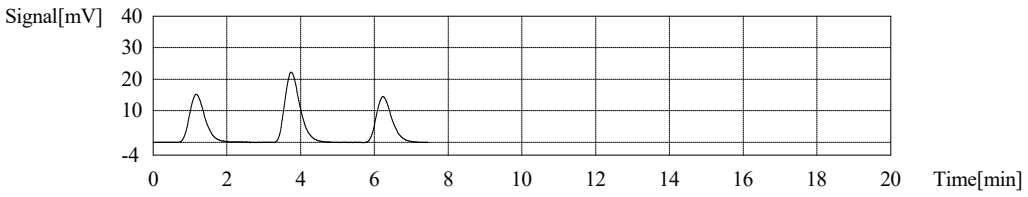
Anal.: NPOC

| No. | Area | Conc. | Inj. Vol. | Aut. Dil. | Ex. | Cal. Curve | Date / Time |
|---|---|---|---|---|---|---|---|
| 1 | 44.79 | 13.02mg/L | 50uL | 1.000 | | 09.20.2023.1.2023_09_20_12_39_24.cal | 9/25/2023 11:53:41 AM |
| 2 | 64.95 | 18.88mg/L | 50uL | 1.000 | | 09.20.2023.1.2023_09_20_12_39_24.cal | 9/25/2023 11:56:22 AM |
| 3 | 43.63 | 12.68mg/L | 50uL | 1.000 | | 09.20.2023.1.2023_09_20_12_39_24.cal | 9/25/2023 11:59:01 AM |

# TOC-Control L Report



Mean Area 51.12
Mean Conc. 14.86mg/L




**Sample**

Sample Name: CCV
Sample ID: 322147105
Origin: 09.20.2023.1.cal
Status Completed
Chk. Result

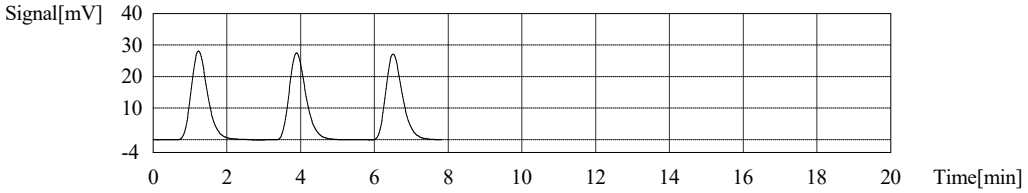
| Type | Anal. | Manual Dilution | Result |
|---|---|---|---|
| Unknown | NPOC | 1.000 | NPOC:25.35mg/L |

1. Det

Anal.: NPOC

| No. | Area | Conc. | Inj. Vol. | Aut. Dil. | Ex. | Cal. Curve | Date / Time |
|---|---|---|---|---|---|---|---|
| 1 | 87.90 | 25.55mg/L | 50uL | 1.000 | | 09.20.2023.1.2023_09_20_12_39_24.cal | 9/25/2023 1:00:41 PM |
| 2 | 87.56 | 25.45mg/L | 50uL | 1.000 | | 09.20.2023.1.2023_09_20_12_39_24.cal | 9/25/2023 1:03:34 PM |
| 3 | 86.20 | 25.06mg/L | 50uL | 1.000 | | 09.20.2023.1.2023_09_20_12_39_24.cal | 9/25/2023 1:06:20 PM |

Mean Area 87.22
Mean Conc. 25.35mg/L




**Sample**

Sample Name: CCB
Sample ID:
Origin: 09.20.2023.1.cal
Status Completed
Chk. Result

| Type | Anal. | Manual Dilution | Result |
|---|---|---|---|
| Unknown | NPOC | 1.000 | NPOC:0.2053mg/L |

1. Det

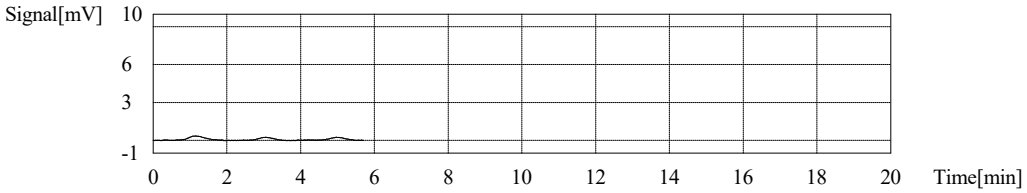
Anal.: NPOC

| No. | Area | Conc. | Inj. Vol. | Aut. Dil. | Ex. | Cal. Curve | Date / Time |
|---|---|---|---|---|---|---|---|
| 1 | 0.9268 | 0.2694mg/L | 50uL | 1.000 | | 09.20.2023.1.2023_09_20_12_39_24.cal | 9/25/2023 1:14:24 PM |
| 2 | 0.6306 | 0.1833mg/L | 50uL | 1.000 | | 09.20.2023.1.2023_09_20_12_39_24.cal | 9/25/2023 1:16:32 PM |
| 3 | 0.5617 | 0.1633mg/L | 50uL | 1.000 | | 09.20.2023.1.2023_09_20_12_39_24.cal | 9/25/2023 1:18:40 PM |

# TOC-Control L Report

2023_09_25_001.tlx

| | |
|---|---|
| Mean Area | 0.7064 |
| Mean Conc. | 0.2053mg/L |



# HS23091132 E2300864 PERCH Level IV Report

ALS WO# HS23091132

September 21, 2023 Service Request No:E2300864

James Guin
ALS Environmental - US
10450 Stancliff Rd #210
Houston, TX 77099

**Laboratory Results for: HS23091132**

Dear James,

Enclosed are the results of the sample(s) submitted to our laboratory September 20, 2023
For your reference, these analyses have been assigned our service request number **E2300864.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current TNI standards, where applicable, and except as noted in the laboratory case narrative provided. All results are intended to be considered in their entirety and ALS Environmental is not responsible for use of less than the complete final report. Results apply only to the items submitted to the laboratory, as received for analysis. In accordance with the current TNI Standard, a statement on the estimated uncertainty of measurement of any quantitative analysis will be supplied upon request.

Please contact me if you have any questions. My extension is 2190. You may also contact me via email at hussam.kelany@alsglobal.com.

Respectfully submitted,

**ALS Group USA, Corp. dba ALS Environmental**

H Kelany

Hussam Kelany
Project Manager

ADDRESS 10450 Stancliff Rd., Suite 210, Houston, TX 77099
PHONE +1 281 530 5656 | FAX +1 281 530 5887
ALS Group USA, Corp.
dba ALS Environmental

# Certificate of Analysis

**ALS Environmental - Houston Specialties Laboratory**
10450 Stancliff Rd., Suite 210, Houston TX 77099
Phone (281)530-5656 Fax (281)530-5887
www.alsglobal.com

| | | | |
|---|---|---|---|
| **Client:** | ALS Environmental - US | **Service Request No.:** | E2300864 |
| **Project:** | HS23091132 | **Date Received:** | 09/20/23 |
| **Sample Matrix:** | Water | | |

## CASE NARRATIVE

All analyses were performed in adherence to the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier IV. When appropriate to the method, method blank results have been reported with each analytical test.

### Sample Receipt

Two samples were received for analysis at ALS Environmental in Houston on 09/20/23.

The samples were received in good condition and are consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

### Data Validation Notes and Discussion

**Precision and Accuracy:**

EQ2300460: Laboratory Control Spike/Duplicate Laboratory Control Spike (LCS/DLCS) samples were analyzed and reported in lieu of a MS/MSD for this extraction batch.

*The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and ALS Environmental (ALS) is not responsible for utilization of less than the complete report.*

*Use of ALS group USA Corp dba ALS Environmental (ALS)'s Name. Client shall not use ALS's name or trademark in any marketing or reporting materials, press releases or in any other manner ("Materials") whatsoever and shall not attribute to ALS any test result, tolerance or specification derived from ALS's data ("Attribution") without ALS's prior written consent, which may be withheld by ALS for any reason in its sole discretion. To request ALS's consent, Client shall provide copies of the proposed Materials or Attribution and describe in writing Client's proposed use of such Materials or Attribution. If ALS has not provided written approval of the Materials or Attribution within ten (10) days of receipt from Client, Client's request to use ALS's name or trademark in any Materials or Attribution shall be deemed denied. ALS may, in its discretion, reasonably charge Client for its time in reviewing Materials or Attribution requests. Client acknowledges and agrees that the unauthorized use of ALS's name or trademark may cause ALS to incur irreparable harm for which the recovery of money damages will be inadequate. Accordingly, Client acknowledges and agrees that a violation shall justify preliminary injunctive relief. For questions contact the laboratory.*

**Client:** ALS Environmental - US **Service Request:**E2300864
**Project:** HS23091132

## SAMPLE CROSS-REFERENCE

| SAMPLE # | CLIENT SAMPLE ID | DATE | TIME |
|---|---|---|---|
| E2300864-001 | LH18/24-SP650_091923_BIX | 9/19/2023 | 1300 |
| E2300864-002 | LH18/24-SP650_091923_AIX | 9/19/2023 | 1300 |

# Service Request Summary

**Folder #:** **E2300864**
Client Name: ALS Environmental - US
Project Name: HS23091132
Project Number:

**Report To:** James Guin
ALS Environmental - US
10450 Stancliff Rd #210
Houston, TX 77099
USA
Phone Number: 281-530-5656
Cell Number:
Fax Number:
E-mail: james.guin@alsglobal.com

Project Chemist: Hussam Kelany
Originating Lab: HOUSTON
Logged By: CGRANDITS
Date Received: 09/20/23
Internal Due Date: 9/21/2023
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS23091132
EDD: BASIC_WQC_CASNo, EQUIS APTIM LONGHORN EFWEDD

2 120 mL-Plastic Bottle Natural WM Unpreserved
**Location:** EHRMS-AirArch 1
**Pressure Gas:**
**Rush**

| Lab Samp No. | Client Samp No | Matrix | Collected | HOUSTON<br>ClO4 DOD/6850 |
|---|---|---|---|---|
| E2300864-001 | LH18/24-SP650_091923_BIX | Water | 09/19/23 1300 | **IV** |
| E2300864-002 | LH18/24-SP650_091923_AIX | Water | 09/19/23 1300 | **IV** |

# Service Request Summary

**Folder #:** **E2300864**
Client Name: ALS Environmental - US
Project Name: HS23091132
Project Number:

**Report To:** James Guin
ALS Environmental - US
10450 Stancliff Rd #210
Houston, TX 77099
USA
Phone Number: 281-530-5656
Cell Number:
Fax Number:
E-mail: james.guin@alsglobal.com

Project Chemist: Hussam Kelany
Originating Lab: HOUSTON
Logged By: CGRANDITS
Date Received: 09/20/23
Internal Due Date: 9/21/2023
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS23091132
EDD: BASIC_WQC_CASNo, EQUIS APTIM LONGHORN EFWEDD

2 120 mL-Plastic Bottle Natural WM Unpreserved
**Location:** EHRMS-AirArch 1
**Pressure Gas:**
**Rush**

## Test Comments:

| Group | Test/Method | Samples | Comments |
|---|---|---|---|
| Semivoa GCMS | ClO4 DOD/6850 | 2 | Level IV due 9/27 |

# Data Qualifiers

## Lab Standard

| | |
|---|---|
| + | Possible Tedlar bag artifact. |
| A | TIC is a suspected aldol-condensation product |
| B | Analyte found in the associated method blank as well as in the sample. |
| BC | Reported results are not blank corrected. |
| BH | The back section of the tube yielded higher results than the front. |
| BT | Results indicated possible breakthrough; back section >=10% front section. |
| C | Result identification confirmed. |
| D | Compound identified in an analysis at a secondary dilution factor |
| D | Spike was diluted out |
| DE | Reported results are corrected for desorption efficiency. |
| E | Estimated value. Concentration above calibration range |
| E | The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample. |
| F | The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard. |
| H | The chromatographic fingerprint of the sample resembles a petroleum product but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard. |
| H1 | Sample analysis performed past holding time. See case narrative. |
| H2 | Initial analysis within holding time. Reanalysis for the required dilution was past holding time. |
| H3 | Sample was received and analyzed past holding time. |
| H4 | Sample was extracted past required extraction holding time, but analyzed within analysis holding time. See case narrative. |
| I | (Auto) The reference ion ratio was outside acceptance criteria, which may indicate a potential bias to this result. |
| I | Internal standard not within the specified limits. See case narrative. |
| I | The reference ion ratio was outside acceptance criteria, which may indicate a potential bias to this result. |
| J | Estimated Value. Concentration found below MRL. |
| K | A deflection in the QC ion may indicate interference with the quantitation of this ion. The concentration of this analyte should be considered as an estimate. |
| K | Analyte was detected above the method reporting limit prior to normalization. |
| K | The reference ion ratio was outside acceptance criteria, which may indicate a potential bias to this result. |
| L | The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard. |
| L1 | Laboratory control sample recovery outside the specified limits; results may be biased high. |
| L2 | Laboratory control sample recovery outside the specified limits; results may be biased low. |
| L3 | Laboratory control sample recovery outside the specified limits. |
| M | Matrix interference; results may be biased high. |
| M | The duplicate injection precision not met. |

# Data Qualifiers

## Lab Standard

| | |
|---|---|
| M1 | Matrix interference due to coelution with a non-target compound; results may be biased high. |
| N | Presumptive evidence of a compound for TICs that have been identified based on a mass spectral library search. |
| N | The Matrix Spike sample recovery is not within control limits. See case narrative. |
| O | The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard. |
| P | Indicates chlorodiphenyl ether interference present at the retention time of the target compound. |
| P | Pesticide/Aroclor target analyte > 40% difference for detected concentrations between GC columns |
| Q | Indicates as estimated value because the P and P + 2 theoretical abundance ratio does not meet method criteria. |
| R | Duplicate Precision not met. |
| R1 | Duplicate precision not within the specified limits; however, the results are below the MRL and considered estimated. |
| S | Surrogate recovery not within specified limits. |
| S | The reported value was determined by the Method of Standard Additions (MSA). |
| T | Analyte is a tentatively identified compound, result is estimated. |
| U | Compound was analyzed for, but was not detected (ND). |
| V1 | The continuing calibration verification standard was outside (biased high) the specified limits for this compound. |
| V2 | The continuing calibration verification standard was outside (biased low) the specified limits for this compound. |
| W | Result quantified, but the corresponding peak was detected outside the generated retention time window. |
| W | The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance. |
| X | See case narrative. |
| Y | Recovery outside limits |
| Y | The chromatogram resembles a petroleum product but does not match the calibration standard. |
| Z | The chromatogram does not resemble a petroleum product. |
| i | The MRL/MDL has been elevated due to a matrix interference. |

# ALS Laboratory Group

**Acronyms**

| | |
|---|---|
| Cal | Calibration |
| Conc | CONCentration |
| Dioxin(s) | Polychlorinated dibenzo-p-dioxin(s) |
| EDL | Estimated Detection Limit |
| EMPC | Estimated Maximum Possible Concentration |
| Flags | Data qualifiers |
| Furan(s) | Polychlorinated dibenzofuran(s) |
| g | Grams |
| ICAL | Initial CALibration |
| ID | IDentifier |
| Ions | Masses monitored for the analyte during data acquisition |
| L | Liter (s) |
| LCS | Laboratory Control Sample |
| DLCS | Duplicate Laboratory Control Sample |
| MB | Method Blank |
| MCL | Method Calibration Limit |
| MDL | Method Detection Limit |
| mL | Milliliters |
| MS | Matrix Spiked sample |
| DMS | Duplicate Matrix Spiked sample |
| NO | Number of peaks meeting all identification criteria |
| PCDD(s) | Polychlorinated dibenzo-p-dioxin(s) |
| PCDF(s) | Polychlorinated dibenzofuran(s) |
| ppb | Parts per billion |
| ppm | Parts per million |
| ppq | Parts per quadrillion |
| ppt | Parts per trillion |
| QA | Quality Assurance |
| QC | Quality Control |
| Ratio | Ratio of areas from monitored ions for an analyte |
| % Rec. | Percent recovery |
| RPD | Relative Percent Difference |
| RRF | Relative Response Factor |
| RT | Retention Time |
| SDG | Sample Delivery Group |
| S/N | Signal-to-noise ratio |
| TEF | Toxicity Equivalence Factor |
| TEQ | Toxicity Equivalence Quotient |

10450 Stancliff Rd, Houston, TX 77099 | 281-530-5656 | www.alsglobal.com

## State Certifications, Accreditations, and Licenses

| Agency | Number | Expire Date |
|---|---|---|
| Arizona Department of Health Services | AZ0793_2024 | 5/27/2024 |
| Arkansas Department of Environmental Quality | 88-00356 | 3/27/2024 |
| California State Environmental Laboratory Accreditation Program | 2919 | 4/30/2024 |
| Department of Defense | L23-358 | 5/31/2025 |
| Department of Defense | L22-90 | 3/31/2024 |
| Florida Department of Health | E87611-38 | 6/30/2024 |
| Illinois Environmental Protection Agency | 2000322023-11 | 6/30/2024 |
| Kansas Department of Health and Environment | E-10352 2023-2024 | 7/31/2024 |
| Louisiana Department of Environmental Quality | 03087-2023 | 6/30/2024 |
| Louisiana Department of Health and Hospitals | LA028-2023 | 12/31/2023 |
| Maine Department of Health and Human Services | 2022017 | 6/5/2024 |
| Maryland Department of the Environment | 343-2023 | 6/30/2024 |
| Michigan Depratment of Environmental Quality | 9971-2023 | 4/30/2024 |
| Minnesota Department of Health | 2368363 | 12/31/2023 |
| Nebraska Department of Health and Human Services | NE-OS-25-13 | 4/30/2024 |
| Nevada Division of Environmental Protection | TX026932024-1 | 7/31/2024 |
| New Hampshire Environmental Laboratory Accreditation Program | 209423 | 4/24/2024 |
| New Jersey Department of Environmental Protection | TX008-2024 | 6/30/2024 |
| New York Department of Health | 11707 | 3/31/2024 |
| Oregon Environmental Laboratory Accreditation Program | TX200002-011 | 5/15/2024 |
| Pennsylvania Department of Environmental Protection | 68-03441-017 | 6/30/2024 |
| Perry Johnson Laboratory Accreditation | L22-91 | 3/31/2024 |
| Tennessee Department of Environment and Concervation | TN04016-2023 | 4/30/2024 |
| Texas Commision on Environmental Quality | T104704231-23-30 | 4/30/2024 |
| Utah Department of Health Environmental Laboratory Certification | TX026932023-14 | 7/31/2024 |
| Washington Department of Ecology | C819-22 | 11/14/2023 |

# Chain of Custody

**ALS Environmental - Houston Specialties Laboratory**
10450 Stancliff Rd., Suite 210, Houston TX 77099
Phone (281)530-5656 Fax (281)530-5887
www.alsglobal.com

10450 Stancliff Rd, Ste 210
Houston, TX 77099
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# Subcontract Chain of Custody

**SAMPLING STATE:** Dept of Defense **COC ID:** 23238

**SUBCONTRACT TO:**

ALS Environmental
10450 Stancliff RoadSuite 210
Houston, TX 77084

**Phone:** +1 281 530 5656

**CUSTOMER INFORMATION:**

| | |
|---|---|
| **Company:** | ALS Houston |
| **Contact:** | James Guin |
| **Address:** | 10450 Stancliff Rd, Ste 210 |
| **Phone:** | +1 281 530 5656 |
| **Email:** | James.Guin@alsglobal.com |
| **Alternate Contact:** | Jumoke M. Lawal |
| **Email:** | jumoke.lawal@alsglobal.com |

**INVOICE INFORMATION:**

| | |
|---|---|
| **Company:** | ALS Houston |
| **Contact:** | Accounts Payable |
| **Address:** | 10450 Stancliff Rd, Ste 210 |
| **Phone:** | +1 281 530 5656 |
| **Reference:** | HS23091132 |
| **TSR:** | Holly Tignac |

| | LAB SAMPLE ID | CLIENT SAMPLE ID | MATRIX | COLLECT DATE |
|---|---|---|---|---|
| | ANALYSIS REQUESTED | | | DUE DATE |
| 1. | **HS23091132-02** | **LH18/24-SP650_091923_BIX** | **Water** | **19 Sep 2023 13:00** |
| | 6850-Perch. DOD Level II & Level IV in separate pdf | | | 21 Sep 2023 |
| 2. | **HS23091132-03** | **LH18/24-SP650_091923_AIX** | **Water** | **19 Sep 2023 13:00** |
| | 6850-Perch. DOD Level II & Level IV in separate pdf | | | 21 Sep 2023 |

**Comments:** Please analyze for the analysis listed above.
Send report to the emails shown above.

**QC Level:** DOD IV (DoD Data Package)

E2300864 5
ALS Environmental - US
HS23091132

Relinquished By: PG Date/Time:

Received By: CG Date/Time: 9-20-23 1640

Cooler ID(s): Temperature(s):

# Cooler Receipt Form

ALS Environmental

Project Chemist H

Client/Project ALS

Thermometer ID IR1

Date/Time Received: 9.20.23 Initials: cg

Date/Time Logged in: 9.20.23 Initials cg

1. Method of delivery: ○ US Mail ○ Fed Ex ○ UPS ○ DHL ☒ ALS Courier ○ Client

2. Samples received in: ☒ Cooler ○ Box ○ Envelope ○ Other

3. Were custody seals on coolers? ○ Yes ☒ No
   Were they intact? ○ Yes ○ No ☒ N/A
   Were they signed and dated? ○ Yes ○ No ☒ N/A
   If yes, how many and where?

4. Packing Material: ○ Inserts ☒ Baggies ○ Bubble Wrap ○ Gel Packs ☒ Wet Ice ○ Sleeves ○ Other

5. Foreign or Regulated Soil? ○ Yes ○ No Location of Sampling:

| Cooler Tracking Number | COC ID | Date Opened | Time Opened | Opened By | Temp. °C | Temp Blank? |
|---|---|---|---|---|---|---|
| ~~blank~~ | | 9.20.23 | 1640 | cg | 3.1 | ☐ |
| | | | | | | ☐ |
| | | | | | | ☐ |
| | | | | | | ☐ |

6. Were custody papers properly filled out (ink, signed, dated, etc)? ☒ Yes ○ No
7. Did all bottles arrive in good condition (not broken, no signs of leakage)? ☒ Yes ○ No
8. Were all sample labels complete (i.e., sample ID, analysis, preservation, etc)? ☒ Yes ○ No
9. Were appropriate bottles/containers and volumes received for the requested tests? ☒ Yes ○ No
10. Did sample labels and tags agree with custody documents? ☒ Yes ○ No

Notes, Discrepancies, & Resolutions:

Service request Label: E2300864 5
ALS Environmental - US
HS23091132



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Houston, TX 77099
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**F:** +1 281 530 5887
**www.alsglobal.com**

# SAMPLE ACCEPTANCE POLICY

This policy outlines the criteria samples must meet to be accepted by ALS Environmental – Houston HRMS.

**Cooler Custody Seals (desirable, mandatory if specified in SAP):**

- ✓ Intact on outside of cooler, signed and dated

**Chain-of-Custody (COC) documentation (mandatory):**

The following is required on each COC:

- ✓ Sample ID, the location, date and time of collection, collector's name, preservation type, sample type, and any other special remarks concerning the sampleThe COC must be completed in ink.
- ✓ Signature and date of relinquishing party.

In the absence of a COC at sample receipt, the COC will be requested from the client.

**Sample Integrity (mandatory):**

Samples are inspected upon arrival to ensure that sample integrity was not compromised during transfer to the laboratory.

- ✓ Sample containers must arrive in good condition (not broken or leaking).
- ✓ Samples must be labeled appropriately, including Sample IDs, and requested test using durable labels and indelible ink.
- ✓ The correct type of sample bottle must be used for the method requested.
- ✓ An appropriate sample volume, or weight, must be received.
- ✓ Sample IDs and number of containers must reconcile with the COC.
- ✓ Samples must be received within the method defined holding time.

**Temperature Requirement (varies by sample matrix):**

- ✓ Aqueous and Non-aqueous samples must be shipped and stored cold, at 0 to 6ºC.
- ✓ Tissue samples must be shipped and stored frozen, at -20 to -10ºC.
- ✓ Air samples are shipped and stored cold, at 0 to 6ºC
- ✓ The sample temperature must be recorded on the COC

All cooler inspections are documented on the Cooler Receipt Form (CRF). A separate CRF is completed for each service request. Any samples not meeting the above criteria are noted on the CRF and the Project Manager notified. The Project Manager must resolve any sample integrity issues with the client prior to proceeding with the analysis. Such resolutions are documented in writing and filed with the project folder. Data associated with samples received outside of this acceptance policy will be qualified on the case narrative of the final report

# Preparation Information Benchsheets

**ALS Environmental - Houston Specialties Laboratory**
10450 Stancliff Rd., Suite 210, Houston TX 77099
Phone (281)530-5656 Fax (281)530-5887
www.alsglobal.com

# *Preparation Information Benchsheet*

**Prep Run#:** 426900 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
**Team:** Semivoa GCMS/XMI **Prep Method:** **Prep Date/Time:** 9/21/23 08:00

| # | Lab Code | Client ID | B# | Method /Test | pH | Cl | Matrix | Amt. Ext. | Sample Description |
|---|---|---|---|---|---|---|---|---|---|
| 1 | E2300855-001 | MA01MW004-S | .01 | 6850/ClO4 DOD | | | Ground Water | 10mL | |
| 2 | E2300864-001 | LH18/24-SP650_091923_BIX | .01 | 6850/ClO4 DOD | | | Water | 10mL | |
| 3 | E2300864-002 | LH18/24-SP650_091923_AIX | .01 | 6850/ClO4 DOD | | | Water | 10mL | |
| 4 | EQ2300460-01 | MB | | 6850/ClO4 | | | Liquid | 10mL | |
| 5 | EQ2300460-02 | LCS | | 6850/ClO4 | | | Liquid | 10mL | |
| 6 | EQ2300460-03 | DLCS | | 6850/ClO4 | | | Liquid | 10mL | |
| 7 | K2310422-001 | LGAC-INF-091823 | .01 | 6850/ClO4 | | | Water | 10mL | |
| 8 | K2310422-002 | LGAC-INT1-091823 | .01 | 6850/ClO4 | | | Water | 10mL | |
| 9 | K2310422-003 | LGAC-INT2-091823 | .01 | 6850/ClO4 | | | Water | 10mL | |

## Spiking Solutions

Name: Perchlorate Intermediate Stock1 Inventory ID 230342 Logbook Ref: Perchlorate (1st Source) Expires On: 03/07/2024

EQ2300460-02 1.00µL EQ2300460-02 1.00µL EQ2300460-03 1.00µL EQ2300460-03 1.00µL

Name: Perchlorate Internal Standard 1ug/mL Inventory ID 230372 Logbook Ref: Perchlorate Internal Standard Expires On: 04/30/2024

E2300855-001 100.00µL E2300864-001 100.00µL E2300864-002 100.00µL EQ2300460-01 100.00µL EQ2300460-01 100.00µL EQ2300460-02 100.00µL
EQ2300460-02 100.00µL EQ2300460-03 100.00µL EQ2300460-03 100.00µL K2310422-001 100.00µL K2310422-002 100.00µL K2310422-003 100.00µL

## Preparation Steps

Step: Preparation
Started: 9/21/23 08:00
Finished: 9/21/23 09:00
By: XMI
Comments

Comments: _____

Reviewed By: _____ Date: _____

Chain of Custody

Relinquished By: _____ Date: _____ Extracts Examined

Received By: _____ Date: _____ Yes No

# Analytical Results

**ALS Environmental - Houston Specialties Laboratory**
10450 Stancliff Rd., Suite 210, Houston TX 77099
Phone (281)530-5656 Fax (281)530-5887
www.alsglobal.com

**ALS Group USA, Corp. dba ALS Environmental**

Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | ALS Environmental - US | **Service Request:** | E2300864 |
| **Project:** | HS23091132 | **Date Collected:** | 9/19/23 1300 |
| **Sample Matrix:** | Water | **Date Received:** | 9/20/23 |
| **Sample Name:** | LH18/24-SP650_091923_BIX | **Units:** | µg/L |
| **Lab Code:** | E2300864-001 | **Basis:** | NA |

**Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry**

**Analytical Method:** 6850

| Analyte Name | Result | Q | LOQ | LOD | MDL | Dilution Factor | Date Extracted | Date Analyzed | Extraction Lot | Analysis Lot | Note |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | **9.17** | | 0.100 | 0.0500 | 0.0250 | 1 | 9/21/23 | 9/21/23 10:25 | 426900 | 817943 | |

**ALS Group USA, Corp. dba ALS Environmental**

Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | ALS Environmental - US | **Service Request:** | E2300864 |
| **Project:** | HS23091132 | **Date Collected:** | 9/19/23 1300 |
| **Sample Matrix:** | Water | **Date Received:** | 9/20/23 |
| **Sample Name:** | LH18/24-SP650_091923_AIX | **Units:** | µg/L |
| **Lab Code:** | E2300864-002 | **Basis:** | NA |

**Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry**

**Analytical Method:** 6850

| Analyte Name | Result | Q | LOQ | LOD | MDL | Dilution Factor | Date Extracted | Date Analyzed | Extraction Lot | Analysis Lot | Note |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | **4.69** | | 0.100 | 0.0500 | 0.0250 | 1 | 9/21/23 | 9/21/23 10:30 | 426900 | 817943 | |

**ALS Group USA, Corp. dba ALS Environmental**

Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | ALS Environmental - US | **Service Request:** | E2300864 |
| **Project:** | HS23091132 | **Date Collected:** | NA |
| **Sample Matrix:** | Water | **Date Received:** | NA |
| **Sample Name:** | Method Blank | **Units:** | µg/L |
| **Lab Code:** | EQ2300460-01 | **Basis:** | NA |

**Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry**

**Analytical Method:** 6850

| Analyte Name | Result | Q | LOQ | LOD | MDL | Dilution Factor | Date Extracted | Date Analyzed | Extraction Lot | Analysis Lot | Note |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | ND | U | 0.100 | 0.0500 | 0.0250 | 1 | 9/21/23 | 9/21/23 10:02 | 426900 | 817943 | |

# Accuracy & Precision

**ALS Environmental - Houston Specialties Laboratory**
10450 Stancliff Rd., Suite 210, Houston TX 77099
Phone (281)530-5656 Fax (281)530-5887
www.alsglobal.com

**ALS Group USA, Corp. dba ALS Environmental**

QA/QC Report

**Client:** ALS Environmental - US
**Project:** HS23091132
**Sample Matrix:** Water

**Service Request:** E2300864
**Date Analyzed:** 9/21/23

## Lab Control Sample Summary
## Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

**Analytical Method:** 6850
**Prep Method:**

**Units:** µg/L
**Basis:** NA

**Extraction Lot:** 426900

| | Lab Control Sample EQ2300460-02 | | | Duplicate Lab Control Sample EQ2300460-03 | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Analyte Name** | **Result** | **Spike Amount** | **% Rec** | **Result** | **Spike Amount** | **% Rec** | **% Rec Limits** | **RPD** | **RPD Limit** |
| Perchlorate | 0.113 | 0.100 | 113 | 0.100 | 0.100 | 100 | 84 - 119 | 12 | 15 |

**Results flagged with an asterisk (*) indicate values outside control criteria.**

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

**ALS Group USA, Corp. dba ALS Environmental**

Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | ALS Environmental - US | **Service Request:** | E2300864 |
| **Project:** | HS23091132 | **Date Collected:** | NA |
| **Sample Matrix:** | Water | **Date Received:** | NA |
| **Sample Name:** | Lab Control Sample | **Units:** | µg/L |
| **Lab Code:** | EQ2300460-02 | **Basis:** | NA |

**Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry**

**Analytical Method:** 6850

| Analyte Name | Result | Q | LOQ | LOD | MDL | Dilution Factor | Date Extracted | Date Analyzed | Extraction Lot | Analysis Lot | Note |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | **0.113** | | 0.100 | 0.0500 | 0.0250 | 1 | 9/21/23 | 9/21/23 10:08 | 426900 | 817943 | |

**ALS Group USA, Corp. dba ALS Environmental**

Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | ALS Environmental - US | **Service Request:** | E2300864 |
| **Project:** | HS23091132 | **Date Collected:** | NA |
| **Sample Matrix:** | Water | **Date Received:** | NA |
| **Sample Name:** | Duplicate Lab Control Sample | **Units:** | µg/L |
| **Lab Code:** | EQ2300460-03 | **Basis:** | NA |

**Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry**

**Analytical Method:** 6850

| Analyte Name | Result | Q | LOQ | LOD | MDL | Dilution Factor | Date Extracted | Date Analyzed | Extraction Lot | Analysis Lot | Note |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | **0.100** | | 0.100 | 0.0500 | 0.0250 | 1 | 9/21/23 | 9/21/23 11:01 | 426900 | 817943 | |

# Initial Calibration

**ALS Environmental - Houston HRMS**
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

**20230802**

# Injection Log

LCMS01 -Shimadzu 8050

**1st Review: XM**
**2nd Review: KN**

**ICAL Date:** 8/2/2023
**Cal. Std. xp:** 03/07/2024
**ICAL ID:** EC2300012

**Mobile Phases : A:**20mM ammonium acetate in water 230388 **B:**Acetonitrile 229152

| | Sample Name | | File Name | Acquisition Method | Dilution | Comments | Date/Time |
|---|---|---|---|---|---|---|---|
| 1 | IB | | 2230802-001 | Perchlorate6850c.lcm | 1x | | 8/2/2023 13:05 |
| 2 | IB | | 2230802-002 | Perchlorate6850c.lcm | 1x | | 8/2/2023 13:11 |
| 3 | Perchlorate ICAL 1 | | 2230802-003 | Perchlorate6850c.lcm | 1x | 230373 | 8/2/2023 13:17 |
| 4 | Perchlorate ICAL 2 | | 2230802-004 | Perchlorate6850c.lcm | 1x | 230375 | 8/2/2023 13:23 |
| 5 | Perchlorate ICAL 3 | | 2230802-005 | Perchlorate6850c.lcm | 1x | 230376 | 8/2/2023 13:28 |
| 6 | Perchlorate ICAL 4 | | 2230802-006 | Perchlorate6850c.lcm | 1x | 230377 | 8/2/2023 13:34 |
| 7 | Perchlorate ICAL 5 | | 2230802-007 | Perchlorate6850c.lcm | 1x | 230378 | 8/2/2023 13:39 |
| 8 | Perchlorate ICAL 6 | | 2230802-008 | Perchlorate6850c.lcm | 1x | 230379 | 8/2/2023 13:45 |
| 9 | Perchlorate ICAL 7 | | 2230802-009 | Perchlorate6850c.lcm | 1x | 230380 | 8/2/2023 13:50 |
| 10 | Perchlorate ICAL 8 | | 2230802-010 | Perchlorate6850c.lcm | 1x | 230381 | 8/2/2023 13:56 |
| 11 | Perchlorate ICAL 9 | | 2230802-011 | Perchlorate6850c.lcm | 1x | 230382 | 8/2/2023 14:02 |
| 12 | Perchlorate ICAL 10 | | 2230802-012 | Perchlorate6850c.lcm | 1x | 230383 | 8/2/2023 14:07 |
| 13 | PerchlorateICV | | 2230802-013 | Perchlorate6850c.lcm | 1x | 230385 | 8/2/2023 14:19 |

# *Initial Calibration - Detailed Report*

**Calibration ID:** EC2300012 **Instrument ID:** E-LCMS-01
**Column Name:** 1

| # | Lab Code | Sample Name | File Location | Aquisition Date |
|---|---|---|---|---|
| 01 | EC2300012-01 | Perchlorate ICAL 1 | 2230802-003 | 08/02/2023 13:17 |
| 02 | EC2300012-02 | Perchlorate ICAL 2 | 2230802-004 | 08/02/2023 13:23 |
| 03 | EC2300012-03 | Perchlorate ICAL 3 | 2230802-005 | 08/02/2023 13:28 |
| 04 | EC2300012-04 | Perchlorate ICAL 4 | 2230802-006 | 08/02/2023 13:34 |
| 05 | EC2300012-05 | Perchlorate ICAL 5 | 2230802-007 | 08/02/2023 13:39 |
| 06 | EC2300012-06 | Perchlorate ICAL 6 | 2230802-008 | 08/02/2023 13:45 |
| 07 | EC2300012-07 | Perchlorate ICAL 7 | 2230802-009 | 08/02/2023 13:50 |
| 08 | EC2300012-08 | Perchlorate ICAL 8 | 2230802-010 | 08/02/2023 13:56 |
| 09 | EC2300012-09 | Perchlorate ICAL 9 | 2230802-011 | 08/02/2023 14:02 |
| 10 | EC2300012-10 | Perchlorate ICAL 10 | 2230802-012 | 08/02/2023 14:07 |

**Analyte** **Curve Fit** **Weighting**

**Perchlorate** **Average RF** **RSD = 2.086** **Average RF = 0.1475**

| # | Amount | RF | # | Amount | RF | # | Amount | RF | # | Amount | RF |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 01 | 0.1000 | 0.1428 | 02 | 0.5000 | 0.1421 | 03 | 0.7000 | 0.1457 | 04 | 1.0000 | 0.149 |
| 05 | 2.0000 | 0.1515 | 06 | 5.0000 | 0.1475 | 07 | 10.0000 | 0.1503 | 08 | 20.0000 | 0.1477 |
| 09 | 30.0000 | 0.1485 | 10 | 50.0000 | 0.1496 | | | | | | |

**Analyte**

**Perchlorate** RSE = 2.09

| # | Amount | Calculated Conc | %D | # | Amount | Calculated Conc | %D | # | Amount | Calculated Conc | %D |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 01 | 0.1000 | 0.0968 | -3.2 | 02 | 0.5000 | 0.482 | -3.6 | 03 | 0.7000 | 0.692 | -1.2 |
| 04 | 1.0000 | 1.01 | 1.0 | 05 | 2.0000 | 2.05 | 2.7 | 06 | 5.0000 | 5.00 | -0.0 |
| 07 | 10.0000 | 10.2 | 1.9 | 08 | 20.0000 | 20.0 | 0.2 | 09 | 30.0000 | 30.2 | 0.7 |
| 10 | 50.0000 | 50.7 | 1.4 | | | | | | | | |

# *Initial Calibration Verification Summary Report*

| | | | |
|---|---|---|---|
| **Calibration ID:** | EC2300012 | **Instrument ID:** | E-LCMS-01 |
| **Datafile ID:** | 2230802-013 | **Column Name:** | 1 |

| Analyte | Lab Code | Type | Curve Fit | True Value | Calc Conc | Units | Result | Criteria |
|---|---|---|---|---|---|---|---|---|
| Perchlorate | EC2300012-11 | T | Average RF | 10 | 10.670 | ng/mL | 6.7 | <= 15 |

# Insight Report

Printed at 8/3/2023 9:30:46 AM

Method File: I:\LCMS01\DATA\20230802\20230802ICAL.lcm
Project File: I:\LCMS01\DATA\20230802\no use\20230802ICAL.damlp

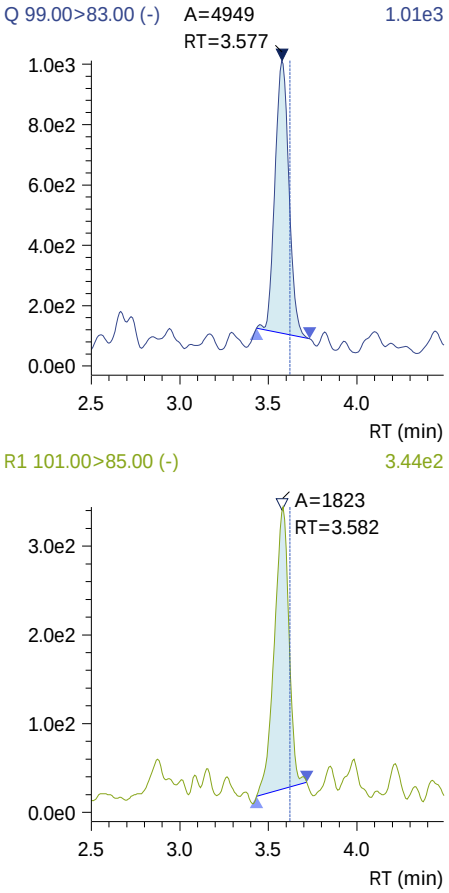
## Perchlorate ICAL 1

Sample ID: Perchlorate ICAL 1
Date Acquired: 8/2/2023 1:17:39 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230802\2230802-003.lcd
Vial: 1 | Inj. Volume: 10.0000uL | Tray: 1

| Name | Mode ID | Found RT | Area | ISTD Area | Conc. | Unit | Ref 1 m/z | Ref 1 Actual Ratio | Comment 1 |
|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | Auto | 3.577 | 4949 | 346538 | 0.0968 | ng/mL | 101.00 >85.00 | 36.83 | 21.29-39.54 |
| Sodium Perchlorate-18O4 _IS | Auto | 3.572 | 346538 | 346538 | 1.0000 | ng/mL | ---- | ---- | |

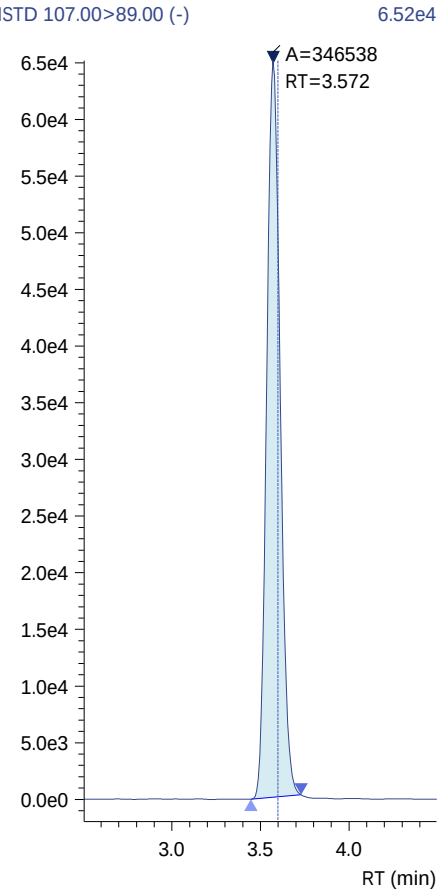
### Perchlorate

Conc 0.0968
R#1 36.83 (30.41)




### Sodium Perchlorate-18O4_IS

Conc 1.0000



# Insight Report

Printed at 8/3/2023 9:30:46 AM

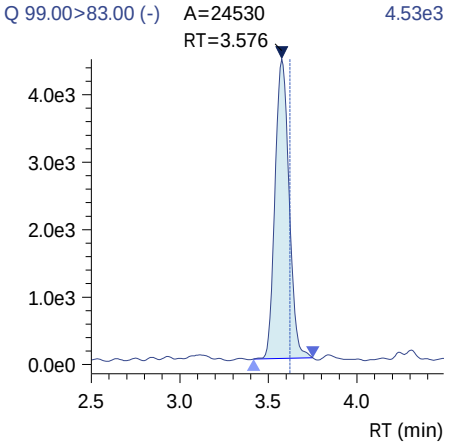
## Perchlorate ICAL 2

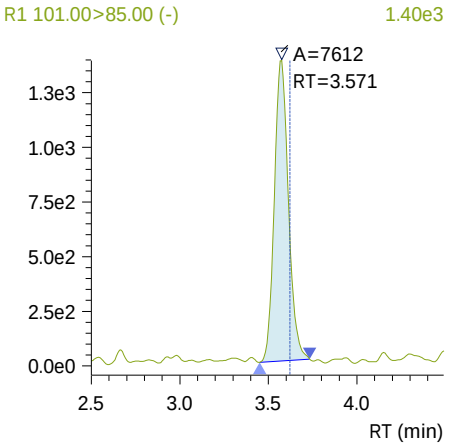
Sample ID: Perchlorate ICAL 2
Date Acquired: 8/2/2023 1:23:13 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230802\2230802-004.lcd
Vial: 2 | Inj. Volume: 10.0000uL | Tray: 1

| Name | Mode ID | Found RT | Area | ISTD Area | Conc. | Unit | Ref 1 m/z | Ref 1 Actual Ratio | Comment 1 |
|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | Auto | 3.576 | 24530 | 345149 | 0.4820 | ng/mL | 101.00 >85.00 | 31.03 | 21.29-39.54 |
| Sodium Perchlorate-18O4 _IS | Auto | 3.571 | 345149 | 345149 | 1.0000 | ng/mL | ---- | ---- | |

### Perchlorate

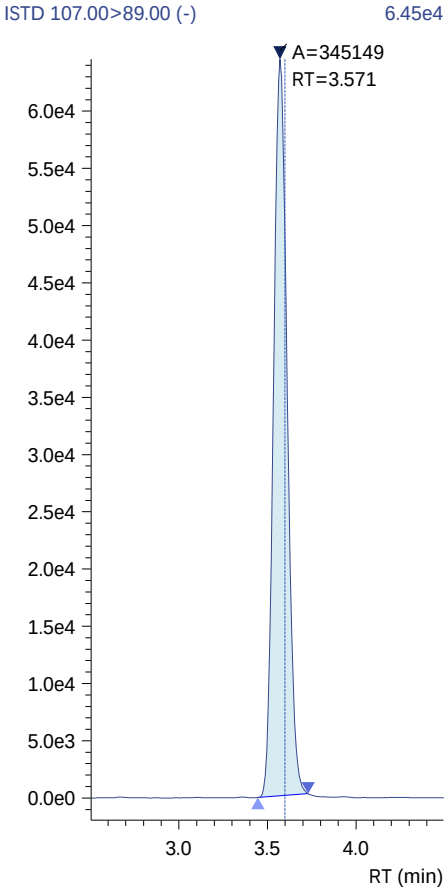
Conc 0.4820
R#1 31.03 (30.41)




### Sodium Perchlorate-18O4_IS

Conc 1.0000



# Insight Report

Printed at 8/3/2023 9:30:46 AM

## Perchlorate ICAL 3

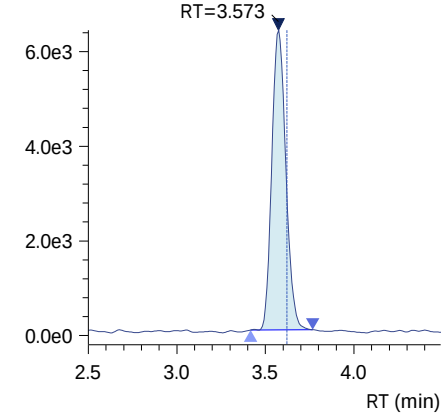
Sample ID: Perchlorate ICAL 3
Date Acquired: 8/2/2023 1:28:44 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230802\2230802-005.lcd
Vial: 3 | Inj. Volume: 10.0000uL | Tray: 1

| Name | Mode ID | Found RT | Area | ISTD Area | Conc. | Unit | Ref 1 m/z | Ref 1 Actual Ratio | Comment 1 |
|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | Auto | 3.573 | 34872 | 341974 | 0.6915 | ng/mL | 101.00 >85.00 | 27.14 | 21.29-39.54 |
| Sodium Perchlorate-18O4 _IS | Auto | 3.570 | 341974 | 341974 | 1.0000 | ng/mL | ---- | ---- | |

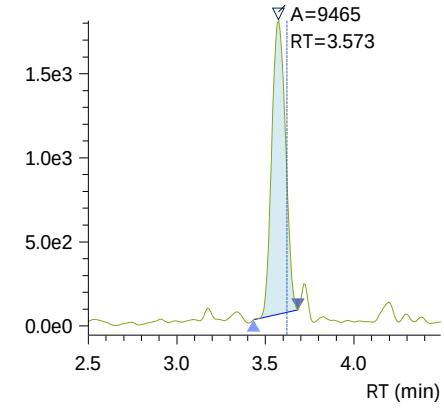
### Perchlorate

Conc 0.6915
R#1 27.14 (30.41)

Q 99.00>83.00 (-) A=34872 6.45e3



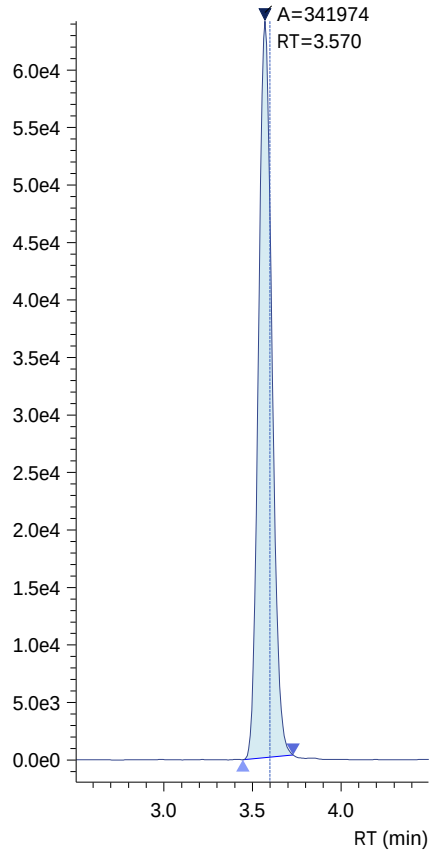

R1 101.00>85.00 (-) 1.82e3




### Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 6.42e4



# Insight Report

Printed at 8/3/2023 9:30:46 AM

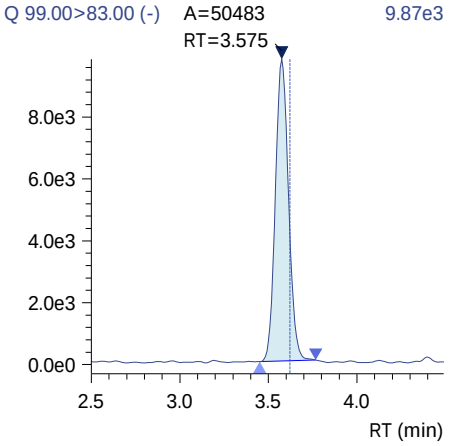
## Perchlorate ICAL 4

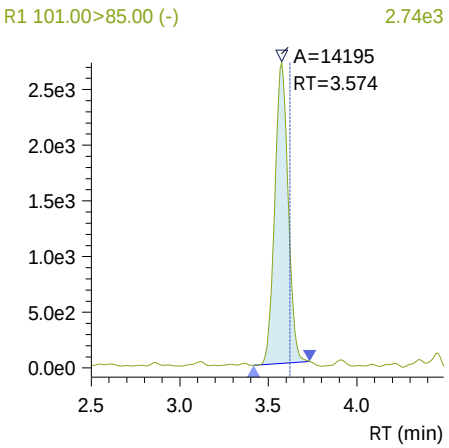
Sample ID: Perchlorate ICAL 4
Date Acquired: 8/2/2023 1:34:20 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230802\2230802-006.lcd
Vial: 4 | Inj. Volume: 10.0000uL | Tray: 1

| Name | Mode ID | Found RT | Area | ISTD Area | Conc. | Unit | Ref 1 m/z | Ref 1 Actual Ratio | Comment 1 |
|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | Auto | 3.575 | 50483 | 338838 | 1.0104 | ng/mL | 101.00 >85.00 | 28.12 | 21.29-39.54 |
| Sodium Perchlorate-18O4 _IS | Auto | 3.570 | 338838 | 338838 | 1.0000 | ng/mL | ---- | ---- | |

### Perchlorate

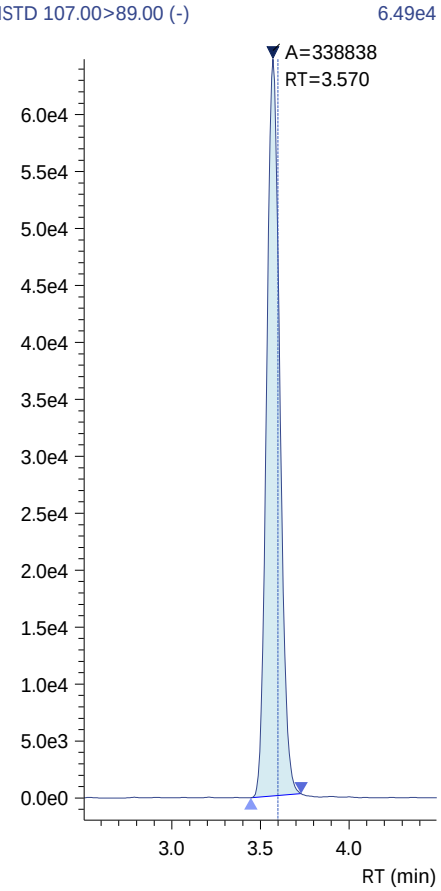
Conc 1.0104
R#1 28.12 (30.41)




### Sodium Perchlorate-18O4_IS

Conc 1.0000



# Insight Report

Printed at 8/3/2023 9:30:46 AM

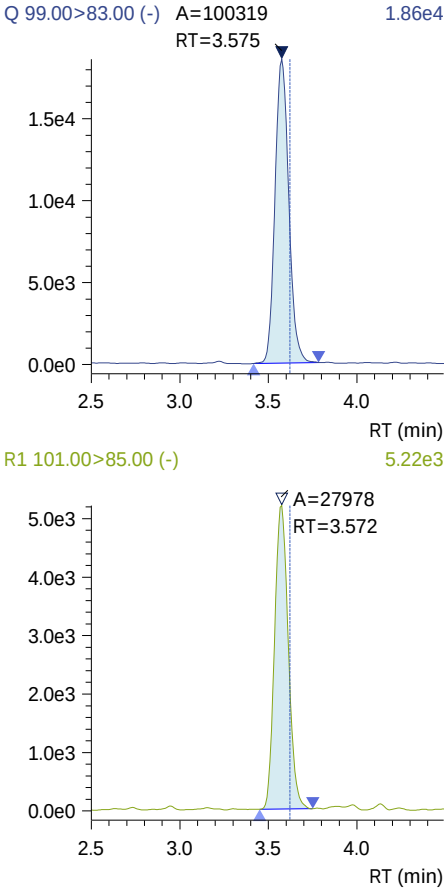
## Perchlorate ICAL 5

Sample ID: Perchlorate ICAL 5
Date Acquired: 8/2/2023 1:39:51 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230802\2230802-007.lcd
Vial: 5 | Inj. Volume: 10.0000uL | Tray: 1

| Name | Mode ID | Found RT | Area | ISTD Area | Conc. | Unit | Ref 1 m/z | Ref 1 Actual Ratio | Comment 1 |
|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | Auto | 3.575 | 100319 | 331124 | 2.0545 | ng/mL | 101.00 >85.00 | 27.89 | 21.29-39.54 |
| Sodium Perchlorate-18O4 _IS | Auto | 3.570 | 331124 | 331124 | 1.0000 | ng/mL | ---- | ---- | |

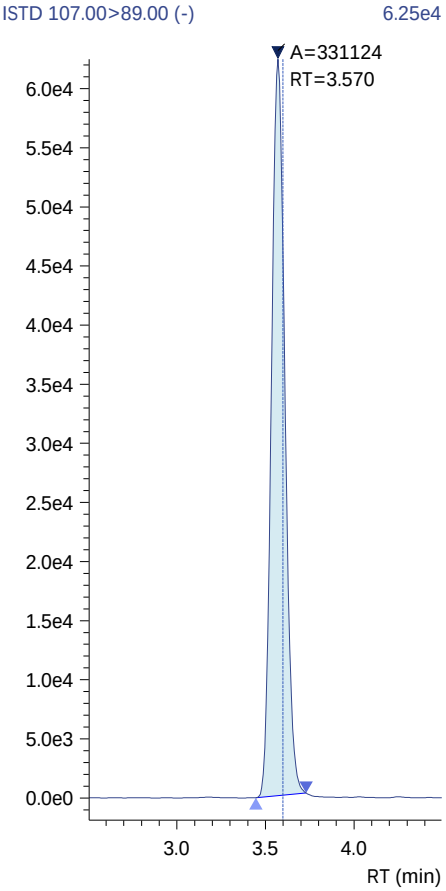
### Perchlorate

Conc 2.0545
R#1 27.89 (30.41)




### Sodium Perchlorate-18O4_IS

Conc 1.0000



# Insight Report



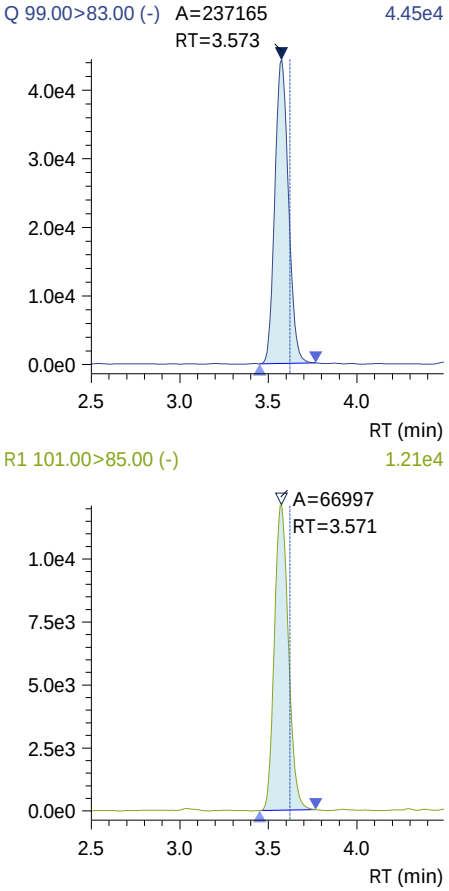
## Perchlorate ICAL 6

Sample ID: Perchlorate ICAL 6
Date Acquired: 8/2/2023 1:45:24 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230802\2230802-008.lcd
Vial: 6 | Inj. Volume: 10.0000uL | Tray: 1

| Name | Mode ID | Found RT | Area | ISTD Area | Conc. | Unit | Ref 1 m/z | Ref 1 Actual Ratio | Comment 1 |
|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | Auto | 3.573 | 237165 | 321666 | 5.0000 | ng/mL | 101.00 >85.00 | 28.25 | 21.29-39.54 |
| Sodium Perchlorate-18O4 _IS | Auto | 3.570 | 321666 | 321666 | 1.0000 | ng/mL | ---- | ---- | |

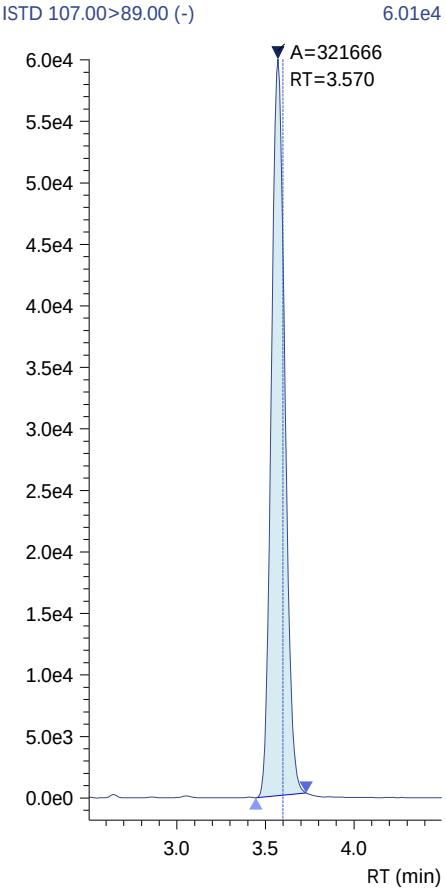
### Perchlorate

Conc 5.0000
R#1 28.25 (30.41)




### Sodium Perchlorate-18O4_IS

Conc 1.0000



# Insight Report

Printed at 8/3/2023 9:30:46 AM

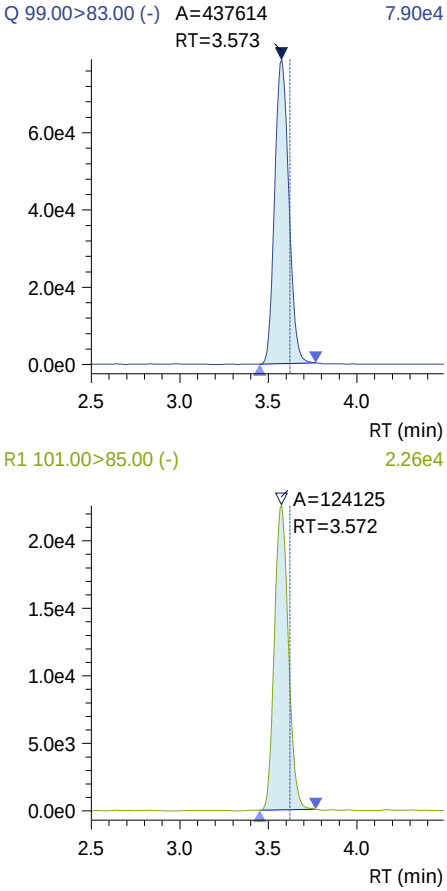
## Perchlorate ICAL 7

Sample ID: Perchlorate ICAL 7
Date Acquired: 8/2/2023 1:50:57 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230802\2230802-009.lcd
Vial: 7 | Inj. Volume: 10.0000uL | Tray: 1

| Name | Mode ID | Found RT | Area | ISTD Area | Conc. | Unit | Ref 1 m/z | Ref 1 Actual Ratio | Comment 1 |
|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | Auto | 3.573 | 437614 | 291215 | 10.1905 | ng/mL | 101.00 >85.00 | 28.36 | 21.29-39.54 |
| Sodium Perchlorate-18O4_IS | Auto | 3.570 | 291215 | 291215 | 1.0000 | ng/mL | ---- | ---- | |

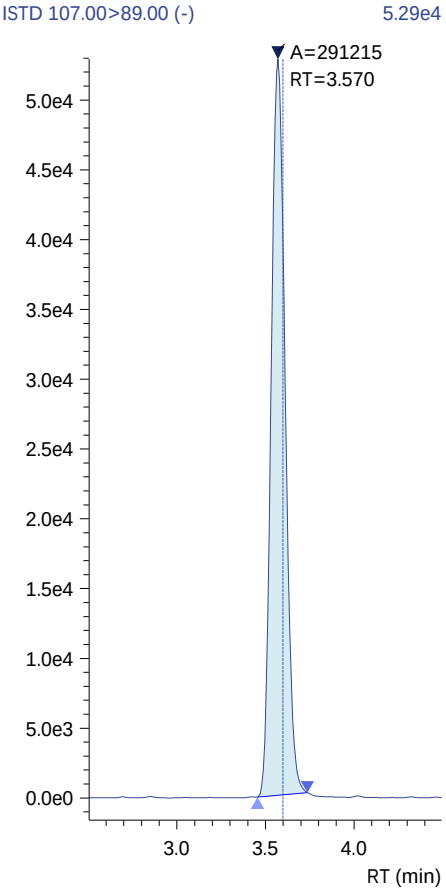
### Perchlorate

Conc 10.1905
R#1 28.36 (30.41)




### Sodium Perchlorate-18O4_IS

Conc 1.0000



# Insight Report

Printed at 8/3/2023 9:30:46 AM

## Perchlorate ICAL 8

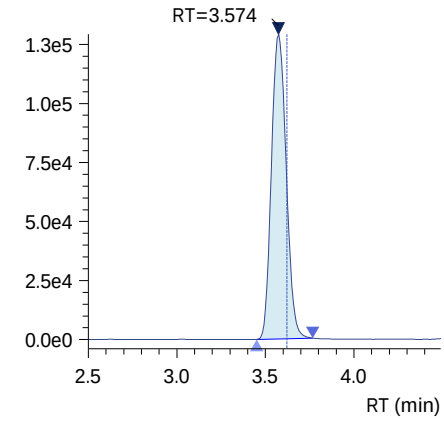
Sample ID: Perchlorate ICAL 8
Date Acquired: 8/2/2023 1:56:33 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230802\2230802-010.lcd
Vial: 8 | Inj. Volume: 10.0000uL | Tray: 1

| Name | Mode ID | Found RT | Area | ISTD Area | Conc. | Unit | Ref 1 m/z | Ref 1 Actual Ratio | Comment 1 |
|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | Auto | 3.574 | 749856 | 253829 | 20.03 36 | ng/mL | 101.00 >85.00 | 28.56 | 21.29-39.54 |
| Sodium Perchlorate-18O4 _IS | Auto | 3.569 | 253829 | 253829 | 1.0000 | ng/mL | ---- | ---- | |

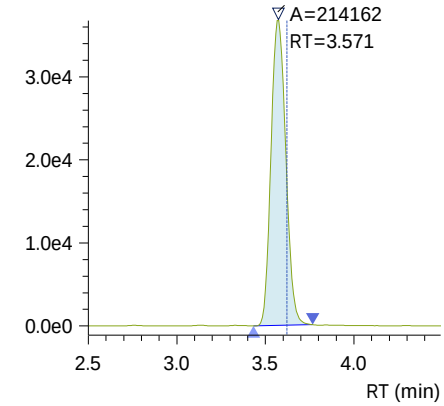
### Perchlorate

Conc 20.0336
R#1 28.56 (30.41)

Q 99.00>83.00 (-) A=749856 1.29e5



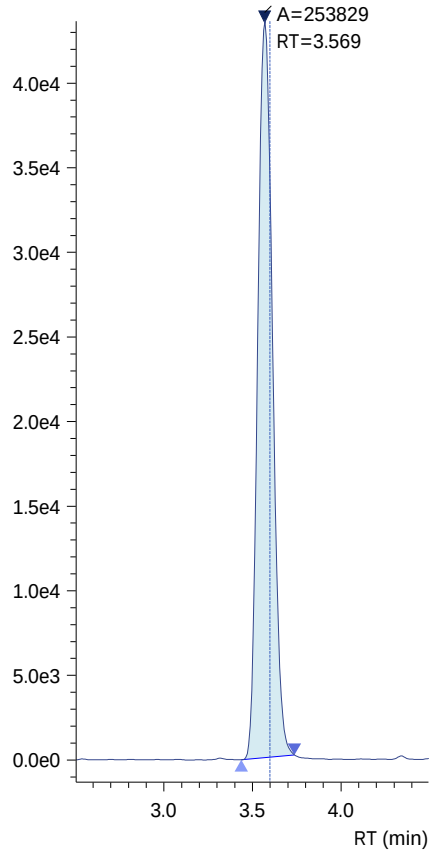

R1 101.00>85.00 (-) 3.68e4




### Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 4.37e4



# Insight Report

Printed at 8/3/2023 9:30:46 AM

## Perchlorate ICAL 9

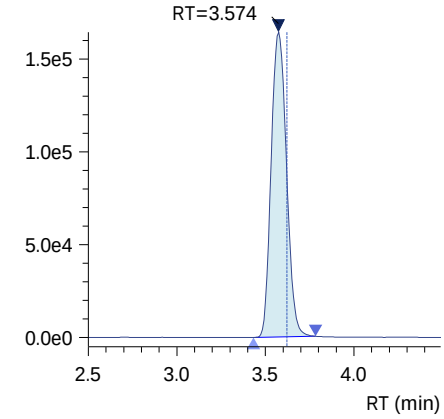
Sample ID: Perchlorate ICAL 9
Date Acquired: 8/2/2023 2:02:07 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230802\2230802-011.lcd
Vial: 9 | Inj. Volume: 10.0000uL | Tray: 1

| Name | Mode ID | Found RT | Area | ISTD Area | Conc. | Unit | Ref 1 m/z | Ref 1 Actual Ratio | Comment 1 |
|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | Auto | 3.574 | 990671 | 222379 | 30.2105 | ng/mL | 101.00 >85.00 | 27.95 | 21.29-39.54 |
| Sodium Perchlorate-18O4_IS | Auto | 3.568 | 222379 | 222379 | 1.0000 | ng/mL | ---- | ---- | |

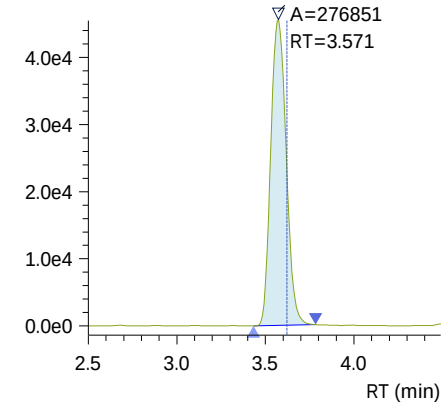
### Perchlorate

Conc 30.2105
R#1 27.95 (30.41)

Q 99.00>83.00 (-) A=990671 1.64e5



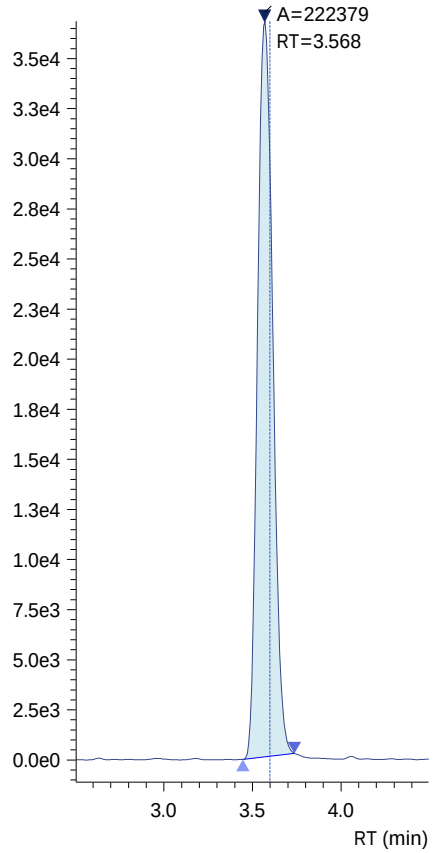

R1 101.00>85.00 (-) 4.55e4




### Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 3.69e4



# Insight Report

Printed at 8/3/2023 9:30:46 AM

## Perchlorate ICAL 10

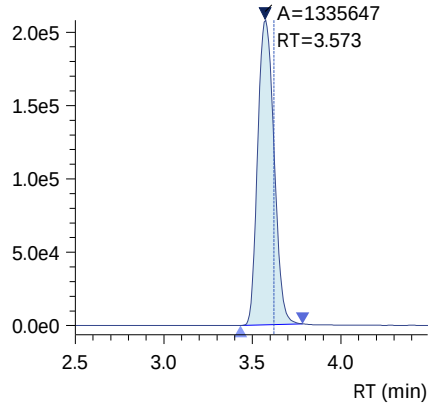
Sample ID: Perchlorate ICAL 10
Date Acquired: 8/2/2023 2:07:39 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230802\2230802-012.lcd
Vial: 10 | Inj. Volume: 10.0000uL | Tray: 1

| Name | Mode ID | Found RT | Area | ISTD Area | Conc. | Unit | Ref 1 m/z | Ref 1 Actual Ratio | Comment 1 |
|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | Auto | 3.573 | 1335647 | 178573 | 50.72<br>20 | ng/mL | 101.00<br>>85.00 | 28.04 | 21.29-39.54 |
| Sodium Perchlorate-18O4_IS | Auto | 3.567 | 178573 | 178573 | 1.0000 | ng/mL | ---- | ---- | |

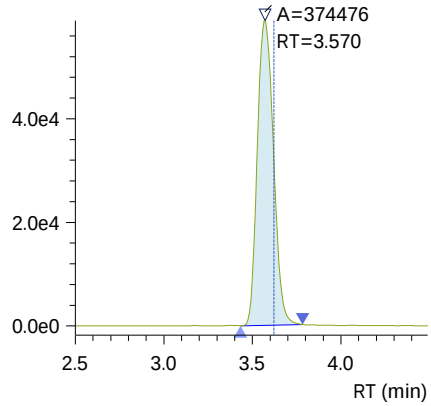
### Perchlorate

Conc 50.7220
R#1 28.04 (30.41)

Q 99.00>83.00 (-) 2.08e5



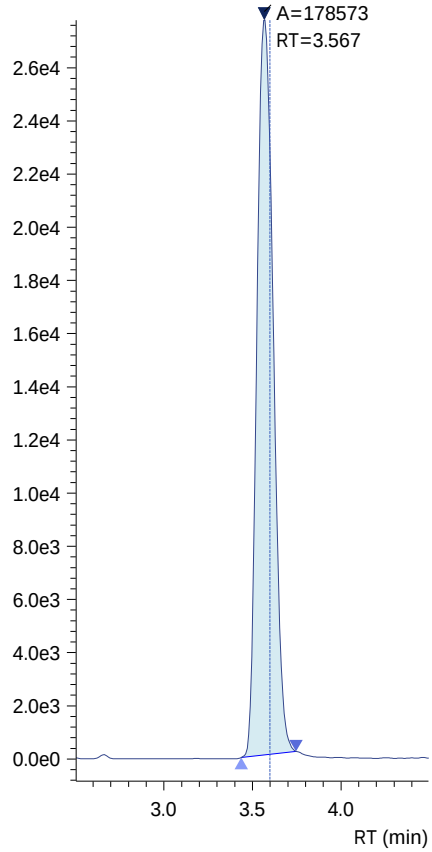

R1 101.00>85.00 (-) 5.90e4




### Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 2.78e4



# Insight Report

Printed at 8/3/2023 9:30:46 AM

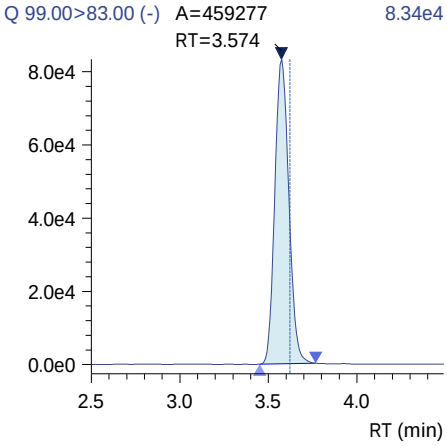
## PerchlorateICV

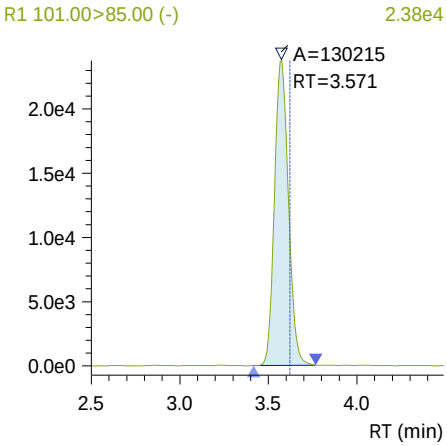
Sample ID: PerchlorateICV
Date Acquired: 8/2/2023 2:19:46 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230802\2230802-013.lcd
Vial: 11 | Inj. Volume: 10.0000uL | Tray: 1

| Name | Mode ID | Found RT | Area | ISTD Area | Conc. | Unit | Ref 1 m/z | Ref 1 Actual Ratio | Comment 1 |
|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | Auto | 3.574 | 459277 | 291890 | 10.6703 | ng/mL | 101.00 >85.00 | 28.35 | 21.29-39.54 |
| Sodium Perchlorate-18O4_IS | Auto | 3.570 | 291890 | 291890 | 1.0000 | ng/mL | ---- | ---- | |

### Perchlorate

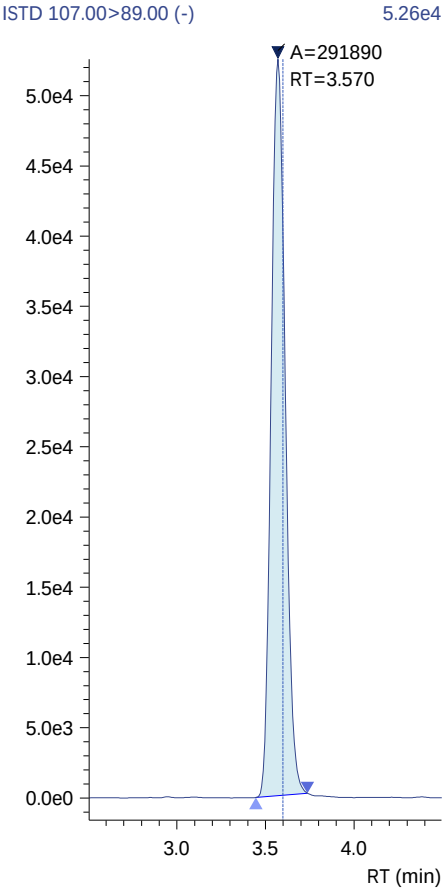
Conc 10.6703
R#1 28.35 (30.41)




### Sodium Perchlorate-18O4_IS

Conc 1.0000



# Chromatograms and Selected Ion Monitoring

**ALS Environmental - Houston HRMS**
10450 Stancliff Rd., Suite 320, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

**20230921-817943**

# Injection Log

LCMS01 -Shimadzu 8050

**1st Review: XM**
**2nd Review: KN**

**ICAL Date:** 8/2/2023
**Cal. Std. xp:** 02/02/2024
**ICAL ID:** EC2300012

**Mobile Phases : A:**20mM ammonium acetate in water 231240 **B:**Acetonitrile 229152

| | Sample Name | | File Name | Acquisition Method | Dilution | Comments | Date/Time |
|---|---|---|---|---|---|---|---|
| 1 | IB | | 2230921-001 | Perchlorate6850c.lcm | 1x | | 9/21/2023 8:52 |
| 2 | LODV | | 2230921-002 | Perchlorate6850c.lcm | 1x | 230386 | 9/21/2023 9:36 |
| 3 | ICS | | 2230921-003 | Perchlorate6850c.lcm | 1x | 32103051 | 9/21/2023 9:48 |
| 4 | CCV | | 2230921-004 | Perchlorate6850c.lcm | 1x | 230380 | 9/21/2023 9:56 |
| 5 | EQ2300460-01 | | 2230921-005 | Perchlorate6850c.lcm | 1x | | 9/21/2023 10:02 |
| 6 | EQ2300460-02 | | 2230921-006 | Perchlorate6850c.lcm | 1x | | 9/21/2023 10:08 |
| 7 | EQ2300460-03 | | 2230921-007 | Perchlorate6850c.lcm | 1x | dnu-rr | 9/21/2023 10:14 |
| 8 | E2300855-001 | | 2230921-008 | Perchlorate6850c.lcm | 1x | | 9/21/2023 10:19 |
| 9 | E2300864-001 | | 2230921-009 | Perchlorate6850c.lcm | 1x | | 9/21/2023 10:25 |
| 10 | E2300864-002 | | 2230921-010 | Perchlorate6850c.lcm | 1x | | 9/21/2023 10:30 |
| 11 | K2310422-001 | | 2230921-011 | Perchlorate6850c.lcm | 1x | | 9/21/2023 10:36 |
| 12 | K2310422-002 | | 2230921-012 | Perchlorate6850c.lcm | 1x | | 9/21/2023 10:41 |
| 13 | K2310422-003 | | 2230921-013 | Perchlorate6850c.lcm | 1x | | 9/21/2023 10:47 |
| 14 | EQ2300460-03 | | 2230921-014 | Perchlorate6850c.lcm | 1x | | 9/21/2023 11:01 |
| 15 | CCV | | 2230921-015 | Perchlorate6850c.lcm | 1x | 230380 | 9/21/2023 11:13 |

**ALS Group USA, Corp. dba ALS Environmental**

QA/QC Report

| | | | |
|---|---|---|---|
| **Client:** | ALS Environmental - US | **Service Request:** | E2300864 |
| **Project:** | HS23091132 | **Date Analyzed:** | 9/21/23 09:56 |

**Internal Standard Area and RT Summary**

**Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry**

| | | | |
|---|---|---|---|
| **File ID:** | I:\LCMS01\DATA\20230921\2230921-004 | **Lab Code:** | EQ2300461-01 |
| **Instrument ID:** | E-LCMS-01 | **Analysis Lot:** | 817943 |
| **Analytical Method:** | 6850 | **Signal ID:** | 1 |

| | | Sodium Perchlorate-18O4 | |
|---|---|---|---|
| | | **Area** | **RT** |
| | **ICAL Average ==>** | 297,129 | 3.57 |
| | **Upper Limit ==>** | 445,694 | 5.57 |
| | **Lower Limit ==>** | 148,565 | 1.57 |
| ***Associated Analyses*** | | | |
| Continuing Calibration Verification | EQ2300461-01 | 262,810 | 3.57 |
| Method Blank | EQ2300460-01 | 302,907 | 3.57 |
| Lab Control Sample | EQ2300460-02 | 297,582 | 3.57 |
| LH18/24-SP650_091923_BIX | E2300864-001 | 318,841 | 3.57 |
| LH18/24-SP650_091923_AIX | E2300864-002 | 343,981 | 3.57 |
| Duplicate Lab Control Sample | EQ2300460-03 | 326,592 | 3.57 |

**Results flagged with an asterisk (*) indicate values outside control criteria.**

**ALS Group USA, Corp. dba ALS Environmental**

QA/QC Report

| | | | |
|---|---|---|---|
| **Client:** | ALS Environmental - US | **Service Request:** | E2300864 |
| **Project:** | HS23091132 | **Date Analyzed:** | 9/21/23 11:13 |

**Internal Standard Area and RT Summary**

**Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry**

| | | | |
|---|---|---|---|
| **File ID:** | I:\LCMS01\DATA\20230921\2230921-015 | **Lab Code:** | EQ2300461-02 |
| **Instrument ID:** | E-LCMS-01 | **Analysis Lot:** | 817943 |
| **Analytical Method:** | 6850 | **Signal ID:** | 1 |

| | | Sodium Perchlorate-18O4 | |
|---|---|---|---|
| | | **Area** | **RT** |
| | **ICAL Average ==>** | 297,129 | 3.57 |
| | **Upper Limit ==>** | 445,694 | 5.57 |
| | **Lower Limit ==>** | 148,565 | 1.57 |
| ***Associated Analyses*** | | | |
| Continuing Calibration Verification | EQ2300461-02 | 296,619 | 3.57 |

**Results flagged with an asterisk (*) indicate values outside control criteria.**

**ALS Group USA, Corp. dba ALS Environmental**

QA/QC Report

**Client:** ALS Environmental - US
**Project:** HS23091132

**Service Request:** E2300864
**Date Analyzed:** 9/21/23

## Continuing Calibration Verification Summary
## Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

**Analytical Method:** 6850
**File ID:** I:\LCMS01\DATA\20230921\2230921-004

**Calibration Date:** 8/2/23
**Calibration ID:** EC2300012
**Analysis Lot:** 817943
**Units:** ng/mL

| Analyte Name | Expected | Result | Average RF | CCV RF | %D | %Drift | Criteria | Curve Fit |
|---|---|---|---|---|---|---|---|---|
| Perchlorate | 10.0 | 9.87 | 0.1475 | 0.1455 | -1.3 | NA | ± 15 % | Average RF |

**ALS Group USA, Corp. dba ALS Environmental**

QA/QC Report

**Client:** ALS Environmental - US
**Project:** HS23091132

**Service Request:** E2300864
**Date Analyzed:** 9/21/23

## Continuing Calibration Verification Summary
## Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

**Analytical Method:** 6850
**File ID:** I:\LCMS01\DATA\20230921\2230921-015

**Calibration Date:** 8/2/23
**Calibration ID:** EC2300012
**Analysis Lot:** 817943
**Units:** ng/mL

| Analyte Name | Expected | Result | Average RF | CCV RF | %D | %Drift | Criteria | Curve Fit |
|---|---|---|---|---|---|---|---|---|
| Perchlorate | 10.0 | 9.86 | 0.1475 | 0.1453 | -1.4 | NA | ± 15 % | Average RF |

# Insight Report

Printed at 9/21/2023 11:37:34 AM

Method File: I:\LCMS01\DATA\20230921\20230921.lcm
Project File: I:\LCMS01\DATA\20230921\20230921.damlp

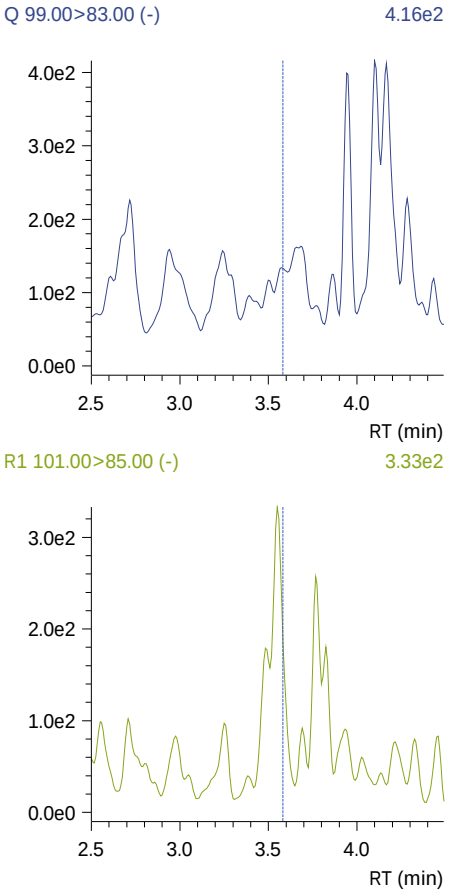
## IB

Sample ID: IB
Date Acquired: 9/21/2023 8:52:06 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230921\2230921-001.lcd
Vial: 40 | Inj. Volume: 10.0000uL | Tray: 3

| Name | Mode ID | Found RT | Area | ISTD Area | Conc. | Unit | Ref 1 m/z | Ref 1 Actual Ratio | Comment 1 |
|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | ND(W/B) | ---- | ---- | 408451 | ---- | ng/mL | 101.00 >85.00 | 0.00 | 19.41-36.04 |
| Sodium Perchlorate-18O4_IS | Auto | 3.580 | 408451 | 408451 | 1.0000 | ng/mL | ---- | ---- | |

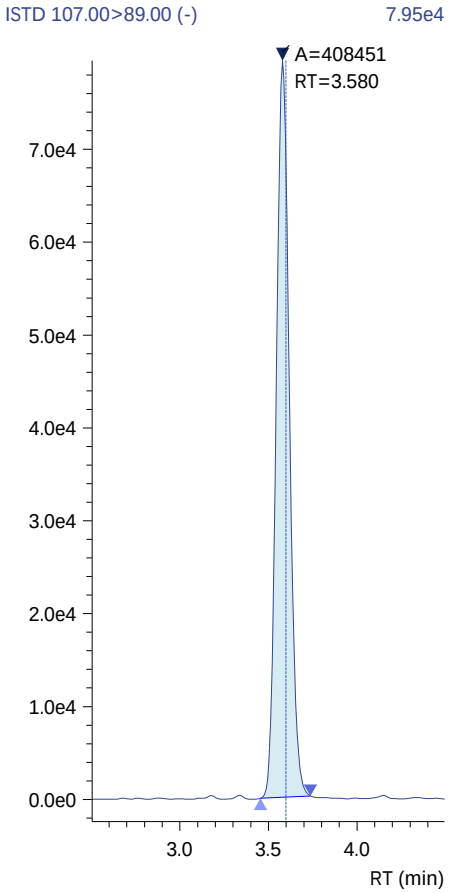
### Perchlorate

Conc ----
R#1 0.00 (27.73)




### Sodium Perchlorate-18O4_IS

Conc 1.0000



# Insight Report

Printed at 9/21/2023 11:37:34 AM

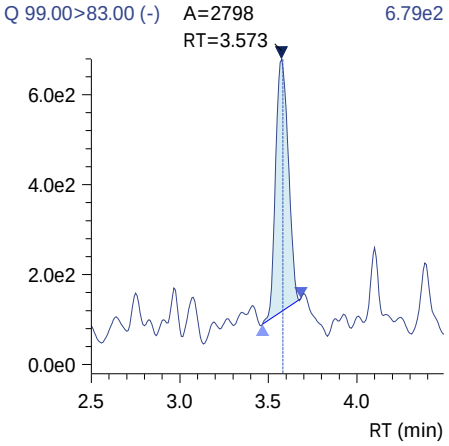
## LODV

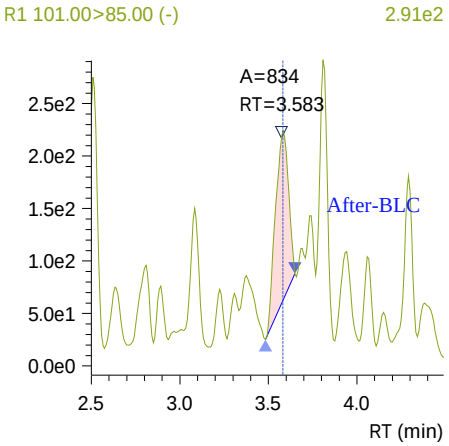
Sample ID: LODV
Date Acquired: 9/21/2023 9:36:17 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230921\2230921-002.lcd
Vial: 12 | Inj. Volume: 10.0000uL | Tray: 1

| Name | Mode ID | Found RT | Area | ISTD Area | Conc. | Unit | Ref 1 m/z | Ref 1 Actual Ratio | Comment 1 |
|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | MI R1 | 3.573 | 2798 | 392672 | 0.0483 | ng/mL | 101.00 >85.00 | 29.82 | 19.41-36.04 |
| Sodium Perchlorate-18O4 _IS | Auto | 3.575 | 392672 | 392672 | 1.0000 | ng/mL | ---- | ---- | |

### Perchlorate

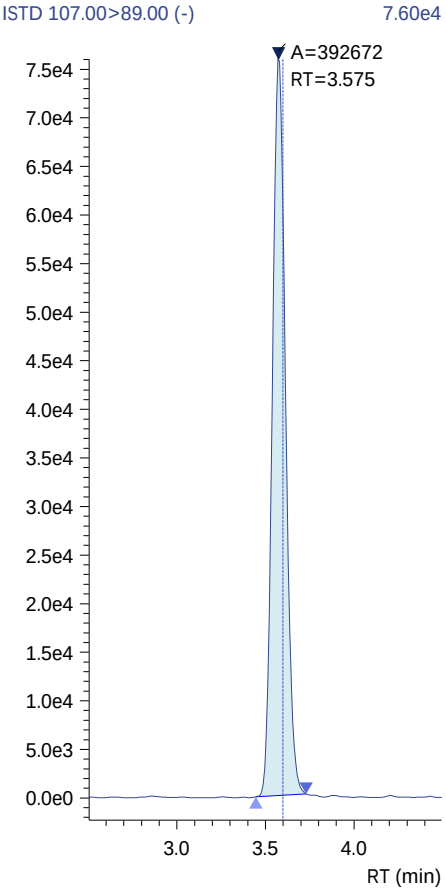
Conc 0.0483
R#1 29.82 (27.73)




### Sodium Perchlorate-18O4_IS

Conc 1.0000



# Insight Report

Printed at 9/21/2023 11:38:54 AM

Method File: I:\LCMS01\DATA\20230921\20230921.lcm
Project File: I:\LCMS01\DATA\20230921\20230921.damlp

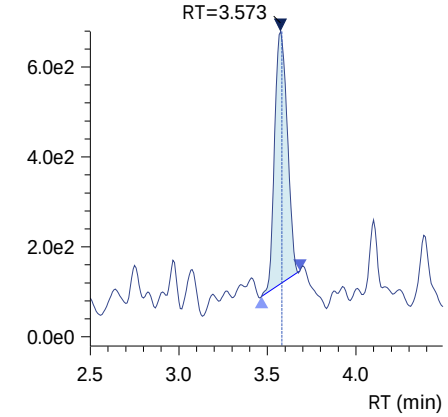
## LODV

Sample ID: LODV
Date Acquired: 9/21/2023 9:36:17 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230921\2230921-002.lcd
Vial: 12 | Inj. Volume: 10.0000uL | Tray: 1

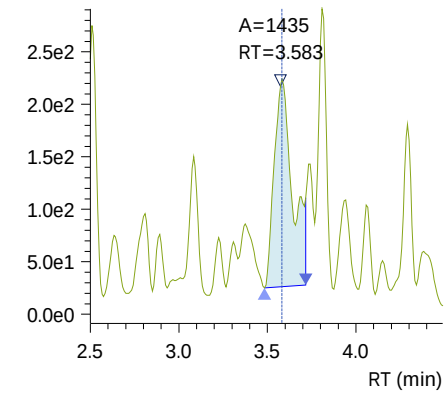
### Perchlorate

Conc 0.0483
R#1 51.28 (27.73)

Q 99.00>83.00 (-) A=2798 6.79e2



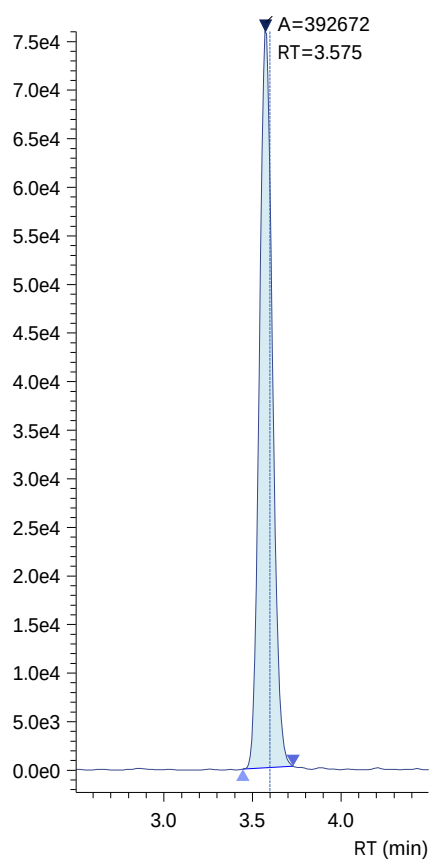

R1 101.00>85.00 (-) 2.91e2




### Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 7.60e4



# Insight Report

Printed at 9/21/2023 11:37:34 AM

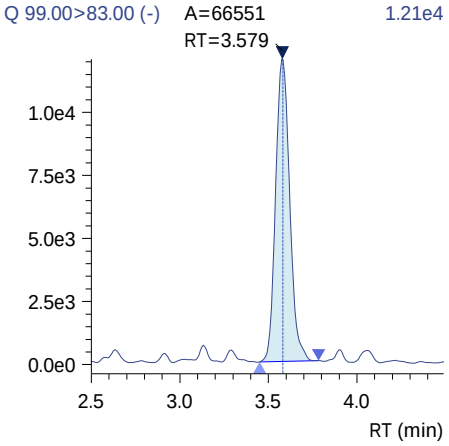
## ICS

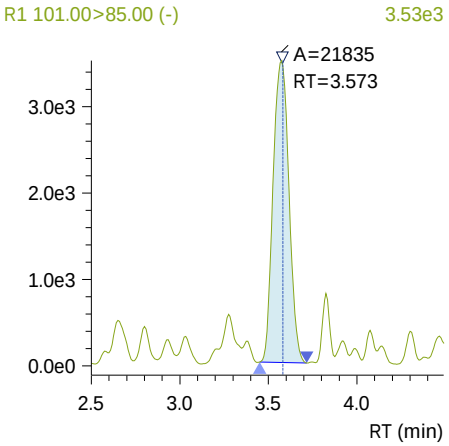
Sample ID: ICS
Date Acquired: 9/21/2023 9:48:30 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230921\2230921-003~1.lcd
Vial: 2 | Inj. Volume: 10.0000uL | Tray: 0

| Name | Mode ID | Found RT | Area | ISTD Area | Conc. | Unit | Ref 1 m/z | Ref 1 Actual Ratio | Comment 1 |
|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | Auto | 3.579 | 66551 | 402078 | 1.1224 | ng/mL | 101.00 >85.00 | 32.81 | 19.41-36.04 |
| Sodium Perchlorate-18O4 _IS | Auto | 3.573 | 4020 78 | 402078 | 1.0000 | ng/mL | ---- | ---- | |

### Perchlorate

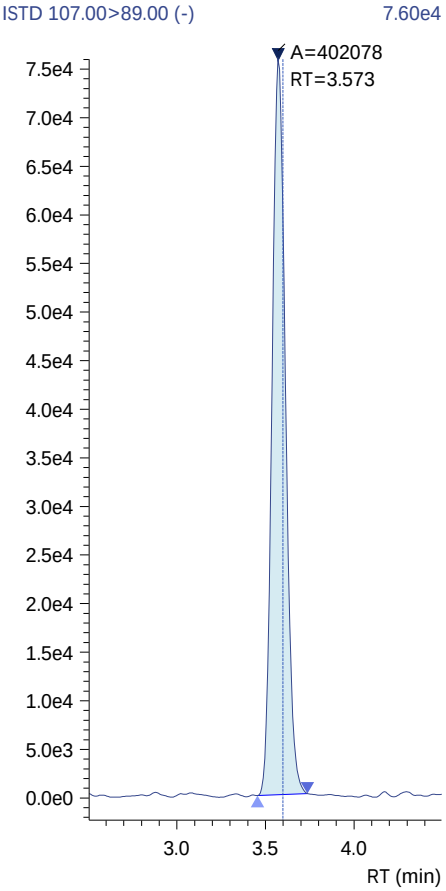
Conc 1.1224
R#1 32.81 (27.73)




### Sodium Perchlorate-18O4_IS

Conc 1.0000



# Insight Report

Printed at 9/21/2023 11:37:34 AM

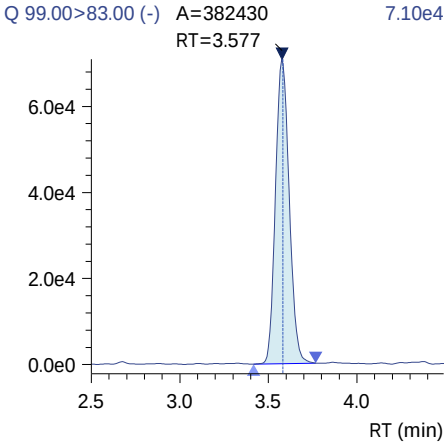
## CCV

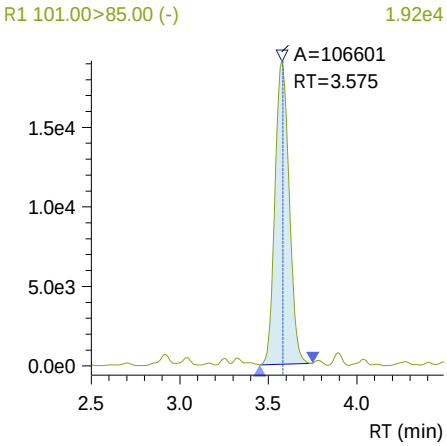
Sample ID: CCV
Date Acquired: 9/21/2023 9:56:40 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230921\2230921-004.lcd
Vial: 7 | Inj. Volume: 10.0000uL | Tray: 1

| Name | Mode ID | Found RT | Area | ISTD Area | Conc. | Unit | Ref 1 m/z | Ref 1 Actual Ratio | Comment 1 |
|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | Auto | 3.577 | 382430 | 262810 | 9.8680 | ng/mL | 101.00 >85.00 | 27.88 | 19.41-36.04 |
| Sodium Perchlorate-18O4_IS | Auto | 3.574 | 262810 | 262810 | 1.0000 | ng/mL | ---- | ---- | |

### Perchlorate

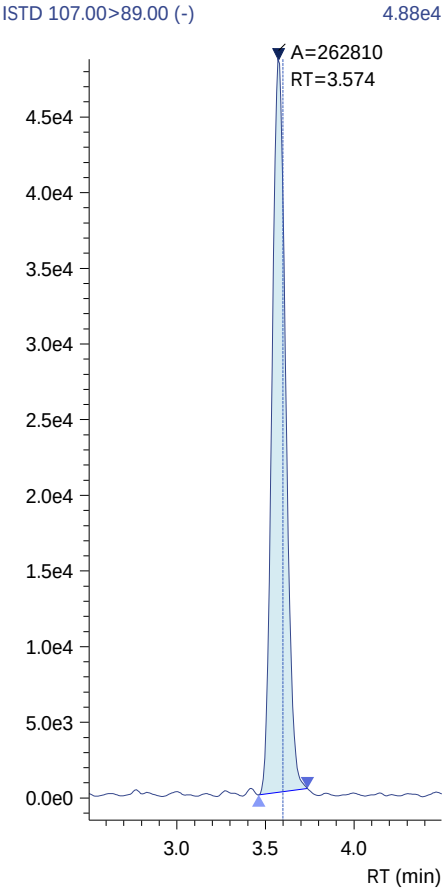
Conc 9.8680
R#1 27.88 (27.73)




### Sodium Perchlorate-18O4_IS

Conc 1.0000



# Insight Report

Printed at 9/21/2023 11:37:34 AM

## EQ2300460-01

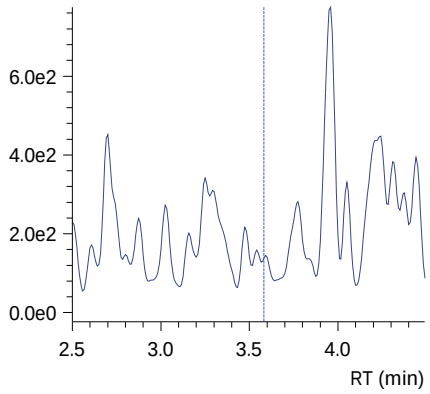
Sample ID: EQ2300460-01
Date Acquired: 9/21/2023 10:02:55 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230921\2230921-005.lcd
Vial: 40 | Inj. Volume: 10.0000uL | Tray: 3

| Name | Mode ID | Found RT | Area | ISTD Area | Conc. | Unit | Ref 1 m/z | Ref 1 Actual Ratio | Comment 1 |
|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | ND(W/B) | ---- | ---- | 302907 | ---- | ng/mL | 101.00 >85.00 | 0.00 | 19.41-36.04 |
| Sodium Perchlorate-18O4_IS | Auto | 3.573 | 302907 | 302907 | 1.0000 | ng/mL | ---- | ---- | |

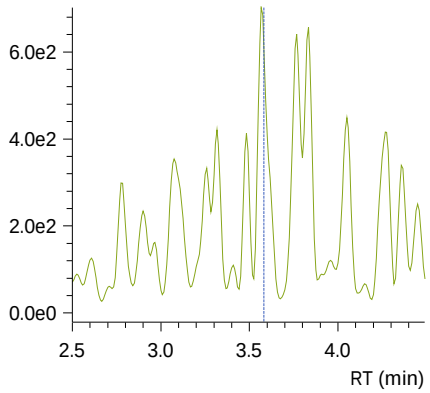
### Perchlorate

Conc ----
R#1 0.00 (27.73)

Q 99.00>83.00 (-) 7.75e2



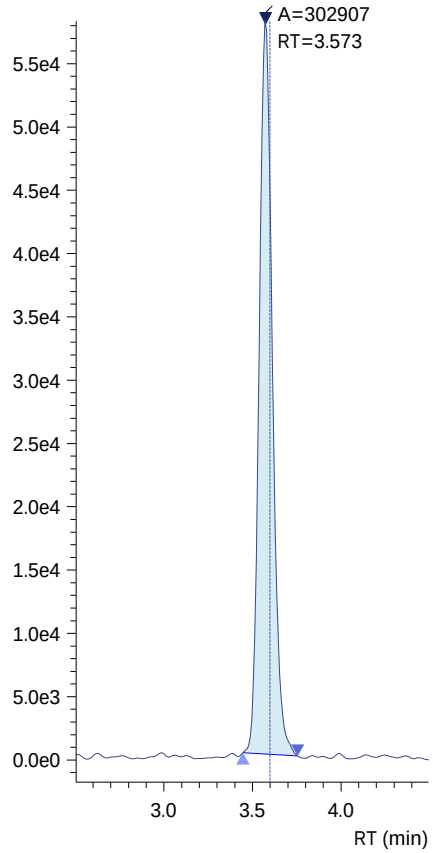

R1 101.00>85.00 (-) 7.02e2




### Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 5.84e4



# Insight Report

Printed at 9/21/2023 11:37:34 AM

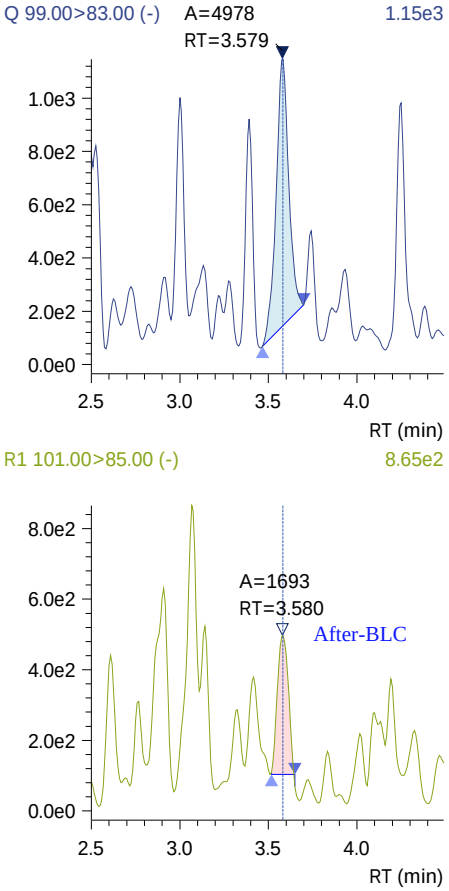
## EQ2300460-02

Sample ID: EQ2300460-02
Date Acquired: 9/21/2023 10:08:28 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230921\2230921-006.lcd
Vial: 41 | Inj. Volume: 10.0000uL | Tray: 3

| Name | Mode ID | Found RT | Area | ISTD Area | Conc. | Unit | Ref 1 m/z | Ref 1 Actual Ratio | Comment 1 |
|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | MI R1 | 3.579 | 4978 | 297582 | 0.1134 | ng/mL | 101.00 >85.00 | 34.01 | 19.41-36.04 |
| Sodium Perchlorate-18O4 _IS | Auto | 3.573 | 297582 | 297582 | 1.0000 | ng/mL | ---- | ---- | |

### Perchlorate

Conc 0.1134
R#1 34.01 (27.73)

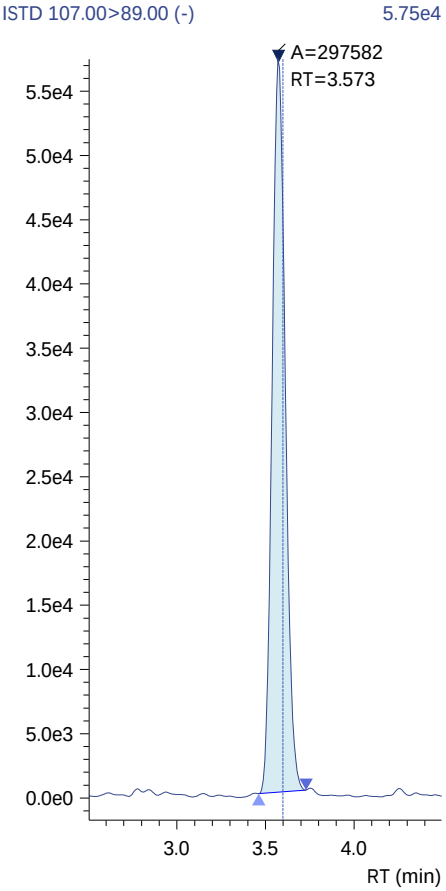






### Sodium Perchlorate-18O4_IS

Conc 1.0000



# Insight Report

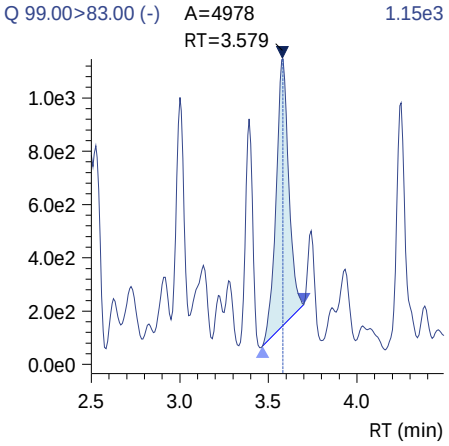
Printed at 9/21/2023 11:38:54 AM

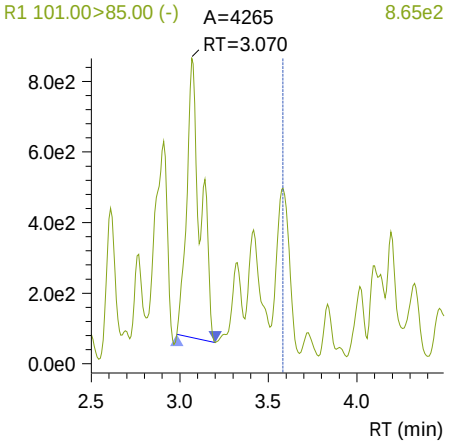
## EQ2300460-02

Sample ID: EQ2300460-02
Date Acquired: 9/21/2023 10:08:28 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230921\2230921-006.lcd
Vial: 41 | Inj. Volume: 10.0000uL | Tray: 3

### Perchlorate

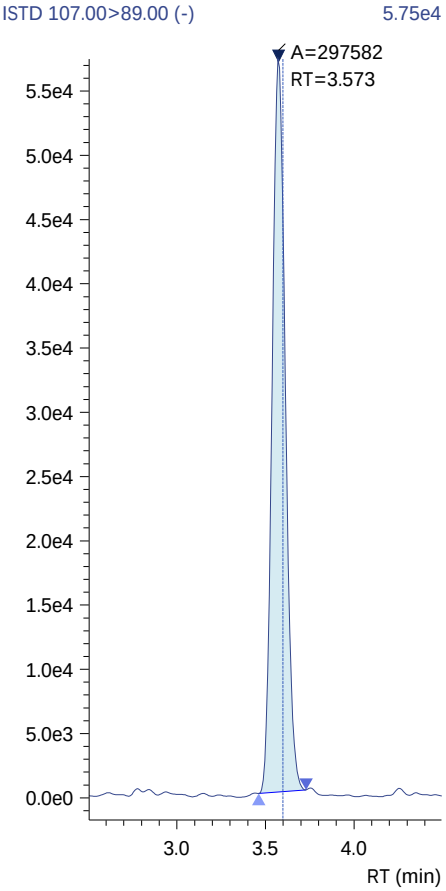
Conc 0.1134
R#1 0.00 (27.73)




### Sodium Perchlorate-18O4_IS

Conc 1.0000



# Insight Report

Printed at 9/21/2023 11:37:34 AM

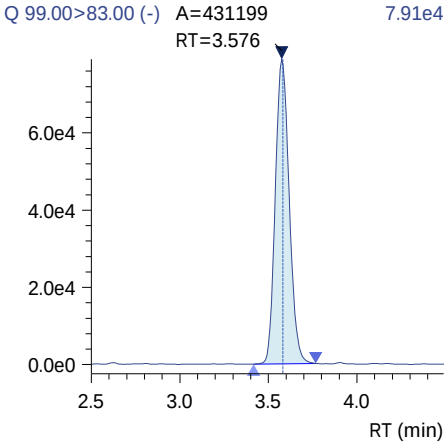
## E2300864-001

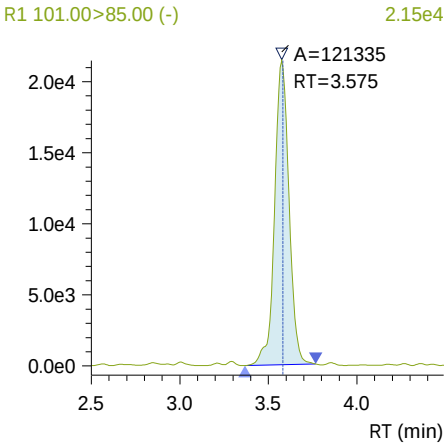
Sample ID: E2300864-001
Date Acquired: 9/21/2023 10:25:06 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230921\2230921-009.lcd
Vial: 44 | Inj. Volume: 10.0000uL | Tray: 3

| Name | Mode ID | Found RT | Area | ISTD Area | Conc. | Unit | Ref 1 m/z | Ref 1 Actual Ratio | Comment 1 |
|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | Auto | 3.576 | 431199 | 318841 | 9.1712 | ng/mL | 101.00 >85.00 | 28.14 | 19.41-36.04 |
| Sodium Perchlorate-18O4_IS | Auto | 3.573 | 318841 | 318841 | 1.0000 | ng/mL | ---- | ---- | |

### Perchlorate

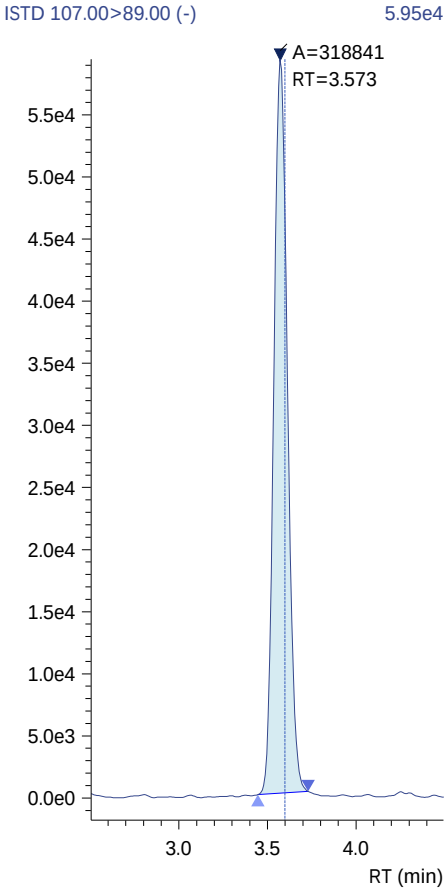
Conc 9.1712
R#1 28.14 (27.73)




### Sodium Perchlorate-18O4_IS

Conc 1.0000



# Insight Report

Printed at 9/21/2023 11:37:34 AM

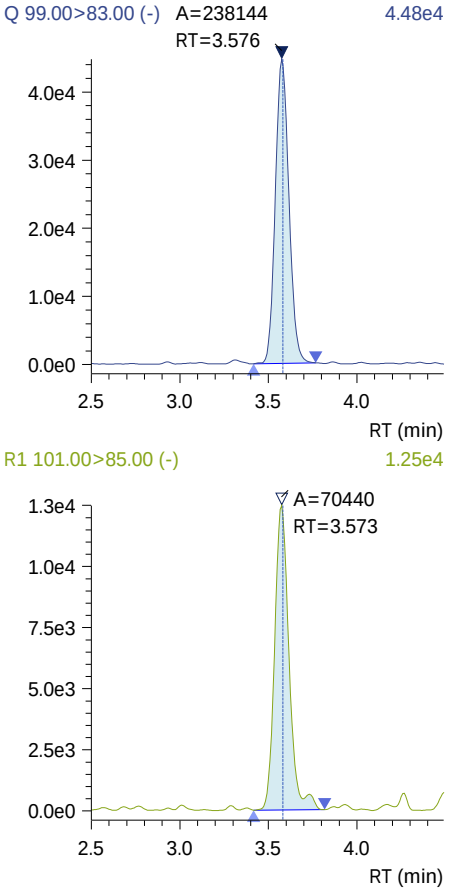
## E2300864-002

Sample ID: E2300864-002
Date Acquired: 9/21/2023 10:30:35 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230921\2230921-010.lcd
Vial: 45 | Inj. Volume: 10.0000uL | Tray: 3

| Name | Mode ID | Found RT | Area | ISTD Area | Conc. | Unit | Ref 1 m/z | Ref 1 Actual Ratio | Comment 1 |
|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | Auto | 3.576 | 238144 | 343981 | 4.6949 | ng/mL | 101.00 >85.00 | 29.58 | 19.41-36.04 |
| Sodium Perchlorate-18O4 _IS | Auto | 3.573 | 343981 | 343981 | 1.0000 | ng/mL | ---- | ---- | |

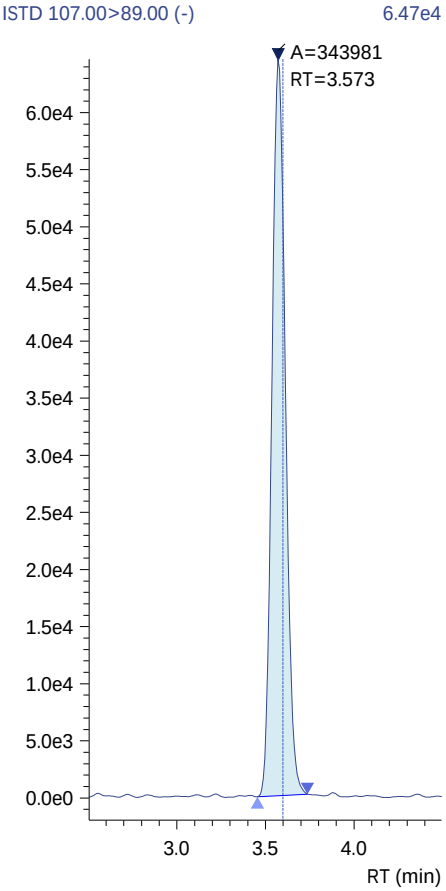
### Perchlorate

Conc 4.6949
R#1 29.58 (27.73)




### Sodium Perchlorate-18O4_IS

Conc 1.0000



# Insight Report

Printed at 9/21/2023 11:37:34 AM

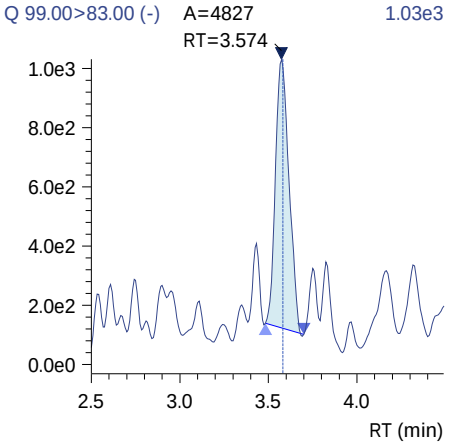
## EQ2300460-03

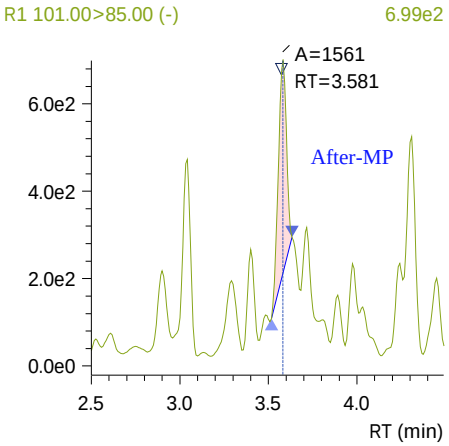
Sample ID: EQ2300460-03
Date Acquired: 9/21/2023 11:01:51 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230921\2230921-014.lcd
Vial: 42 | Inj. Volume: 10.0000uL | Tray: 3

| Name | Mode ID | Found RT | Area | ISTD Area | Conc. | Unit | Ref 1 m/z | Ref 1 Actual Ratio | Comment 1 |
|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | MI R1 | 3.574 | 4827 | 326592 | 0.1002 | ng/mL | 101.00 >85.00 | 32.33 | 19.41-36.04 |
| Sodium Perchlorate-18O4 _IS | Auto | 3.572 | 3265 92 | 326592 | 1.0000 | ng/mL | ---- | ---- | |

### Perchlorate

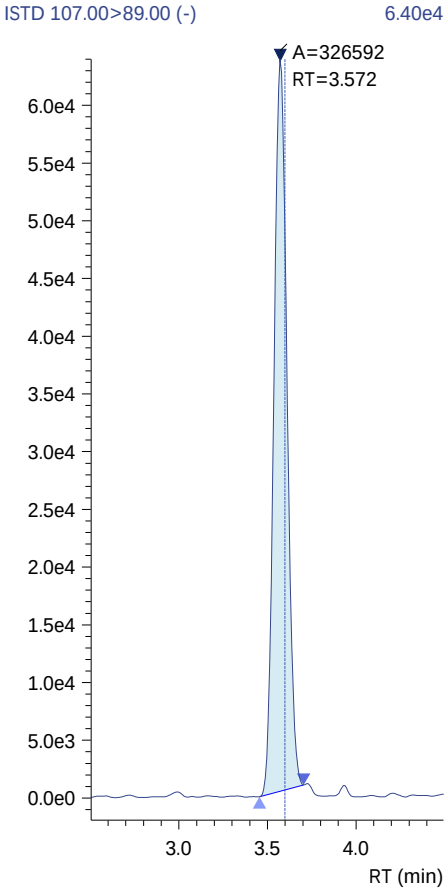
Conc 0.1002
R#1 32.33 (27.73)




### Sodium Perchlorate-18O4_IS

Conc 1.0000



# Insight Report

Printed at 9/21/2023 11:38:54 AM

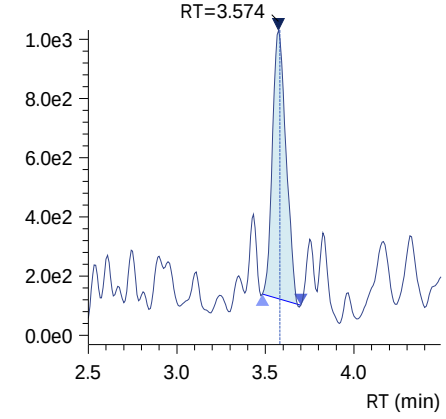
## EQ2300460-03

Sample ID: EQ2300460-03
Date Acquired: 9/21/2023 11:01:51 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230921\2230921-014.lcd
Vial: 42 | Inj. Volume: 10.0000uL | Tray: 3

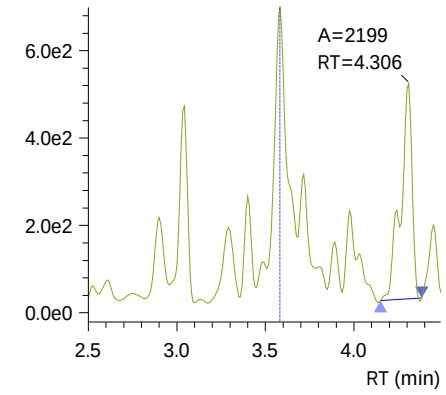
### Perchlorate

Conc 0.1002
R#1 0.00 (27.73)

Q 99.00>83.00 (-) A=4827 1.03e3



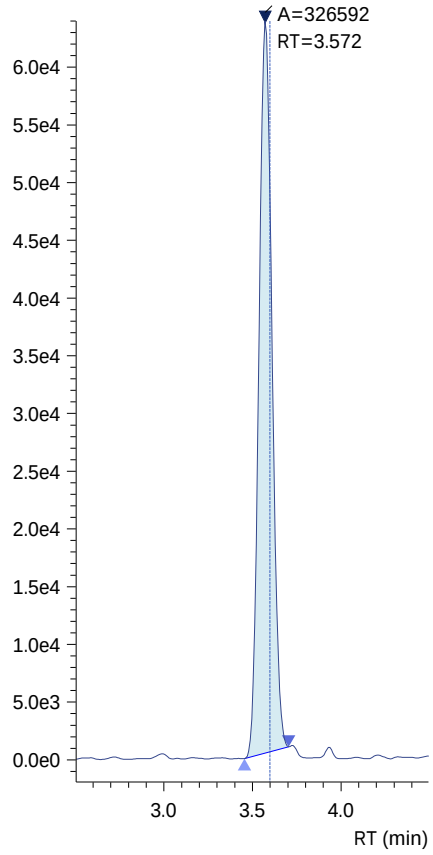

R1 101.00>85.00 (-) 6.99e2




### Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 6.40e4



# Insight Report

Printed at 9/21/2023 11:37:34 AM

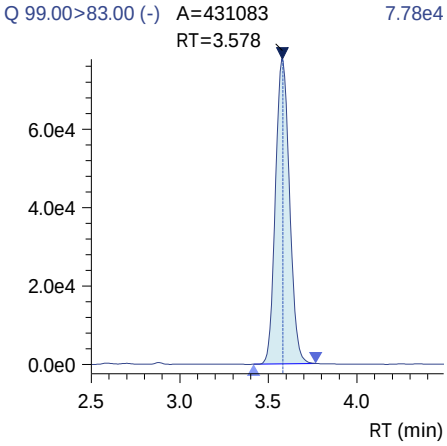
## CCV

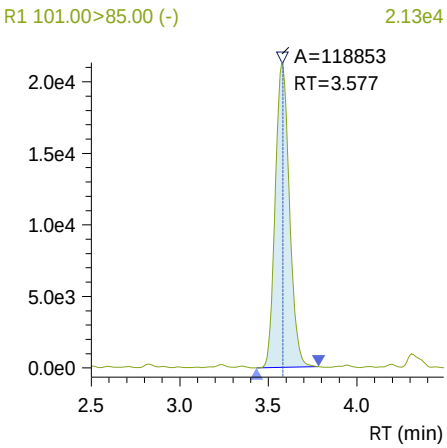
Sample ID: CCV
Date Acquired: 9/21/2023 11:13:40 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230921\2230921-015.lcd
Vial: 7 | Inj. Volume: 10.0000uL | Tray: 1

| Name | Mode ID | Found RT | Area | ISTD Area | Conc. | Unit | Ref 1 m/z | Ref 1 Actual Ratio | Comment 1 |
|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | Auto | 3.578 | 431083 | 296619 | 9.8556 | ng/mL | 101.00 >85.00 | 27.57 | 19.41-36.04 |
| Sodium Perchlorate-18O4_IS | Auto | 3.574 | 296619 | 296619 | 1.0000 | ng/mL | ---- | ---- | |

### Perchlorate

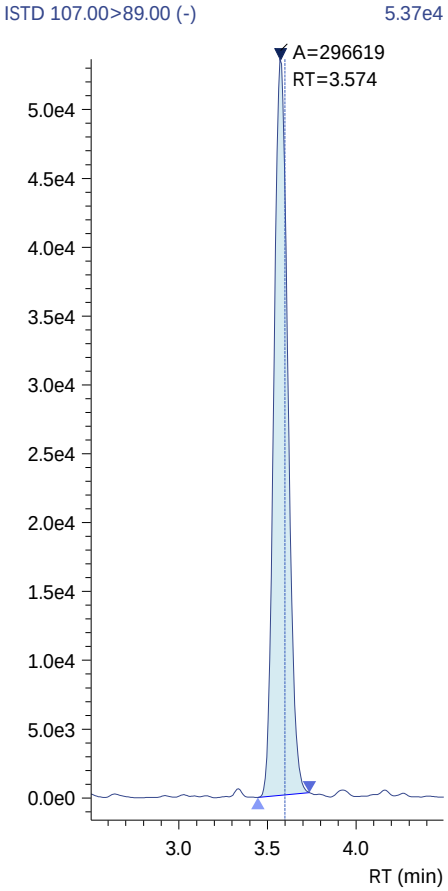
Conc 9.8556
R#1 27.57 (27.73)




### Sodium Perchlorate-18O4_IS

Conc 1.0000



# HS23091194 GROUNDWATER TREATMENT PLANT BIWEEKLY SAMPLES Cover Page

ALS WO# HS23091194

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HS23091194-01DF20
CCV
CCB

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alsglobal.com

# WorkOrder: HS23091194

## GROUNDWATER TREATMENT PLANT BI-WEEKLY SAMPLES

**Bhate Environmental Associates, Inc.**

Marcia Olive
445 Union Blvd Ste 129
Lakewood CO 80228

**27-Sep-2023**

# HS23091194 GROUNDWATER TREATMENT PLANT BIWEEKLY SAMPLES Final

ALS WO# HS23091194

10450 Stancliff Rd. Suite 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887

September 30, 2023

Marcia Olive
Bhate Environmental Associates, Inc.
445 Union Blvd Ste 129
Lakewood, CO 80228

Work Order: **HS23091194**

Laboratory Results for: **GROUNDWATER TREATMENT PLANT BI-WEEKLY SAMPLES**

Dear Marcia Olive,

ALS Environmental received 2 sample(s) on Sep 20, 2023 for the analysis presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

**Generated By: JUMOKE.LAWAL**
James Guin

**ALS Houston, US** Date: 30-Sep-23

**Client:** Bhate Environmental Associates, Inc.
**Project:** GROUNDWATER TREATMENT PLANT BI-WEEKLY SAMPLES
**Work Order:** HS23091194

## SAMPLE SUMMARY

| Lab Samp ID | Client Sample ID | Matrix | TagNo | Collection Date | Date Received | Hold |
|---|---|---|---|---|---|---|
| HS23091194-01 | LH18/24-SP650_091923 | Water | | 19-Sep-2023 13:00 | 20-Sep-2023 09:30 | ☐ |
| HS23091194-02 | Trip Blank | Water | CG-041923-829 | 19-Sep-2023 00:00 | 20-Sep-2023 09:30 | ☐ |

**ALS Houston, US** Date: 30-Sep-23

**Client:** Bhate Environmental Associates, Inc. **CASE NARRATIVE**
**Project:** GROUNDWATER TREATMENT PLANT BI-WEEKLY SAMPLES
**Work Order:** HS23091194

## GCMS Volatiles by Method SW8260

### Batch ID: R447039

**Sample ID: LH18/24-SP650_091923(HS23091194-01MS)**

- MS/MSD failed QC limits for some compounds due to matrix

## WetChemistry by Method SW9056

### Batch ID: R447807

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

**ALS Houston, US** Date: 30-Sep-23

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**

Project: GROUNDWATER TREATMENT PLANT BI-WEEKLY SAMPLES WorkOrder:HS23091194

Sample ID: LH18/24-SP650_091923 Lab ID:HS23091194-01

Collection Date: 19-Sep-2023 13:00 Matrix:Water

| ANALYSES | RESULT | QUAL | DL | LOD | LOQ | UNITS | DILUTION FACTOR | DATE ANALYZED |
|---|---|---|---|---|---|---|---|---|
| **VOLATILES ORGANICS BY METHOD 8260C** | **Method:SW8260** | | | | | | | Analyst: PC |
| 1,1,1,2-Tetrachloroethane | 0.50 | U | 0.30 | 0.50 | 1.0 | ug/L | 1 | 21-Sep-2023 14:04 |
| 1,1,1-Trichloroethane | 0.50 | U | 0.20 | 0.50 | 1.0 | ug/L | 1 | 21-Sep-2023 14:04 |
| 1,1,2,2-Tetrachloroethane | 0.50 | U | 0.50 | 0.50 | 1.0 | ug/L | 1 | 21-Sep-2023 14:04 |
| 1,1,2-Trichloroethane | 0.50 | U | 0.30 | 0.50 | 1.0 | ug/L | 1 | 21-Sep-2023 14:04 |
| 1,1-Dichloroethane | 0.50 | U | 0.20 | 0.50 | 1.0 | ug/L | 1 | 21-Sep-2023 14:04 |
| 1,1-Dichloroethene | 0.50 | U | 0.20 | 0.50 | 1.0 | ug/L | 1 | 21-Sep-2023 14:04 |
| 1,1-Dichloropropene | 0.50 | U | 0.30 | 0.50 | 1.0 | ug/L | 1 | 21-Sep-2023 14:04 |
| 1,2,3-Trichlorobenzene | 0.50 | U | 0.40 | 0.50 | 1.0 | ug/L | 1 | 21-Sep-2023 14:04 |
| 1,2,3-Trichloropropane | 0.50 | U | 0.50 | 0.50 | 1.0 | ug/L | 1 | 21-Sep-2023 14:04 |
| 1,2,4-Trichlorobenzene | 0.50 | U | 0.50 | 0.50 | 1.0 | ug/L | 1 | 21-Sep-2023 14:04 |
| 1,2,4-Trimethylbenzene | 0.50 | U | 0.30 | 0.50 | 1.0 | ug/L | 1 | 21-Sep-2023 14:04 |
| 1,2-Dibromo-3-chloropropane | 0.50 | U | 0.20 | 0.50 | 1.0 | ug/L | 1 | 21-Sep-2023 14:04 |
| 1,2-Dibromoethane | 0.50 | U | 0.20 | 0.50 | 1.0 | ug/L | 1 | 21-Sep-2023 14:04 |
| 1,2-Dichlorobenzene | 0.50 | U | 0.50 | 0.50 | 1.0 | ug/L | 1 | 21-Sep-2023 14:04 |
| 1,2-Dichloroethane | 0.50 | U | 0.20 | 0.50 | 1.0 | ug/L | 1 | 21-Sep-2023 14:04 |
| 1,2-Dichloropropane | 0.50 | U | 0.50 | 0.50 | 1.0 | ug/L | 1 | 21-Sep-2023 14:04 |
| 1,3,5-Trimethylbenzene | 0.50 | U | 0.30 | 0.50 | 1.0 | ug/L | 1 | 21-Sep-2023 14:04 |
| 1,3-Dichlorobenzene | 0.50 | U | 0.40 | 0.50 | 1.0 | ug/L | 1 | 21-Sep-2023 14:04 |
| 1,3-Dichloropropane | 0.50 | U | 0.30 | 0.50 | 1.0 | ug/L | 1 | 21-Sep-2023 14:04 |
| 1,4-Dichlorobenzene | 0.50 | U | 0.40 | 0.50 | 1.0 | ug/L | 1 | 21-Sep-2023 14:04 |
| 2,2-Dichloropropane | 0.50 | U | 0.20 | 0.50 | 1.0 | ug/L | 1 | 21-Sep-2023 14:04 |
| 2-Butanone | 0.50 | U | 0.50 | 0.50 | 2.0 | ug/L | 1 | 21-Sep-2023 14:04 |
| 2-Chlorotoluene | 0.50 | U | 0.30 | 0.50 | 1.0 | ug/L | 1 | 21-Sep-2023 14:04 |
| 2-Hexanone | 2.0 | U | 1.0 | 2.0 | 2.0 | ug/L | 1 | 21-Sep-2023 14:04 |
| 4-Chlorotoluene | 0.50 | U | 0.40 | 0.50 | 1.0 | ug/L | 1 | 21-Sep-2023 14:04 |
| 4-Isopropyltoluene | 0.50 | U | 0.30 | 0.50 | 1.0 | ug/L | 1 | 21-Sep-2023 14:04 |
| 4-Methyl-2-pentanone | 2.0 | U | 0.70 | 2.0 | 2.0 | ug/L | 1 | 21-Sep-2023 14:04 |
| Acetone | 2.0 | U | 0.40 | 2.0 | 2.0 | ug/L | 1 | 21-Sep-2023 14:04 |
| Benzene | 0.50 | U | 0.20 | 0.50 | 1.0 | ug/L | 1 | 21-Sep-2023 14:04 |
| Bromobenzene | 0.50 | U | 0.40 | 0.50 | 1.0 | ug/L | 1 | 21-Sep-2023 14:04 |
| Bromochloromethane | 0.50 | U | 0.20 | 0.50 | 1.0 | ug/L | 1 | 21-Sep-2023 14:04 |
| Bromodichloromethane | 0.50 | U | 0.20 | 0.50 | 1.0 | ug/L | 1 | 21-Sep-2023 14:04 |
| Bromoform | 0.50 | U | 0.40 | 0.50 | 1.0 | ug/L | 1 | 21-Sep-2023 14:04 |
| Bromomethane | 0.50 | U | 0.40 | 0.50 | 1.0 | ug/L | 1 | 21-Sep-2023 14:04 |
| Carbon disulfide | 2.0 | U | 0.60 | 2.0 | 2.0 | ug/L | 1 | 21-Sep-2023 14:04 |
| Carbon tetrachloride | 0.50 | U | 0.50 | 0.50 | 1.0 | ug/L | 1 | 21-Sep-2023 14:04 |
| Chlorobenzene | 0.50 | U | 0.30 | 0.50 | 1.0 | ug/L | 1 | 21-Sep-2023 14:04 |
| Chloroethane | 0.50 | U | 0.30 | 0.50 | 1.0 | ug/L | 1 | 21-Sep-2023 14:04 |
| Chloroform | 0.50 | U | 0.20 | 0.50 | 1.0 | ug/L | 1 | 21-Sep-2023 14:04 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

**ALS Houston, US** Date: 30-Sep-23

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**

Project: GROUNDWATER TREATMENT PLANT BI-WEEKLY SAMPLES WorkOrder:HS23091194

Sample ID: LH18/24-SP650_091923 Lab ID:HS23091194-01

Collection Date: 19-Sep-2023 13:00 Matrix:Water

| ANALYSES | RESULT | QUAL | DL | LOD | LOQ | UNITS | DILUTION FACTOR | DATE ANALYZED |
|---|---|---|---|---|---|---|---|---|
| **VOLATILES ORGANICS BY METHOD 8260C** | | **Method:SW8260** | | | | | | Analyst: PC |
| Chloromethane | 0.50 | U | 0.20 | 0.50 | 1.0 | ug/L | 1 | 21-Sep-2023 14:04 |
| **cis-1,2-Dichloroethene** | **2.3** | | **0.20** | **0.50** | **1.0** | **ug/L** | 1 | 21-Sep-2023 14:04 |
| cis-1,3-Dichloropropene | 0.50 | U | 0.20 | 0.50 | 1.0 | ug/L | 1 | 21-Sep-2023 14:04 |
| Dibromochloromethane | 0.50 | U | 0.30 | 0.50 | 1.0 | ug/L | 1 | 21-Sep-2023 14:04 |
| Dibromomethane | 0.50 | U | 0.20 | 0.50 | 1.0 | ug/L | 1 | 21-Sep-2023 14:04 |
| Dichlorodifluoromethane | 0.50 | U | 0.30 | 0.50 | 1.0 | ug/L | 1 | 21-Sep-2023 14:04 |
| Ethylbenzene | 0.50 | U | 0.30 | 0.50 | 1.0 | ug/L | 1 | 21-Sep-2023 14:04 |
| Hexachlorobutadiene | 0.50 | U | 1.0 | 0.50 | 1.0 | ug/L | 1 | 21-Sep-2023 14:04 |
| Isopropylbenzene | 0.50 | U | 0.30 | 0.50 | 1.0 | ug/L | 1 | 21-Sep-2023 14:04 |
| m,p-Xylene | 1.0 | U | 0.50 | 1.0 | 2.0 | ug/L | 1 | 21-Sep-2023 14:04 |
| Methylene chloride | 2.0 | U | 0.40 | 2.0 | 2.0 | ug/L | 1 | 21-Sep-2023 14:04 |
| n-Butylbenzene | 0.50 | U | 0.40 | 0.50 | 1.0 | ug/L | 1 | 21-Sep-2023 14:04 |
| n-Propylbenzene | 0.50 | U | 0.30 | 0.50 | 1.0 | ug/L | 1 | 21-Sep-2023 14:04 |
| Naphthalene | 0.50 | U | 0.30 | 0.50 | 1.0 | ug/L | 1 | 21-Sep-2023 14:04 |
| o-Xylene | 0.50 | U | 0.30 | 0.50 | 1.0 | ug/L | 1 | 21-Sep-2023 14:04 |
| sec-Butylbenzene | 0.50 | U | 0.30 | 0.50 | 1.0 | ug/L | 1 | 21-Sep-2023 14:04 |
| Styrene | 0.50 | U | 0.30 | 0.50 | 1.0 | ug/L | 1 | 21-Sep-2023 14:04 |
| tert-Butylbenzene | 0.50 | U | 0.30 | 0.50 | 1.0 | ug/L | 1 | 21-Sep-2023 14:04 |
| Tetrachloroethene | 0.50 | U | 0.30 | 0.50 | 1.0 | ug/L | 1 | 21-Sep-2023 14:04 |
| Toluene | 0.50 | U | 0.20 | 0.50 | 1.0 | ug/L | 1 | 21-Sep-2023 14:04 |
| trans-1,2-Dichloroethene | 0.50 | U | 0.20 | 0.50 | 1.0 | ug/L | 1 | 21-Sep-2023 14:04 |
| trans-1,3-Dichloropropene | 0.50 | U | 0.20 | 0.50 | 1.0 | ug/L | 1 | 21-Sep-2023 14:04 |
| Trichloroethene | 0.50 | U | 0.20 | 0.50 | 1.0 | ug/L | 1 | 21-Sep-2023 14:04 |
| Trichlorofluoromethane | 0.50 | U | 0.30 | 0.50 | 1.0 | ug/L | 1 | 21-Sep-2023 14:04 |
| Vinyl chloride | 0.50 | U | 0.20 | 0.50 | 1.0 | ug/L | 1 | 21-Sep-2023 14:04 |
| *Surr: 1,2-Dichloroethane-d4* | *102* | | | **0** | *81-118* | *%REC* | *1* | *21-Sep-2023 14:04* |
| *Surr: 4-Bromofluorobenzene* | *85.2* | | | **0** | *85-114* | *%REC* | *1* | *21-Sep-2023 14:04* |
| *Surr: Dibromofluoromethane* | *100* | | | **0** | *80-119* | *%REC* | *1* | *21-Sep-2023 14:04* |
| *Surr: Toluene-d8* | *112* | | | **0** | *89-112* | *%REC* | *1* | *21-Sep-2023 14:04* |
| **ANIONS BY SW9056A** | | **Method:SW9056** | | | | | | Analyst: TH |
| **Chloride** | **1,000** | | **4.00** | **10.0** | **10.0** | **mg/L** | 20 | 29-Sep-2023 21:37 |
| **Sulfate** | **60.0** | | **0.200** | **0.500** | **0.500** | **mg/L** | 1 | 29-Sep-2023 21:31 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

**ALS Houston, US** Date: 30-Sep-23

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**

Project: GROUNDWATER TREATMENT PLANT BI-WEEKLY SAMPLES WorkOrder:HS23091194

Sample ID: Trip Blank Lab ID:HS23091194-02

Collection Date: 19-Sep-2023 00:00 Matrix:Water

| ANALYSES | RESULT | QUAL | DL | LOD | LOQ | UNITS | DILUTION FACTOR | DATE ANALYZED |
|---|---|---|---|---|---|---|---|---|
| **VOLATILES ORGANICS BY METHOD 8260C** | | **Method:SW8260** | | | | | | Analyst: PC |
| 1,1,1,2-Tetrachloroethane | 0.50 | U | 0.30 | 0.50 | 1.0 | ug/L | 1 | 21-Sep-2023 13:42 |
| 1,1,1-Trichloroethane | 0.50 | U | 0.20 | 0.50 | 1.0 | ug/L | 1 | 21-Sep-2023 13:42 |
| 1,1,2,2-Tetrachloroethane | 0.50 | U | 0.50 | 0.50 | 1.0 | ug/L | 1 | 21-Sep-2023 13:42 |
| 1,1,2-Trichloroethane | 0.50 | U | 0.30 | 0.50 | 1.0 | ug/L | 1 | 21-Sep-2023 13:42 |
| 1,1-Dichloroethane | 0.50 | U | 0.20 | 0.50 | 1.0 | ug/L | 1 | 21-Sep-2023 13:42 |
| 1,1-Dichloroethene | 0.50 | U | 0.20 | 0.50 | 1.0 | ug/L | 1 | 21-Sep-2023 13:42 |
| 1,1-Dichloropropene | 0.50 | U | 0.30 | 0.50 | 1.0 | ug/L | 1 | 21-Sep-2023 13:42 |
| 1,2,3-Trichlorobenzene | 0.50 | U | 0.40 | 0.50 | 1.0 | ug/L | 1 | 21-Sep-2023 13:42 |
| 1,2,3-Trichloropropane | 0.50 | U | 0.50 | 0.50 | 1.0 | ug/L | 1 | 21-Sep-2023 13:42 |
| 1,2,4-Trichlorobenzene | 0.50 | U | 0.50 | 0.50 | 1.0 | ug/L | 1 | 21-Sep-2023 13:42 |
| 1,2,4-Trimethylbenzene | 0.50 | U | 0.30 | 0.50 | 1.0 | ug/L | 1 | 21-Sep-2023 13:42 |
| 1,2-Dibromo-3-chloropropane | 0.50 | U | 0.20 | 0.50 | 1.0 | ug/L | 1 | 21-Sep-2023 13:42 |
| 1,2-Dibromoethane | 0.50 | U | 0.20 | 0.50 | 1.0 | ug/L | 1 | 21-Sep-2023 13:42 |
| 1,2-Dichlorobenzene | 0.50 | U | 0.50 | 0.50 | 1.0 | ug/L | 1 | 21-Sep-2023 13:42 |
| 1,2-Dichloroethane | 0.50 | U | 0.20 | 0.50 | 1.0 | ug/L | 1 | 21-Sep-2023 13:42 |
| 1,2-Dichloropropane | 0.50 | U | 0.50 | 0.50 | 1.0 | ug/L | 1 | 21-Sep-2023 13:42 |
| 1,3,5-Trimethylbenzene | 0.50 | U | 0.30 | 0.50 | 1.0 | ug/L | 1 | 21-Sep-2023 13:42 |
| 1,3-Dichlorobenzene | 0.50 | U | 0.40 | 0.50 | 1.0 | ug/L | 1 | 21-Sep-2023 13:42 |
| 1,3-Dichloropropane | 0.50 | U | 0.30 | 0.50 | 1.0 | ug/L | 1 | 21-Sep-2023 13:42 |
| 1,4-Dichlorobenzene | 0.50 | U | 0.40 | 0.50 | 1.0 | ug/L | 1 | 21-Sep-2023 13:42 |
| 2,2-Dichloropropane | 0.50 | U | 0.20 | 0.50 | 1.0 | ug/L | 1 | 21-Sep-2023 13:42 |
| 2-Butanone | 0.50 | U | 0.50 | 0.50 | 2.0 | ug/L | 1 | 21-Sep-2023 13:42 |
| 2-Chlorotoluene | 0.50 | U | 0.30 | 0.50 | 1.0 | ug/L | 1 | 21-Sep-2023 13:42 |
| 2-Hexanone | 2.0 | U | 1.0 | 2.0 | 2.0 | ug/L | 1 | 21-Sep-2023 13:42 |
| 4-Chlorotoluene | 0.50 | U | 0.40 | 0.50 | 1.0 | ug/L | 1 | 21-Sep-2023 13:42 |
| 4-Isopropyltoluene | 0.50 | U | 0.30 | 0.50 | 1.0 | ug/L | 1 | 21-Sep-2023 13:42 |
| 4-Methyl-2-pentanone | 2.0 | U | 0.70 | 2.0 | 2.0 | ug/L | 1 | 21-Sep-2023 13:42 |
| Acetone | 2.0 | U | 0.40 | 2.0 | 2.0 | ug/L | 1 | 21-Sep-2023 13:42 |
| Benzene | 0.50 | U | 0.20 | 0.50 | 1.0 | ug/L | 1 | 21-Sep-2023 13:42 |
| Bromobenzene | 0.50 | U | 0.40 | 0.50 | 1.0 | ug/L | 1 | 21-Sep-2023 13:42 |
| Bromochloromethane | 0.50 | U | 0.20 | 0.50 | 1.0 | ug/L | 1 | 21-Sep-2023 13:42 |
| Bromodichloromethane | 0.50 | U | 0.20 | 0.50 | 1.0 | ug/L | 1 | 21-Sep-2023 13:42 |
| Bromoform | 0.50 | U | 0.40 | 0.50 | 1.0 | ug/L | 1 | 21-Sep-2023 13:42 |
| Bromomethane | 0.50 | U | 0.40 | 0.50 | 1.0 | ug/L | 1 | 21-Sep-2023 13:42 |
| Carbon disulfide | 2.0 | U | 0.60 | 2.0 | 2.0 | ug/L | 1 | 21-Sep-2023 13:42 |
| Carbon tetrachloride | 0.50 | U | 0.50 | 0.50 | 1.0 | ug/L | 1 | 21-Sep-2023 13:42 |
| Chlorobenzene | 0.50 | U | 0.30 | 0.50 | 1.0 | ug/L | 1 | 21-Sep-2023 13:42 |
| Chloroethane | 0.50 | U | 0.30 | 0.50 | 1.0 | ug/L | 1 | 21-Sep-2023 13:42 |
| Chloroform | 0.50 | U | 0.20 | 0.50 | 1.0 | ug/L | 1 | 21-Sep-2023 13:42 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

**ALS Houston, US** Date: 30-Sep-23

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**

Project: GROUNDWATER TREATMENT PLANT BI-WEEKLY SAMPLES WorkOrder:HS23091194

Sample ID: Trip Blank Lab ID:HS23091194-02

Collection Date: 19-Sep-2023 00:00 Matrix:Water

| ANALYSES | RESULT | QUAL | DL | LOD | LOQ | UNITS | DILUTION FACTOR | DATE ANALYZED |
|---|---|---|---|---|---|---|---|---|
| **VOLATILES ORGANICS BY METHOD 8260C** | | **Method:SW8260** | | | | | | Analyst: PC |
| Chloromethane | 0.50 | U | 0.20 | 0.50 | 1.0 | ug/L | 1 | 21-Sep-2023 13:42 |
| cis-1,2-Dichloroethene | 0.50 | U | 0.20 | 0.50 | 1.0 | ug/L | 1 | 21-Sep-2023 13:42 |
| cis-1,3-Dichloropropene | 0.50 | U | 0.20 | 0.50 | 1.0 | ug/L | 1 | 21-Sep-2023 13:42 |
| Dibromochloromethane | 0.50 | U | 0.30 | 0.50 | 1.0 | ug/L | 1 | 21-Sep-2023 13:42 |
| Dibromomethane | 0.50 | U | 0.20 | 0.50 | 1.0 | ug/L | 1 | 21-Sep-2023 13:42 |
| Dichlorodifluoromethane | 0.50 | U | 0.30 | 0.50 | 1.0 | ug/L | 1 | 21-Sep-2023 13:42 |
| Ethylbenzene | 0.50 | U | 0.30 | 0.50 | 1.0 | ug/L | 1 | 21-Sep-2023 13:42 |
| Hexachlorobutadiene | 0.50 | U | 1.0 | 0.50 | 1.0 | ug/L | 1 | 21-Sep-2023 13:42 |
| Isopropylbenzene | 0.50 | U | 0.30 | 0.50 | 1.0 | ug/L | 1 | 21-Sep-2023 13:42 |
| m,p-Xylene | 1.0 | U | 0.50 | 1.0 | 2.0 | ug/L | 1 | 21-Sep-2023 13:42 |
| Methylene chloride | 2.0 | U | 0.40 | 2.0 | 2.0 | ug/L | 1 | 21-Sep-2023 13:42 |
| n-Butylbenzene | 0.50 | U | 0.40 | 0.50 | 1.0 | ug/L | 1 | 21-Sep-2023 13:42 |
| n-Propylbenzene | 0.50 | U | 0.30 | 0.50 | 1.0 | ug/L | 1 | 21-Sep-2023 13:42 |
| Naphthalene | 0.50 | U | 0.30 | 0.50 | 1.0 | ug/L | 1 | 21-Sep-2023 13:42 |
| o-Xylene | 0.50 | U | 0.30 | 0.50 | 1.0 | ug/L | 1 | 21-Sep-2023 13:42 |
| sec-Butylbenzene | 0.50 | U | 0.30 | 0.50 | 1.0 | ug/L | 1 | 21-Sep-2023 13:42 |
| Styrene | 0.50 | U | 0.30 | 0.50 | 1.0 | ug/L | 1 | 21-Sep-2023 13:42 |
| tert-Butylbenzene | 0.50 | U | 0.30 | 0.50 | 1.0 | ug/L | 1 | 21-Sep-2023 13:42 |
| Tetrachloroethene | 0.50 | U | 0.30 | 0.50 | 1.0 | ug/L | 1 | 21-Sep-2023 13:42 |
| Toluene | 0.50 | U | 0.20 | 0.50 | 1.0 | ug/L | 1 | 21-Sep-2023 13:42 |
| trans-1,2-Dichloroethene | 0.50 | U | 0.20 | 0.50 | 1.0 | ug/L | 1 | 21-Sep-2023 13:42 |
| trans-1,3-Dichloropropene | 0.50 | U | 0.20 | 0.50 | 1.0 | ug/L | 1 | 21-Sep-2023 13:42 |
| Trichloroethene | 0.50 | U | 0.20 | 0.50 | 1.0 | ug/L | 1 | 21-Sep-2023 13:42 |
| Trichlorofluoromethane | 0.50 | U | 0.30 | 0.50 | 1.0 | ug/L | 1 | 21-Sep-2023 13:42 |
| Vinyl chloride | 0.50 | U | 0.20 | 0.50 | 1.0 | ug/L | 1 | 21-Sep-2023 13:42 |
| *Surr: 1,2-Dichloroethane-d4* | *104* | | | **0** | *81-118* | *%REC* | *1* | *21-Sep-2023 13:42* |
| *Surr: 4-Bromofluorobenzene* | *85.2* | | | **0** | *85-114* | *%REC* | *1* | *21-Sep-2023 13:42* |
| *Surr: Dibromofluoromethane* | *101* | | | **0** | *80-119* | *%REC* | *1* | *21-Sep-2023 13:42* |
| *Surr: Toluene-d8* | *112* | | | **0** | *89-112* | *%REC* | *1* | *21-Sep-2023 13:42* |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

**ALS Houston, US** Date: 30-Sep-23

**Client:** Bhate Environmental Associates, Inc.
**Project:** GROUNDWATER TREATMENT PLANT BI-WEEKLY SAMPLES
**WorkOrder:** HS23091194

## DATES REPORT

| Sample ID | Client Samp ID | Collection Date | Leachate Date | Prep Date | Analysis Date | DF |
|---|---|---|---|---|---|---|
| **Batch ID:** R447039 ( 0 ) | **Test Name :** VOLATILES ORGANICS BY METHOD 8260C | | | | **Matrix:** Water | |
| HS23091194-01 | LH18/24-SP650_091923 | 19 Sep 2023 13:00 | | | 21 Sep 2023 14:04 | 1 |
| HS23091194-02 | Trip Blank | 19 Sep 2023 00:00 | | | 21 Sep 2023 13:42 | 1 |
| **Batch ID:** R447807 ( 0 ) | **Test Name :** ANIONS BY SW9056A | | | | **Matrix:** Water | |
| HS23091194-01 | LH18/24-SP650_091923 | 19 Sep 2023 13:00 | | | 29 Sep 2023 21:37 | 20 |
| HS23091194-01 | LH18/24-SP650_091923 | 19 Sep 2023 13:00 | | | 29 Sep 2023 21:31 | 1 |

**ALS Houston, US** Date: 30-Sep-23

**Client:** Bhate Environmental Associates, Inc.
**Project:** GROUNDWATER TREATMENT PLANT BI-WEEKLY SAMPLES
**WorkOrder:** HS23091194

**QC BATCH REPORT**

**Batch ID:** R447039 ( 0 ) **Instrument:** VOA9 **Method:** VOLATILES ORGANICS BY METHOD 8260C

**MBLK** Sample ID: **VBLKW-230921** Units: **ug/L** Analysis Date: **21-Sep-2023 13:20**
Client ID: Run ID: **VOA9_447039** SeqNo: **7558526** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | 0.50 | 1.0 | | | | | | | | U |
| 1,1,1-Trichloroethane | 0.50 | 1.0 | | | | | | | | U |
| 1,1,2,2-Tetrachloroethane | 0.50 | 1.0 | | | | | | | | U |
| 1,1,2-Trichloroethane | 0.50 | 1.0 | | | | | | | | U |
| 1,1-Dichloroethane | 0.50 | 1.0 | | | | | | | | U |
| 1,1-Dichloroethene | 0.50 | 1.0 | | | | | | | | U |
| 1,1-Dichloropropene | 0.50 | 1.0 | | | | | | | | U |
| 1,2,3-Trichlorobenzene | 0.50 | 1.0 | | | | | | | | U |
| 1,2,3-Trichloropropane | 0.50 | 1.0 | | | | | | | | U |
| 1,2,4-Trichlorobenzene | 0.50 | 1.0 | | | | | | | | U |
| 1,2,4-Trimethylbenzene | 0.50 | 1.0 | | | | | | | | U |
| 1,2-Dibromo-3-chloropropane | 0.50 | 1.0 | | | | | | | | U |
| 1,2-Dibromoethane | 0.50 | 1.0 | | | | | | | | U |
| 1,2-Dichlorobenzene | 0.50 | 1.0 | | | | | | | | U |
| 1,2-Dichloroethane | 0.50 | 1.0 | | | | | | | | U |
| 1,2-Dichloropropane | 0.50 | 1.0 | | | | | | | | U |
| 1,3,5-Trimethylbenzene | 0.50 | 1.0 | | | | | | | | U |
| 1,3-Dichlorobenzene | 0.50 | 1.0 | | | | | | | | U |
| 1,3-Dichloropropane | 0.50 | 1.0 | | | | | | | | U |
| 1,4-Dichlorobenzene | 0.50 | 1.0 | | | | | | | | U |
| 2,2-Dichloropropane | 0.50 | 1.0 | | | | | | | | U |
| 2-Butanone | 0.50 | 2.0 | | | | | | | | U |
| 2-Chlorotoluene | 0.50 | 1.0 | | | | | | | | U |
| 2-Hexanone | 2.0 | 2.0 | | | | | | | | U |
| 4-Chlorotoluene | 0.50 | 1.0 | | | | | | | | U |
| 4-Isopropyltoluene | 0.50 | 1.0 | | | | | | | | U |
| 4-Methyl-2-pentanone | 2.0 | 2.0 | | | | | | | | U |
| Acetone | 2.0 | 2.0 | | | | | | | | U |
| Benzene | 0.50 | 1.0 | | | | | | | | U |
| Bromobenzene | 0.50 | 1.0 | | | | | | | | U |
| Bromochloromethane | 0.50 | 1.0 | | | | | | | | U |
| Bromodichloromethane | 0.50 | 1.0 | | | | | | | | U |
| Bromoform | 0.50 | 1.0 | | | | | | | | U |
| Bromomethane | 0.50 | 1.0 | | | | | | | | U |

**ALS Houston, US** Date: 30-Sep-23

**Client:** Bhate Environmental Associates, Inc.
**Project:** GROUNDWATER TREATMENT PLANT BI-WEEKLY SAMPLES
**WorkOrder:** HS23091194

**QC BATCH REPORT**

**Batch ID:** R447039 ( 0 ) **Instrument:** VOA9 **Method:** VOLATILES ORGANICS BY METHOD 8260C

**MBLK** Sample ID: **VBLKW-230921** Units: **ug/L** Analysis Date: **21-Sep-2023 13:20**
Client ID: Run ID: **VOA9_447039** SeqNo: **7558526** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Carbon disulfide | 2.0 | 2.0 | | | | | | | | U |
| Carbon tetrachloride | 0.50 | 1.0 | | | | | | | | U |
| Chlorobenzene | 0.50 | 1.0 | | | | | | | | U |
| Chloroethane | 0.50 | 1.0 | | | | | | | | U |
| Chloroform | 0.50 | 1.0 | | | | | | | | U |
| Chloromethane | 0.50 | 1.0 | | | | | | | | U |
| cis-1,2-Dichloroethene | 0.50 | 1.0 | | | | | | | | U |
| cis-1,3-Dichloropropene | 0.50 | 1.0 | | | | | | | | U |
| Dibromochloromethane | 0.50 | 1.0 | | | | | | | | U |
| Dibromomethane | 0.50 | 1.0 | | | | | | | | U |
| Dichlorodifluoromethane | 0.50 | 1.0 | | | | | | | | U |
| Ethylbenzene | 0.50 | 1.0 | | | | | | | | U |
| Hexachlorobutadiene | 0.50 | 1.0 | | | | | | | | U |
| Isopropylbenzene | 0.50 | 1.0 | | | | | | | | U |
| m,p-Xylene | 1.0 | 2.0 | | | | | | | | U |
| Methylene chloride | 2.0 | 2.0 | | | | | | | | U |
| Naphthalene | 0.50 | 1.0 | | | | | | | | U |
| n-Butylbenzene | 0.50 | 1.0 | | | | | | | | U |
| n-Propylbenzene | 0.50 | 1.0 | | | | | | | | U |
| o-Xylene | 0.50 | 1.0 | | | | | | | | U |
| sec-Butylbenzene | 0.50 | 1.0 | | | | | | | | U |
| Styrene | 0.50 | 1.0 | | | | | | | | U |
| tert-Butylbenzene | 0.50 | 1.0 | | | | | | | | U |
| Tetrachloroethene | 0.50 | 1.0 | | | | | | | | U |
| Toluene | 0.50 | 1.0 | | | | | | | | U |
| trans-1,2-Dichloroethene | 0.50 | 1.0 | | | | | | | | U |
| trans-1,3-Dichloropropene | 0.50 | 1.0 | | | | | | | | U |
| Trichloroethene | 0.50 | 1.0 | | | | | | | | U |
| Trichlorofluoromethane | 0.50 | 1.0 | | | | | | | | U |
| Vinyl chloride | 0.50 | 1.0 | | | | | | | | U |
| *Surr: 1,2-Dichloroethane-d4* | *49.35* | *1.0* | *50* | *0* | *98.7* | *81 - 118* | | | | |
| *Surr: 4-Bromofluorobenzene* | *42.53* | *1.0* | *50* | *0* | *85.1* | *85 - 114* | | | | |
| *Surr: Dibromofluoromethane* | *53.75* | *1.0* | *50* | *0* | *108* | *80 - 119* | | | | |
| *Surr: Toluene-d8* | *55.83* | *1.0* | *50* | *0* | *112* | *89 - 112* | | | | |

**ALS Houston, US** Date: 30-Sep-23

**Client:** Bhate Environmental Associates, Inc.
**Project:** GROUNDWATER TREATMENT PLANT BI-WEEKLY SAMPLES
**WorkOrder:** HS23091194

**QC BATCH REPORT**

**Batch ID:** R447039 ( 0 ) **Instrument:** VOA9 **Method:** VOLATILES ORGANICS BY METHOD 8260C

**LCS** Sample ID: **VLCSW-230921** Units: **ug/L** Analysis Date: **21-Sep-2023 12:13**
Client ID: Run ID: **VOA9_447039** SeqNo: **7558525** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | 19.91 | 1.0 | 20 | 0 | 99.6 | 78 - 124 | | | | |
| 1,1,1-Trichloroethane | 23.98 | 1.0 | 20 | 0 | 120 | 74 - 131 | | | | |
| 1,1,2,2-Tetrachloroethane | 21.06 | 1.0 | 20 | 0 | 105 | 71 - 121 | | | | |
| 1,1,2-Trichloroethane | 19.87 | 1.0 | 20 | 0 | 99.4 | 80 - 119 | | | | |
| 1,1-Dichloroethane | 22.37 | 1.0 | 20 | 0 | 112 | 77 - 125 | | | | |
| 1,1-Dichloroethene | 20.75 | 1.0 | 20 | 0 | 104 | 71 - 131 | | | | |
| 1,1-Dichloropropene | 20.07 | 1.0 | 20 | 0 | 100 | 78 - 125 | | | | |
| 1,2,3-Trichlorobenzene | 21.43 | 1.0 | 20 | 0 | 107 | 69 - 129 | | | | |
| 1,2,3-Trichloropropane | 21.09 | 1.0 | 20 | 0 | 105 | 73 - 122 | | | | |
| 1,2,4-Trichlorobenzene | 19.71 | 1.0 | 20 | 0 | 98.5 | 69 - 130 | | | | |
| 1,2,4-Trimethylbenzene | 22.47 | 1.0 | 20 | 0 | 112 | 76 - 124 | | | | |
| 1,2-Dibromo-3-chloropropane | 16.35 | 1.0 | 20 | 0 | 81.7 | 62 - 128 | | | | |
| 1,2-Dibromoethane | 20.37 | 1.0 | 20 | 0 | 102 | 77 - 121 | | | | |
| 1,2-Dichlorobenzene | 19.97 | 1.0 | 20 | 0 | 99.8 | 80 - 119 | | | | |
| 1,2-Dichloroethane | 20.46 | 1.0 | 20 | 0 | 102 | 73 - 128 | | | | |
| 1,2-Dichloropropane | 21.69 | 1.0 | 20 | 0 | 108 | 78 - 122 | | | | |
| 1,3,5-Trimethylbenzene | 21.33 | 1.0 | 20 | 0 | 107 | 75 - 124 | | | | |
| 1,3-Dichlorobenzene | 20.66 | 1.0 | 20 | 0 | 103 | 80 - 119 | | | | |
| 1,3-Dichloropropane | 21.52 | 1.0 | 20 | 0 | 108 | 80 - 119 | | | | |
| 1,4-Dichlorobenzene | 19.31 | 1.0 | 20 | 0 | 96.5 | 79 - 118 | | | | |
| 2,2-Dichloropropane | 22.33 | 1.0 | 20 | 0 | 112 | 60 - 139 | | | | |
| 2-Butanone | 44.62 | 2.0 | 40 | 0 | 112 | 56 - 143 | | | | |
| 2-Chlorotoluene | 21.19 | 1.0 | 20 | 0 | 106 | 79 - 122 | | | | |
| 2-Hexanone | 43.25 | 2.0 | 40 | 0 | 108 | 57 - 139 | | | | |
| 4-Chlorotoluene | 21.55 | 1.0 | 20 | 0 | 108 | 78 - 122 | | | | |
| 4-Isopropyltoluene | 20.69 | 1.0 | 20 | 0 | 103 | 77 - 127 | | | | |
| 4-Methyl-2-pentanone | 43.32 | 2.0 | 40 | 0 | 108 | 67 - 130 | | | | |
| Acetone | 46.86 | 2.0 | 40 | 0 | 117 | 39 - 160 | | | | |
| Benzene | 20.52 | 1.0 | 20 | 0 | 103 | 79 - 120 | | | | |
| Bromobenzene | 20.27 | 1.0 | 20 | 0 | 101 | 80 - 120 | | | | |
| Bromochloromethane | 21.51 | 1.0 | 20 | 0 | 108 | 78 - 123 | | | | |
| Bromodichloromethane | 19.68 | 1.0 | 20 | 0 | 98.4 | 79 - 125 | | | | |
| Bromoform | 18.65 | 1.0 | 20 | 0 | 93.3 | 66 - 130 | | | | |
| Bromomethane | 25.86 | 1.0 | 20 | 0 | 129 | 53 - 141 | | | | |

**ALS Houston, US** Date: 30-Sep-23

**Client:** Bhate Environmental Associates, Inc.
**Project:** GROUNDWATER TREATMENT PLANT BI-WEEKLY SAMPLES
**WorkOrder:** HS23091194

**QC BATCH REPORT**

**Batch ID:** R447039 ( 0 ) **Instrument:** VOA9 **Method:** VOLATILES ORGANICS BY METHOD 8260C

**LCS** Sample ID: **VLCSW-230921** Units: **ug/L** Analysis Date: **21-Sep-2023 12:13**
Client ID: Run ID: **VOA9_447039** SeqNo: **7558525** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Carbon disulfide | 45.03 | 2.0 | 40 | 0 | 113 | 64 - 133 | | | | |
| Carbon tetrachloride | 19.39 | 1.0 | 20 | 0 | 97.0 | 72 - 136 | | | | |
| Chlorobenzene | 20.35 | 1.0 | 20 | 0 | 102 | 82 - 118 | | | | |
| Chloroethane | 22.96 | 1.0 | 20 | 0 | 115 | 60 - 138 | | | | |
| Chloroform | 22.83 | 1.0 | 20 | 0 | 114 | 79 - 124 | | | | |
| Chloromethane | 21.81 | 1.0 | 20 | 0 | 109 | 50 - 139 | | | | |
| cis-1,2-Dichloroethene | 22.53 | 1.0 | 20 | 0 | 113 | 78 - 123 | | | | |
| cis-1,3-Dichloropropene | 18.46 | 1.0 | 20 | 0 | 92.3 | 75 - 124 | | | | |
| Dibromochloromethane | 19.41 | 1.0 | 20 | 0 | 97.1 | 74 - 126 | | | | |
| Dibromomethane | 19.04 | 1.0 | 20 | 0 | 95.2 | 79 - 123 | | | | |
| Dichlorodifluoromethane | 18.46 | 1.0 | 20 | 0 | 92.3 | 32 - 152 | | | | |
| Ethylbenzene | 21.45 | 1.0 | 20 | 0 | 107 | 79 - 121 | | | | |
| Hexachlorobutadiene | 20.92 | 1.0 | 20 | 0 | 105 | 66 - 134 | | | | |
| Isopropylbenzene | 21.67 | 1.0 | 20 | 0 | 108 | 72 - 131 | | | | |
| m,p-Xylene | 42.19 | 2.0 | 40 | 0 | 105 | 80 - 121 | | | | |
| Methylene chloride | 24.4 | 2.0 | 20 | 0 | 122 | 74 - 124 | | | | |
| Naphthalene | 18.57 | 1.0 | 20 | 0 | 92.8 | 61 - 128 | | | | |
| n-Butylbenzene | 21.74 | 1.0 | 20 | 0 | 109 | 75 - 128 | | | | |
| n-Propylbenzene | 21.3 | 1.0 | 20 | 0 | 106 | 76 - 126 | | | | |
| o-Xylene | 20.16 | 1.0 | 20 | 0 | 101 | 78 - 122 | | | | |
| sec-Butylbenzene | 21.48 | 1.0 | 20 | 0 | 107 | 77 - 126 | | | | |
| Styrene | 20.05 | 1.0 | 20 | 0 | 100 | 78 - 123 | | | | |
| tert-Butylbenzene | 21.39 | 1.0 | 20 | 0 | 107 | 78 - 124 | | | | |
| Tetrachloroethene | 20.76 | 1.0 | 20 | 0 | 104 | 74 - 129 | | | | |
| Toluene | 22.29 | 1.0 | 20 | 0 | 111 | 80 - 121 | | | | |
| trans-1,2-Dichloroethene | 22.21 | 1.0 | 20 | 0 | 111 | 75 - 124 | | | | |
| trans-1,3-Dichloropropene | 18.09 | 1.0 | 20 | 0 | 90.4 | 73 - 127 | | | | |
| Trichloroethene | 18.3 | 1.0 | 20 | 0 | 91.5 | 79 - 123 | | | | |
| Trichlorofluoromethane | 22.67 | 1.0 | 20 | 0 | 113 | 65 - 141 | | | | |
| Vinyl chloride | 21.8 | 1.0 | 20 | 0 | 109 | 58 - 137 | | | | |
| *Surr: 1,2-Dichloroethane-d4* | *53.92* | *1.0* | *50* | *0* | *108* | *81 - 118* | | | | |
| *Surr: 4-Bromofluorobenzene* | *52.3* | *1.0* | *50* | *0* | *105* | *85 - 114* | | | | |
| *Surr: Dibromofluoromethane* | *59.5* | *1.0* | *50* | *0* | *119* | *80 - 119* | | | | |
| *Surr: Toluene-d8* | *54.07* | *1.0* | *50* | *0* | *108* | *89 - 112* | | | | |

**ALS Houston, US** Date: 30-Sep-23

**Client:** Bhate Environmental Associates, Inc.
**Project:** GROUNDWATER TREATMENT PLANT BI-WEEKLY SAMPLES
**WorkOrder:** HS23091194

**QC BATCH REPORT**

**Batch ID:** R447039 ( 0 ) **Instrument:** VOA9 **Method:** VOLATILES ORGANICS BY METHOD 8260C

**MS** Sample ID: **HS23091194-01MS** Units: **ug/L** Analysis Date: **21-Sep-2023 15:11**
Client ID: **LH18/24-SP650_091923** Run ID: **VOA9_447039** SeqNo: **7558529** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | 21.77 | 1.0 | 20 | 0 | 109 | 78 - 124 | | | | |
| 1,1,1-Trichloroethane | 22.3 | 1.0 | 20 | 0 | 112 | 74 - 131 | | | | |
| 1,1,2,2-Tetrachloroethane | 21.15 | 1.0 | 20 | 0 | 106 | 71 - 121 | | | | |
| 1,1,2-Trichloroethane | 22.39 | 1.0 | 20 | 0 | 112 | 80 - 119 | | | | |
| 1,1-Dichloroethane | 24.01 | 1.0 | 20 | 0 | 120 | 77 - 125 | | | | |
| 1,1-Dichloroethene | 23.46 | 1.0 | 20 | 0 | 117 | 71 - 131 | | | | |
| 1,1-Dichloropropene | 24 | 1.0 | 20 | 0 | 120 | 78 - 125 | | | | |
| 1,2,3-Trichlorobenzene | 22.39 | 1.0 | 20 | 0 | 112 | 69 - 129 | | | | |
| 1,2,3-Trichloropropane | 21.16 | 1.0 | 20 | 0 | 106 | 73 - 122 | | | | |
| 1,2,4-Trichlorobenzene | 21.28 | 1.0 | 20 | 0 | 106 | 69 - 130 | | | | |
| 1,2,4-Trimethylbenzene | 24.25 | 1.0 | 20 | 0 | 121 | 76 - 124 | | | | |
| 1,2-Dibromo-3-chloropropane | 17.81 | 1.0 | 20 | 0 | 89.0 | 62 - 128 | | | | |
| 1,2-Dibromoethane | 22.47 | 1.0 | 20 | 0 | 112 | 77 - 121 | | | | |
| 1,2-Dichlorobenzene | 21.61 | 1.0 | 20 | 0 | 108 | 80 - 119 | | | | |
| 1,2-Dichloroethane | 22.22 | 1.0 | 20 | 0 | 111 | 73 - 128 | | | | |
| 1,2-Dichloropropane | 24.55 | 1.0 | 20 | 0 | 123 | 78 - 122 | | | | S |
| 1,3,5-Trimethylbenzene | 24.36 | 1.0 | 20 | 0 | 122 | 75 - 124 | | | | |
| 1,3-Dichlorobenzene | 21.83 | 1.0 | 20 | 0 | 109 | 80 - 119 | | | | |
| 1,3-Dichloropropane | 22.97 | 1.0 | 20 | 0 | 115 | 80 - 119 | | | | |
| 1,4-Dichlorobenzene | 21.48 | 1.0 | 20 | 0 | 107 | 79 - 118 | | | | |
| 2,2-Dichloropropane | 25.09 | 1.0 | 20 | 0 | 125 | 60 - 139 | | | | |
| 2-Butanone | 43.61 | 2.0 | 40 | 0 | 109 | 56 - 143 | | | | |
| 2-Chlorotoluene | 24.07 | 1.0 | 20 | 0 | 120 | 79 - 122 | | | | |
| 2-Hexanone | 45.24 | 2.0 | 40 | 0 | 113 | 57 - 139 | | | | |
| 4-Chlorotoluene | 24.19 | 1.0 | 20 | 0 | 121 | 78 - 122 | | | | |
| 4-Isopropyltoluene | 25.13 | 1.0 | 20 | 0 | 126 | 77 - 127 | | | | |
| 4-Methyl-2-pentanone | 42.73 | 2.0 | 40 | 0 | 107 | 67 - 130 | | | | |
| Acetone | 38.63 | 2.0 | 40 | 0 | 96.6 | 39 - 160 | | | | |
| Benzene | 23.38 | 1.0 | 20 | 0 | 117 | 79 - 120 | | | | |
| Bromobenzene | 21.98 | 1.0 | 20 | 0 | 110 | 80 - 120 | | | | |
| Bromochloromethane | 21.81 | 1.0 | 20 | 0 | 109 | 78 - 123 | | | | |
| Bromodichloromethane | 21.36 | 1.0 | 20 | 0 | 107 | 79 - 125 | | | | |
| Bromoform | 19.38 | 1.0 | 20 | 0 | 96.9 | 66 - 130 | | | | |
| Bromomethane | 26.4 | 1.0 | 20 | 0 | 132 | 53 - 141 | | | | |

**ALS Houston, US** Date: 30-Sep-23

**Client:** Bhate Environmental Associates, Inc.
**Project:** GROUNDWATER TREATMENT PLANT BI-WEEKLY SAMPLES
**WorkOrder:** HS23091194

**QC BATCH REPORT**

**Batch ID:** R447039 ( 0 ) **Instrument:** VOA9 **Method:** VOLATILES ORGANICS BY METHOD 8260C

**MS** Sample ID: **HS23091194-01MS** Units: **ug/L** Analysis Date: **21-Sep-2023 15:11**
Client ID: **LH18/24-SP650_091923** Run ID: **VOA9_447039** SeqNo: **7558529** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Carbon disulfide | 50.9 | 2.0 | 40 | 0 | 127 | 64 - 133 | | | | |
| Carbon tetrachloride | 25.3 | 1.0 | 20 | 0 | 126 | 72 - 136 | | | | |
| Chlorobenzene | 22.91 | 1.0 | 20 | 0 | 115 | 82 - 118 | | | | |
| Chloroethane | 24.68 | 1.0 | 20 | 0 | 123 | 60 - 138 | | | | |
| Chloroform | 23.67 | 1.0 | 20 | 0 | 118 | 79 - 124 | | | | |
| Chloromethane | 21.61 | 1.0 | 20 | 0 | 108 | 50 - 139 | | | | |
| cis-1,2-Dichloroethene | 25.89 | 1.0 | 20 | 2.31 | 118 | 78 - 123 | | | | |
| cis-1,3-Dichloropropene | 19.46 | 1.0 | 20 | 0 | 97.3 | 75 - 124 | | | | |
| Dibromochloromethane | 21 | 1.0 | 20 | 0 | 105 | 74 - 126 | | | | |
| Dibromomethane | 21.61 | 1.0 | 20 | 0 | 108 | 79 - 123 | | | | |
| Dichlorodifluoromethane | 18.84 | 1.0 | 20 | 0 | 94.2 | 32 - 152 | | | | |
| Ethylbenzene | 24.84 | 1.0 | 20 | 0 | 124 | 79 - 121 | | | | S |
| Hexachlorobutadiene | 24.39 | 1.0 | 20 | 0 | 122 | 66 - 134 | | | | |
| Isopropylbenzene | 25.54 | 1.0 | 20 | 0 | 128 | 72 - 131 | | | | |
| m,p-Xylene | 50.09 | 2.0 | 40 | 0 | 125 | 80 - 121 | | | | S |
| Methylene chloride | 24.18 | 2.0 | 20 | 0 | 121 | 74 - 124 | | | | |
| Naphthalene | 19.76 | 1.0 | 20 | 0 | 98.8 | 61 - 128 | | | | |
| n-Butylbenzene | 25.47 | 1.0 | 20 | 0 | 127 | 75 - 128 | | | | |
| n-Propylbenzene | 23.89 | 1.0 | 20 | 0 | 119 | 76 - 126 | | | | |
| o-Xylene | 23.15 | 1.0 | 20 | 0 | 116 | 78 - 122 | | | | |
| sec-Butylbenzene | 24.21 | 1.0 | 20 | 0 | 121 | 77 - 126 | | | | |
| Styrene | 21.52 | 1.0 | 20 | 0 | 108 | 78 - 123 | | | | |
| tert-Butylbenzene | 24.17 | 1.0 | 20 | 0 | 121 | 78 - 124 | | | | |
| Tetrachloroethene | 24.74 | 1.0 | 20 | 0 | 124 | 74 - 129 | | | | |
| Toluene | 25.59 | 1.0 | 20 | 0 | 128 | 80 - 121 | | | | S |
| trans-1,2-Dichloroethene | 24.82 | 1.0 | 20 | 0 | 124 | 75 - 124 | | | | S |
| trans-1,3-Dichloropropene | 19.21 | 1.0 | 20 | 0 | 96.1 | 73 - 127 | | | | |
| Trichloroethene | 21.84 | 1.0 | 20 | 0 | 109 | 79 - 123 | | | | |
| Trichlorofluoromethane | 25.66 | 1.0 | 20 | 0 | 128 | 65 - 141 | | | | |
| Vinyl chloride | 23.94 | 1.0 | 20 | 0 | 120 | 58 - 137 | | | | |
| *Surr: 1,2-Dichloroethane-d4* | *51.23* | *1.0* | *50* | *0* | *102* | *81 - 118* | | | | |
| *Surr: 4-Bromofluorobenzene* | *50.87* | *1.0* | *50* | *0* | *102* | *85 - 114* | | | | |
| *Surr: Dibromofluoromethane* | *50.4* | *1.0* | *50* | *0* | *101* | *80 - 119* | | | | |
| *Surr: Toluene-d8* | *56.96* | *1.0* | *50* | *0* | *114* | *89 - 112* | | | | S |

**ALS Houston, US** Date: 30-Sep-23

**Client:** Bhate Environmental Associates, Inc.
**Project:** GROUNDWATER TREATMENT PLANT BI-WEEKLY SAMPLES
**WorkOrder:** HS23091194

**QC BATCH REPORT**

**Batch ID:** R447039 ( 0 ) **Instrument:** VOA9 **Method:** VOLATILES ORGANICS BY METHOD 8260C

**MSD** Sample ID: **HS23091194-01MSD** Units: **ug/L** Analysis Date: **21-Sep-2023 15:34**
Client ID: **LH18/24-SP650_091923** Run ID: **VOA9_447039** SeqNo: **7558530** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | 21.05 | 1.0 | 20 | 0 | 105 | 78 - 124 | 21.77 | 3.38 | 20 | |
| 1,1,1-Trichloroethane | 22.06 | 1.0 | 20 | 0 | 110 | 74 - 131 | 22.3 | 1.12 | 20 | |
| 1,1,2,2-Tetrachloroethane | 21.18 | 1.0 | 20 | 0 | 106 | 71 - 121 | 21.15 | 0.157 | 20 | |
| 1,1,2-Trichloroethane | 21.18 | 1.0 | 20 | 0 | 106 | 80 - 119 | 22.39 | 5.54 | 20 | |
| 1,1-Dichloroethane | 23.26 | 1.0 | 20 | 0 | 116 | 77 - 125 | 24.01 | 3.14 | 20 | |
| 1,1-Dichloroethene | 22.75 | 1.0 | 20 | 0 | 114 | 71 - 131 | 23.46 | 3.07 | 20 | |
| 1,1-Dichloropropene | 23.22 | 1.0 | 20 | 0 | 116 | 78 - 125 | 24 | 3.31 | 20 | |
| 1,2,3-Trichlorobenzene | 22.96 | 1.0 | 20 | 0 | 115 | 69 - 129 | 22.39 | 2.49 | 20 | |
| 1,2,3-Trichloropropane | 22.24 | 1.0 | 20 | 0 | 111 | 73 - 122 | 21.16 | 4.97 | 20 | |
| 1,2,4-Trichlorobenzene | 21.25 | 1.0 | 20 | 0 | 106 | 69 - 130 | 21.28 | 0.146 | 20 | |
| 1,2,4-Trimethylbenzene | 24.78 | 1.0 | 20 | 0 | 124 | 76 - 124 | 24.25 | 2.14 | 20 | |
| 1,2-Dibromo-3-chloropropane | 18.62 | 1.0 | 20 | 0 | 93.1 | 62 - 128 | 17.81 | 4.47 | 20 | |
| 1,2-Dibromoethane | 21.66 | 1.0 | 20 | 0 | 108 | 77 - 121 | 22.47 | 3.65 | 20 | |
| 1,2-Dichlorobenzene | 21.23 | 1.0 | 20 | 0 | 106 | 80 - 119 | 21.61 | 1.77 | 20 | |
| 1,2-Dichloroethane | 21.43 | 1.0 | 20 | 0 | 107 | 73 - 128 | 22.22 | 3.58 | 20 | |
| 1,2-Dichloropropane | 23.71 | 1.0 | 20 | 0 | 119 | 78 - 122 | 24.55 | 3.48 | 20 | |
| 1,3,5-Trimethylbenzene | 24.21 | 1.0 | 20 | 0 | 121 | 75 - 124 | 24.36 | 0.594 | 20 | |
| 1,3-Dichlorobenzene | 21.61 | 1.0 | 20 | 0 | 108 | 80 - 119 | 21.83 | 1 | 20 | |
| 1,3-Dichloropropane | 22.13 | 1.0 | 20 | 0 | 111 | 80 - 119 | 22.97 | 3.74 | 20 | |
| 1,4-Dichlorobenzene | 20.84 | 1.0 | 20 | 0 | 104 | 79 - 118 | 21.48 | 3.02 | 20 | |
| 2,2-Dichloropropane | 24.58 | 1.0 | 20 | 0 | 123 | 60 - 139 | 25.09 | 2.09 | 20 | |
| 2-Butanone | 45.95 | 2.0 | 40 | 0 | 115 | 56 - 143 | 43.61 | 5.24 | 20 | |
| 2-Chlorotoluene | 24.01 | 1.0 | 20 | 0 | 120 | 79 - 122 | 24.07 | 0.215 | 20 | |
| 2-Hexanone | 49 | 2.0 | 40 | 0 | 122 | 57 - 139 | 45.24 | 7.97 | 20 | |
| 4-Chlorotoluene | 23.76 | 1.0 | 20 | 0 | 119 | 78 - 122 | 24.19 | 1.82 | 20 | |
| 4-Isopropyltoluene | 25.5 | 1.0 | 20 | 0 | 127 | 77 - 127 | 25.13 | 1.45 | 20 | S |
| 4-Methyl-2-pentanone | 44.27 | 2.0 | 40 | 0 | 111 | 67 - 130 | 42.73 | 3.53 | 20 | |
| Acetone | 40.89 | 2.0 | 40 | 0 | 102 | 39 - 160 | 38.63 | 5.69 | 20 | |
| Benzene | 22.41 | 1.0 | 20 | 0 | 112 | 79 - 120 | 23.38 | 4.23 | 20 | |
| Bromobenzene | 21.41 | 1.0 | 20 | 0 | 107 | 80 - 120 | 21.98 | 2.6 | 20 | |
| Bromochloromethane | 21.25 | 1.0 | 20 | 0 | 106 | 78 - 123 | 21.81 | 2.6 | 20 | |
| Bromodichloromethane | 20.77 | 1.0 | 20 | 0 | 104 | 79 - 125 | 21.36 | 2.82 | 20 | |
| Bromoform | 19.19 | 1.0 | 20 | 0 | 95.9 | 66 - 130 | 19.38 | 1.02 | 20 | |
| Bromomethane | 25.31 | 1.0 | 20 | 0 | 127 | 53 - 141 | 26.4 | 4.23 | 20 | |

**ALS Houston, US** Date: 30-Sep-23

**Client:** Bhate Environmental Associates, Inc.
**Project:** GROUNDWATER TREATMENT PLANT BI-WEEKLY SAMPLES
**WorkOrder:** HS23091194

**QC BATCH REPORT**

**Batch ID:** R447039 ( 0 ) **Instrument:** VOA9 **Method:** VOLATILES ORGANICS BY METHOD 8260C

**MSD** Sample ID: **HS23091194-01MSD** Units: **ug/L** Analysis Date: **21-Sep-2023 15:34**
Client ID: **LH18/24-SP650_091923** Run ID: **VOA9_447039** SeqNo: **7558530** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Carbon disulfide | 50.22 | 2.0 | 40 | 0 | 126 | 64 - 133 | 50.9 | 1.35 | 20 | |
| Carbon tetrachloride | 23.33 | 1.0 | 20 | 0 | 117 | 72 - 136 | 25.3 | 8.1 | 20 | |
| Chlorobenzene | 21.82 | 1.0 | 20 | 0 | 109 | 82 - 118 | 22.91 | 4.86 | 20 | |
| Chloroethane | 26.01 | 1.0 | 20 | 0 | 130 | 60 - 138 | 24.68 | 5.25 | 20 | |
| Chloroform | 23.1 | 1.0 | 20 | 0 | 116 | 79 - 124 | 23.67 | 2.41 | 20 | |
| Chloromethane | 21.52 | 1.0 | 20 | 0 | 108 | 50 - 139 | 21.61 | 0.442 | 20 | |
| cis-1,2-Dichloroethene | 25.61 | 1.0 | 20 | 2.31 | 117 | 78 - 123 | 25.89 | 1.07 | 20 | |
| cis-1,3-Dichloropropene | 19.24 | 1.0 | 20 | 0 | 96.2 | 75 - 124 | 19.46 | 1.12 | 20 | |
| Dibromochloromethane | 20.04 | 1.0 | 20 | 0 | 100 | 74 - 126 | 21 | 4.67 | 20 | |
| Dibromomethane | 20.95 | 1.0 | 20 | 0 | 105 | 79 - 123 | 21.61 | 3.11 | 20 | |
| Dichlorodifluoromethane | 17.81 | 1.0 | 20 | 0 | 89.1 | 32 - 152 | 18.84 | 5.6 | 20 | |
| Ethylbenzene | 23.74 | 1.0 | 20 | 0 | 119 | 79 - 121 | 24.84 | 4.56 | 20 | |
| Hexachlorobutadiene | 23.12 | 1.0 | 20 | 0 | 116 | 66 - 134 | 24.39 | 5.36 | 20 | |
| Isopropylbenzene | 24.26 | 1.0 | 20 | 0 | 121 | 72 - 131 | 25.54 | 5.12 | 20 | |
| m,p-Xylene | 48.19 | 2.0 | 40 | 0 | 120 | 80 - 121 | 50.09 | 3.86 | 20 | |
| Methylene chloride | 23.07 | 2.0 | 20 | 0 | 115 | 74 - 124 | 24.18 | 4.68 | 20 | |
| Naphthalene | 20.86 | 1.0 | 20 | 0 | 104 | 61 - 128 | 19.76 | 5.42 | 20 | |
| n-Butylbenzene | 25.2 | 1.0 | 20 | 0 | 126 | 75 - 128 | 25.47 | 1.06 | 20 | |
| n-Propylbenzene | 24.22 | 1.0 | 20 | 0 | 121 | 76 - 126 | 23.89 | 1.36 | 20 | |
| o-Xylene | 21.63 | 1.0 | 20 | 0 | 108 | 78 - 122 | 23.15 | 6.8 | 20 | |
| sec-Butylbenzene | 24.23 | 1.0 | 20 | 0 | 121 | 77 - 126 | 24.21 | 0.0859 | 20 | |
| Styrene | 20.6 | 1.0 | 20 | 0 | 103 | 78 - 123 | 21.52 | 4.36 | 20 | |
| tert-Butylbenzene | 24.08 | 1.0 | 20 | 0 | 120 | 78 - 124 | 24.17 | 0.385 | 20 | |
| Tetrachloroethene | 23.63 | 1.0 | 20 | 0 | 118 | 74 - 129 | 24.74 | 4.59 | 20 | |
| Toluene | 24.75 | 1.0 | 20 | 0 | 124 | 80 - 121 | 25.59 | 3.33 | 20 | S |
| trans-1,2-Dichloroethene | 23.75 | 1.0 | 20 | 0 | 119 | 75 - 124 | 24.82 | 4.4 | 20 | |
| trans-1,3-Dichloropropene | 18.96 | 1.0 | 20 | 0 | 94.8 | 73 - 127 | 19.21 | 1.34 | 20 | |
| Trichloroethene | 21.25 | 1.0 | 20 | 0 | 106 | 79 - 123 | 21.84 | 2.7 | 20 | |
| Trichlorofluoromethane | 24.39 | 1.0 | 20 | 0 | 122 | 65 - 141 | 25.66 | 5.06 | 20 | |
| Vinyl chloride | 24.47 | 1.0 | 20 | 0 | 122 | 58 - 137 | 23.94 | 2.22 | 20 | |
| *Surr: 1,2-Dichloroethane-d4* | *51.89* | *1.0* | *50* | *0* | *104* | *81 - 118* | *51.23* | *1.3* | *20* | |
| *Surr: 4-Bromofluorobenzene* | *48.34* | *1.0* | *50* | *0* | *96.7* | *85 - 114* | *50.87* | *5.1* | *20* | |
| *Surr: Dibromofluoromethane* | *50.21* | *1.0* | *50* | *0* | *100* | *80 - 119* | *50.4* | *0.392* | *20* | |
| *Surr: Toluene-d8* | *57.67* | *1.0* | *50* | *0* | *115* | *89 - 112* | *56.96* | *1.24* | *20* | S |

**ALS Houston, US** Date: 30-Sep-23

| | |
|---|---|
| **Client:** | Bhate Environmental Associates, Inc. |
| **Project:** | GROUNDWATER TREATMENT PLANT BI-WEEKLY SAMPLES |
| **WorkOrder:** | HS23091194 |

**QC BATCH REPORT**

| | | | | | |
|---|---|---|---|---|---|
| **Batch ID:** | **R447039 ( 0 )** | **Instrument:** | **VOA9** | **Method:** | **VOLATILES ORGANICS BY METHOD 8260C** |

**The following samples were analyzed in this batch:** HS23091194-01 HS23091194-02

**ALS Houston, US** Date: 30-Sep-23

**Client:** Bhate Environmental Associates, Inc.
**Project:** GROUNDWATER TREATMENT PLANT BI-WEEKLY SAMPLES
**WorkOrder:** HS23091194

**QC BATCH REPORT**

**Batch ID: R447807 ( 0 )** **Instrument: ICS-Integrion** **Method: ANIONS BY SW9056A**

**MBLK** Sample ID: **MBLK** Units: **mg/L** Analysis Date: **29-Sep-2023 18:31**
Client ID: Run ID: **ICS-Integrion_447807** SeqNo: **7576219** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 0.500 | 0.500 | | | | | | | | U |
| Sulfate | 0.500 | 0.500 | | | | | | | | U |

**LCS** Sample ID: **LCS** Units: **mg/L** Analysis Date: **29-Sep-2023 18:43**
Client ID: Run ID: **ICS-Integrion_447807** SeqNo: **7576220** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 20.22 | 0.500 | 20 | 0 | 101 | 80 - 120 | | | | |
| Sulfate | 19.75 | 0.500 | 20 | 0 | 98.7 | 80 - 120 | | | | |

**MS** Sample ID: **HS23091250-01MS** Units: **mg/L** Analysis Date: **29-Sep-2023 18:54**
Client ID: Run ID: **ICS-Integrion_447807** SeqNo: **7576222** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 14.78 | 0.500 | 10 | 4.341 | 104 | 80 - 120 | | | | |
| Sulfate | 11.3 | 0.500 | 10 | 1.216 | 101 | 80 - 120 | | | | |

**MSD** Sample ID: **HS23091250-01MSD** Units: **mg/L** Analysis Date: **29-Sep-2023 19:00**
Client ID: Run ID: **ICS-Integrion_447807** SeqNo: **7576223** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 14.64 | 0.500 | 10 | 4.341 | 103 | 80 - 120 | 14.78 | 0.931 | 20 | |
| Sulfate | 11.18 | 0.500 | 10 | 1.216 | 99.7 | 80 - 120 | 11.3 | 1.08 | 20 | |

**The following samples were analyzed in this batch:** HS23091194-01

**ALS Houston, US** Date: 30-Sep-23

**Client:** Bhate Environmental Associates, Inc.
**Project:** GROUNDWATER TREATMENT PLANT BI-WEEKLY SAMPLES
**WorkOrder:** **HS23091194**

**QUALIFIERS, ACRONYMS, UNITS**

| Qualifier | Description |
|---|---|
| * | Value exceeds Regulatory Limit |
| a | Not accredited |
| B | Analyte detected in the associated Method Blank above the Reporting Limit |
| E | Value above quantitation range |
| H | Analyzed outside of Holding Time |
| J | Analyte detected below quantitation limit |
| M | Manually integrated, see raw data for justification |
| n | Not offered for accreditation |
| ND | Not Detected at the Reporting Limit |
| O | Sample amount is > 4 times amount spiked |
| P | Dual Column results percent difference > 40% |
| R | RPD above laboratory control limit |
| S | Spike Recovery outside laboratory control limits |
| U | Analyzed but not detected above the MDL/SDL |

| Acronym | Description |
|---|---|
| DCS | Detectability Check Study |
| DUP | Method Duplicate |
| LCS | Laboratory Control Sample |
| LCSD | Laboratory Control Sample Duplicate |
| MBLK | Method Blank |
| MDL | Method Detection Limit |
| MQL | Method Quantitation Limit |
| MS | Matrix Spike |
| MSD | Matrix Spike Duplicate |
| PDS | Post Digestion Spike |
| PQL | Practical Quantitaion Limit |
| SD | Serial Dilution |
| SDL | Sample Detection Limit |
| TRRP | Texas Risk Reduction Program |

| Unit Reported | Description |
|---|---|
| mg/L | Milligrams per Liter |

## CERTIFICATIONS,ACCREDITATIONS & LICENSES

| Agency | Number | Expire Date |
|---|---|---|
| Arkansas | 88-00356 | 27-Mar-2024 |
| California | 2919; 2024 | 30-Apr-2024 |
| Dept of Defense | L23-358 | 31-May-2025 |
| Florida | E87611-38 | 30-Jun-2024 |
| Illinois | 2000322023-11 | 30-Jun-2024 |
| Kansas | E-10352 2023-2024 | 31-Jul-2024 |
| Louisiana | 03087 2023-2024 | 30-Jun-2024 |
| Maryland | 343; 2023-2024 | 30-Jun-2024 |
| North Carolina | 624-2023 | 31-Dec-2023 |
| North Dakota | R-193 2023-2024 | 30-Apr-2024 |
| Texas | T104704231-23-31 | 30-Apr-2024 |
| Utah | TX026932023-14 | 31-Jul-2024 |

**ALS Houston, US** Date: 30-Sep-23

## Sample Receipt Checklist

**Work Order ID:** HS23091194 **Date/Time Received:** 20-Sep-2023 09:30

**Client Name:** Bhate Environmental **Received by:** Corey Grandits

**Completed By:** /S/ Belinda Gomez 20-Sep-2023 17:15 **Reviewed by:** /S/ Nieka.Carson 21-Sep-2023 10:39

eSignature Date/Time eSignature Date/Time

Matrices: w Carrier name: FedEx

| | | | |
|---|---|---|---|
| Shipping container/cooler in good condition? | Yes ☑ | No ☐ | Not Present ☐ |
| Custody seals intact on shipping container/cooler? | Yes ☑ | No ☐ | Not Present ☐ |
| Custody seals intact on sample bottles? | Yes ☐ | No ☐ | Not Present ☑ |
| VOA/TX1005/TX1006 Solids in hermetically sealed vials? | Yes ☐ | No ☐ | Not Present ☑ |
| Chain of custody present? | Yes ☑ | No ☐ | 1 Page(s) |
| Chain of custody signed when relinquished and received? | Yes ☑ | No ☐ | |
| Samplers name present on COC? | Yes ☑ | No ☐ | |
| Chain of custody agrees with sample labels? | Yes ☑ | No ☐ | |
| Samples in proper container/bottle? | Yes ☑ | No ☐ | |
| Sample containers intact? | Yes ☑ | No ☐ | |
| Sufficient sample volume for indicated test? | Yes ☑ | No ☐ | |
| All samples received within holding time? | Yes ☑ | No ☐ | |
| Container/Temp Blank temperature in compliance? | Yes ☑ | No ☐ | |
| Temperature(s)/Thermometer(s): | 2.4uc/2.3c | ir31 | |
| Cooler(s)/Kit(s): | black | | |
| Date/Time sample(s) sent to storage: | | | |
| Water - VOA vials have zero headspace? | Yes ☑ | No ☐ | No VOA vials submitted ☐ |
| Water - pH acceptable upon receipt? | Yes ☐ | No ☐ | N/A ☑ |
| pH adjusted? | Yes ☐ | No ☐ | N/A ☑ |
| pH adjusted by: | | | |

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

Corrective Action:

# CHAIN OF CUSTODY

Name Of Lab Shipping To: ALS 10450 Stancliff Rd. Suite 210, Houston, Tx. 77099 ATTN: James Guin

Page 1 of 1

| Project: BHATE<br>LONGHORN ARMY AMMN. PLANT (LHAAP)<br>GROUNDWATER TREATMENT PLANT (GWTP)<br>KARNACK, TEXAS | Project No.<br>JVPCIBH.0001 |
|---|---|
| Job:<br>**GROUNDWATER TREATMENT PLANT BI-WEEKLY SAMPLES** | |
| Prepared By:<br>Scott Beesinger | P.O Number |

| Field Sample I.D. | Sample Matrix | Date / Time | MS / MSD | No. OF CONTAINERS | Analyses: VOC | Analyses: CHLORIDE, SULFATE | Remarks (Preservatives, etc.) | Lab I.D.# |
|---|---|---|---|---|---|---|---|---|
| LH18/24-SP650_091923 | Water | 09/19/23 / 13:00 | | 3 | 3 | | HCL | |
| LH18/24-SP650_091923 | Water | 09/19/23 / 13:00 | | 1 | | 1 | NONE | |
| Trip Blank | Water | 09/19/23 | | 2 | 2 | | HCL | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

HS23091194

Bhate Environmental Associates, Inc.
GROUNDWATER TREATMENT PLANT BI-WEEKL

Additional Remarks: **Standard TAT on all parameters**

| Relinquished By: | Date | Time | Received By: | Date | Time | Relinquished By: | Date | Time | Received By: | Date | Time |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Scott Beesinger | 09/19/23 | 13:30 | | | | | | | | | |

9For Lab Use Only

| Received At Lab By: | Date | Time | Airbill No. | Opened By: | Date | Time | Temp of Container | Seal No. | Condition |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |

Remarks

(Word) S:\Forms\Chain of Custody - BiWeekly

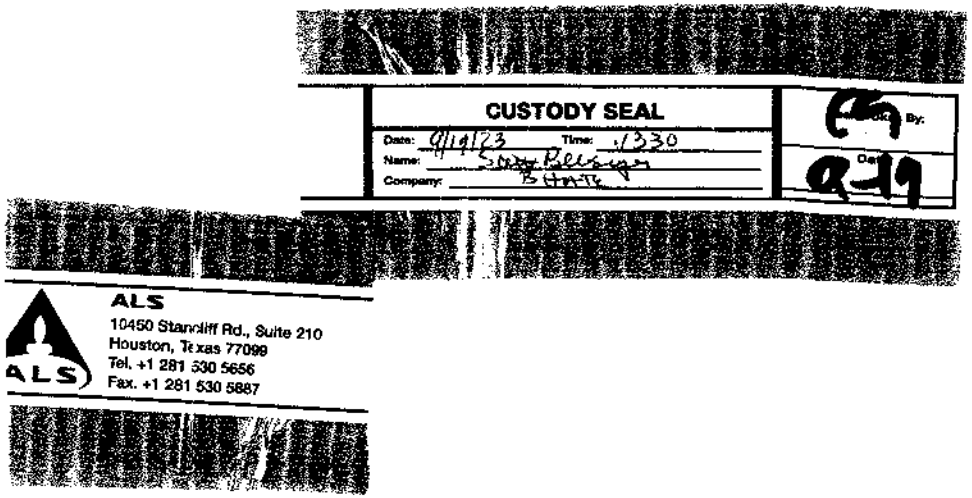
1R1 CF = 0.1
2.4°

TRK# 5300 5227 3759

PRIORITY OVERNIGHT

77099
TX-US
IAH

AB SGRA




ALS
10450 Stancliff Rd., Suite 210
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5887

# HS23091194-MSVOA-SW8260

ALS WO# HS23091194

right solutions.
right partner.

Form 1

# Organic Analysis Data Sheet

# Volatiles by EPA Volatiles Organics by Method 8260C

Workorder

HS23091194

Client

Bhate Environmental Associates, Inc.

Project

GROUNDWATER TREATMENT PLANT
BI-WEEKLY SAMPLES

09/26/2023

ALS Environmental–Houston Laboratory
10450 Stancliff Road, Suite 210, Houston, TX 77099
Phone (281) 530-5656 Fax (281) 530-5887
www.alsglobal.com

# Form 1 - Organic Analysis Data Sheet

**Client** Bhate Environmental Associates, Inc.

**Project** GROUNDWATER TREATMENT PLANT BI-WEEKLY SAMPLES

Workorder
**HS23091194**

## Volatiles by EPA Volatiles Organics by Method 8260C

| HS23091194-01 | Collected | Received | Matrix | Basis |
|---|---|---|---|---|
| **LH18/24-SP650_091923** | 09/19/23 13:00 | 09/20/23 09:30 | Water | Wet |

| Analyte | Units | Result | Q | DL | LOD | LOQ | DF | Analysis Date | Run ID | DataFile |
|---|---|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | ug/L | 1.0 | U | 0.30 | 1.0 | 1.0 | 1 | 09/21/23 14:04 | VOA9_447039 | U092110.D |
| 1,1,1-Trichloroethane | ug/L | 1.0 | U | 0.20 | 1.0 | 1.0 | 1 | 09/21/23 14:04 | VOA9_447039 | U092110.D |
| 1,1,2,2-Tetrachloroethane | ug/L | 1.0 | U | 0.50 | 1.0 | 1.0 | 1 | 09/21/23 14:04 | VOA9_447039 | U092110.D |
| 1,1,2-Trichloroethane | ug/L | 1.0 | U | 0.30 | 1.0 | 1.0 | 1 | 09/21/23 14:04 | VOA9_447039 | U092110.D |
| 1,1-Dichloroethane | ug/L | 1.0 | U | 0.20 | 1.0 | 1.0 | 1 | 09/21/23 14:04 | VOA9_447039 | U092110.D |
| 1,1-Dichloroethene | ug/L | 1.0 | U | 0.20 | 1.0 | 1.0 | 1 | 09/21/23 14:04 | VOA9_447039 | U092110.D |
| 1,1-Dichloropropene | ug/L | 1.0 | U | 0.30 | 1.0 | 1.0 | 1 | 09/21/23 14:04 | VOA9_447039 | U092110.D |
| 1,2,3-Trichlorobenzene | ug/L | 1.0 | U | 0.40 | 1.0 | 1.0 | 1 | 09/21/23 14:04 | VOA9_447039 | U092110.D |
| 1,2,3-Trichloropropane | ug/L | 1.0 | U | 0.50 | 1.0 | 1.0 | 1 | 09/21/23 14:04 | VOA9_447039 | U092110.D |
| 1,2,4-Trichlorobenzene | ug/L | 1.0 | U | 0.50 | 1.0 | 1.0 | 1 | 09/21/23 14:04 | VOA9_447039 | U092110.D |
| 1,2,4-Trimethylbenzene | ug/L | 1.0 | U | 0.30 | 1.0 | 1.0 | 1 | 09/21/23 14:04 | VOA9_447039 | U092110.D |
| 1,2-Dibromo-3-chloropropane | ug/L | 1.0 | U | 0.20 | 1.0 | 1.0 | 1 | 09/21/23 14:04 | VOA9_447039 | U092110.D |
| 1,2-Dibromoethane | ug/L | 1.0 | U | 0.20 | 1.0 | 1.0 | 1 | 09/21/23 14:04 | VOA9_447039 | U092110.D |
| 1,2-Dichlorobenzene | ug/L | 1.0 | U | 0.50 | 1.0 | 1.0 | 1 | 09/21/23 14:04 | VOA9_447039 | U092110.D |
| 1,2-Dichloroethane | ug/L | 1.0 | U | 0.20 | 1.0 | 1.0 | 1 | 09/21/23 14:04 | VOA9_447039 | U092110.D |
| 1,2-Dichloropropane | ug/L | 1.0 | U | 0.50 | 1.0 | 1.0 | 1 | 09/21/23 14:04 | VOA9_447039 | U092110.D |
| 1,3,5-Trimethylbenzene | ug/L | 1.0 | U | 0.30 | 1.0 | 1.0 | 1 | 09/21/23 14:04 | VOA9_447039 | U092110.D |
| 1,3-Dichlorobenzene | ug/L | 1.0 | U | 0.40 | 1.0 | 1.0 | 1 | 09/21/23 14:04 | VOA9_447039 | U092110.D |
| 1,3-Dichloropropane | ug/L | 1.0 | U | 0.30 | 1.0 | 1.0 | 1 | 09/21/23 14:04 | VOA9_447039 | U092110.D |
| 1,4-Dichlorobenzene | ug/L | 1.0 | U | 0.40 | 1.0 | 1.0 | 1 | 09/21/23 14:04 | VOA9_447039 | U092110.D |
| 2,2-Dichloropropane | ug/L | 1.0 | U | 0.20 | 1.0 | 1.0 | 1 | 09/21/23 14:04 | VOA9_447039 | U092110.D |
| 2-Butanone | ug/L | 2.0 | U | 0.50 | 2.0 | 2.0 | 1 | 09/21/23 14:04 | VOA9_447039 | U092110.D |
| 2-Chlorotoluene | ug/L | 1.0 | U | 0.30 | 1.0 | 1.0 | 1 | 09/21/23 14:04 | VOA9_447039 | U092110.D |
| 2-Hexanone | ug/L | 2.0 | U | 1.0 | 2.0 | 2.0 | 1 | 09/21/23 14:04 | VOA9_447039 | U092110.D |
| 4-Chlorotoluene | ug/L | 1.0 | U | 0.40 | 1.0 | 1.0 | 1 | 09/21/23 14:04 | VOA9_447039 | U092110.D |
| 4-Isopropyltoluene | ug/L | 1.0 | U | 0.30 | 1.0 | 1.0 | 1 | 09/21/23 14:04 | VOA9_447039 | U092110.D |
| 4-Methyl-2-pentanone | ug/L | 2.0 | U | 0.70 | 2.0 | 2.0 | 1 | 09/21/23 14:04 | VOA9_447039 | U092110.D |
| Acetone | ug/L | 2.0 | U | 0.40 | 2.0 | 2.0 | 1 | 09/21/23 14:04 | VOA9_447039 | U092110.D |
| Benzene | ug/L | 1.0 | U | 0.20 | 1.0 | 1.0 | 1 | 09/21/23 14:04 | VOA9_447039 | U092110.D |
| Bromobenzene | ug/L | 1.0 | U | 0.40 | 1.0 | 1.0 | 1 | 09/21/23 14:04 | VOA9_447039 | U092110.D |
| Bromochloromethane | ug/L | 1.0 | U | 0.20 | 1.0 | 1.0 | 1 | 09/21/23 14:04 | VOA9_447039 | U092110.D |
| Bromodichloromethane | ug/L | 1.0 | U | 0.20 | 1.0 | 1.0 | 1 | 09/21/23 14:04 | VOA9_447039 | U092110.D |
| Bromoform | ug/L | 1.0 | U | 0.40 | 1.0 | 1.0 | 1 | 09/21/23 14:04 | VOA9_447039 | U092110.D |

# Form 1 - Organic Analysis Data Sheet

**Client** Bhate Environmental Associates, Inc.

**Project** GROUNDWATER TREATMENT PLANT BI-WEEKLY SAMPLES

Workorder **HS23091194**

## Volatiles by EPA Volatiles Organics by Method 8260C

| HS23091194-01 | Collected | Received | Matrix | Basis |
|---|---|---|---|---|
| **LH18/24-SP650_091923** | 09/19/23 13:00 | 09/20/23 09:30 | Water | Wet |

| Analyte | Units | Result | Q | DL | LOD | LOQ | DF | Analysis Date | Run ID | DataFile |
|---|---|---|---|---|---|---|---|---|---|---|
| Bromomethane | ug/L | 1.0 | U | 0.40 | 1.0 | 1.0 | 1 | 09/21/23 14:04 | VOA9_447039 | U092110.D |
| Carbon disulfide | ug/L | 2.0 | U | 0.60 | 2.0 | 2.0 | 1 | 09/21/23 14:04 | VOA9_447039 | U092110.D |
| Carbon tetrachloride | ug/L | 1.0 | U | 0.50 | 1.0 | 1.0 | 1 | 09/21/23 14:04 | VOA9_447039 | U092110.D |
| Chlorobenzene | ug/L | 1.0 | U | 0.30 | 1.0 | 1.0 | 1 | 09/21/23 14:04 | VOA9_447039 | U092110.D |
| Chloroethane | ug/L | 1.0 | U | 0.30 | 1.0 | 1.0 | 1 | 09/21/23 14:04 | VOA9_447039 | U092110.D |
| Chloroform | ug/L | 1.0 | U | 0.20 | 1.0 | 1.0 | 1 | 09/21/23 14:04 | VOA9_447039 | U092110.D |
| Chloromethane | ug/L | 1.0 | U | 0.20 | 1.0 | 1.0 | 1 | 09/21/23 14:04 | VOA9_447039 | U092110.D |
| cis-1,2-Dichloroethene | ug/L | 2.3 | | 0.20 | 1.0 | 1.0 | 1 | 09/21/23 14:04 | VOA9_447039 | U092110.D |
| cis-1,3-Dichloropropene | ug/L | 1.0 | U | 0.20 | 1.0 | 1.0 | 1 | 09/21/23 14:04 | VOA9_447039 | U092110.D |
| Dibromochloromethane | ug/L | 1.0 | U | 0.30 | 1.0 | 1.0 | 1 | 09/21/23 14:04 | VOA9_447039 | U092110.D |
| Dibromomethane | ug/L | 1.0 | U | 0.20 | 1.0 | 1.0 | 1 | 09/21/23 14:04 | VOA9_447039 | U092110.D |
| Dichlorodifluoromethane | ug/L | 1.0 | U | 0.30 | 1.0 | 1.0 | 1 | 09/21/23 14:04 | VOA9_447039 | U092110.D |
| Ethylbenzene | ug/L | 1.0 | U | 0.30 | 1.0 | 1.0 | 1 | 09/21/23 14:04 | VOA9_447039 | U092110.D |
| Hexachlorobutadiene | ug/L | 1.0 | U | 1.0 | 1.0 | 1.0 | 1 | 09/21/23 14:04 | VOA9_447039 | U092110.D |
| Isopropylbenzene | ug/L | 1.0 | U | 0.30 | 1.0 | 1.0 | 1 | 09/21/23 14:04 | VOA9_447039 | U092110.D |
| m,p-Xylene | ug/L | 2.0 | U | 0.50 | 2.0 | 2.0 | 1 | 09/21/23 14:04 | VOA9_447039 | U092110.D |
| Methylene chloride | ug/L | 2.0 | U | 0.40 | 2.0 | 2.0 | 1 | 09/21/23 14:04 | VOA9_447039 | U092110.D |
| Naphthalene | ug/L | 1.0 | U | 0.30 | 1.0 | 1.0 | 1 | 09/21/23 14:04 | VOA9_447039 | U092110.D |
| n-Butylbenzene | ug/L | 1.0 | U | 0.40 | 1.0 | 1.0 | 1 | 09/21/23 14:04 | VOA9_447039 | U092110.D |
| n-Propylbenzene | ug/L | 1.0 | U | 0.30 | 1.0 | 1.0 | 1 | 09/21/23 14:04 | VOA9_447039 | U092110.D |
| o-Xylene | ug/L | 1.0 | U | 0.30 | 1.0 | 1.0 | 1 | 09/21/23 14:04 | VOA9_447039 | U092110.D |
| sec-Butylbenzene | ug/L | 1.0 | U | 0.30 | 1.0 | 1.0 | 1 | 09/21/23 14:04 | VOA9_447039 | U092110.D |
| Styrene | ug/L | 1.0 | U | 0.30 | 1.0 | 1.0 | 1 | 09/21/23 14:04 | VOA9_447039 | U092110.D |
| tert-Butylbenzene | ug/L | 1.0 | U | 0.30 | 1.0 | 1.0 | 1 | 09/21/23 14:04 | VOA9_447039 | U092110.D |
| Tetrachloroethene | ug/L | 1.0 | U | 0.30 | 1.0 | 1.0 | 1 | 09/21/23 14:04 | VOA9_447039 | U092110.D |
| Toluene | ug/L | 1.0 | U | 0.20 | 1.0 | 1.0 | 1 | 09/21/23 14:04 | VOA9_447039 | U092110.D |
| trans-1,2-Dichloroethene | ug/L | 1.0 | U | 0.20 | 1.0 | 1.0 | 1 | 09/21/23 14:04 | VOA9_447039 | U092110.D |
| trans-1,3-Dichloropropene | ug/L | 1.0 | U | 0.20 | 1.0 | 1.0 | 1 | 09/21/23 14:04 | VOA9_447039 | U092110.D |
| Trichloroethene | ug/L | 1.0 | U | 0.20 | 1.0 | 1.0 | 1 | 09/21/23 14:04 | VOA9_447039 | U092110.D |
| Trichlorofluoromethane | ug/L | 1.0 | U | 0.30 | 1.0 | 1.0 | 1 | 09/21/23 14:04 | VOA9_447039 | U092110.D |
| Vinyl chloride | ug/L | 1.0 | U | 0.20 | 1.0 | 1.0 | 1 | 09/21/23 14:04 | VOA9_447039 | U092110.D |

# Form 1 - Organic Analysis Data Sheet

**Client** Bhate Environmental Associates, Inc.

**Project** GROUNDWATER TREATMENT PLANT BI-WEEKLY SAMPLES

Workorder
**HS23091194**

## Volatiles by EPA Volatiles Organics by Method 8260C

HS23091194-02

**Trip Blank**

| Collected | Received | Matrix | Basis |
|---|---|---|---|
| 09/19/23 00:00 | 09/20/23 09:30 | Water | Wet |

| Analyte | Units | Result | Q | DL | LOD | LOQ | DF | Analysis Date | Run ID | DataFile |
|---|---|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | ug/L | 1.0 | U | 0.30 | 1.0 | 1.0 | 1 | 09/21/23 13:42 | VOA9_447039 | U092109.D |
| 1,1,1-Trichloroethane | ug/L | 1.0 | U | 0.20 | 1.0 | 1.0 | 1 | 09/21/23 13:42 | VOA9_447039 | U092109.D |
| 1,1,2,2-Tetrachloroethane | ug/L | 1.0 | U | 0.50 | 1.0 | 1.0 | 1 | 09/21/23 13:42 | VOA9_447039 | U092109.D |
| 1,1,2-Trichloroethane | ug/L | 1.0 | U | 0.30 | 1.0 | 1.0 | 1 | 09/21/23 13:42 | VOA9_447039 | U092109.D |
| 1,1-Dichloroethane | ug/L | 1.0 | U | 0.20 | 1.0 | 1.0 | 1 | 09/21/23 13:42 | VOA9_447039 | U092109.D |
| 1,1-Dichloroethene | ug/L | 1.0 | U | 0.20 | 1.0 | 1.0 | 1 | 09/21/23 13:42 | VOA9_447039 | U092109.D |
| 1,1-Dichloropropene | ug/L | 1.0 | U | 0.30 | 1.0 | 1.0 | 1 | 09/21/23 13:42 | VOA9_447039 | U092109.D |
| 1,2,3-Trichlorobenzene | ug/L | 1.0 | U | 0.40 | 1.0 | 1.0 | 1 | 09/21/23 13:42 | VOA9_447039 | U092109.D |
| 1,2,3-Trichloropropane | ug/L | 1.0 | U | 0.50 | 1.0 | 1.0 | 1 | 09/21/23 13:42 | VOA9_447039 | U092109.D |
| 1,2,4-Trichlorobenzene | ug/L | 1.0 | U | 0.50 | 1.0 | 1.0 | 1 | 09/21/23 13:42 | VOA9_447039 | U092109.D |
| 1,2,4-Trimethylbenzene | ug/L | 1.0 | U | 0.30 | 1.0 | 1.0 | 1 | 09/21/23 13:42 | VOA9_447039 | U092109.D |
| 1,2-Dibromo-3-chloropropane | ug/L | 1.0 | U | 0.20 | 1.0 | 1.0 | 1 | 09/21/23 13:42 | VOA9_447039 | U092109.D |
| 1,2-Dibromoethane | ug/L | 1.0 | U | 0.20 | 1.0 | 1.0 | 1 | 09/21/23 13:42 | VOA9_447039 | U092109.D |
| 1,2-Dichlorobenzene | ug/L | 1.0 | U | 0.50 | 1.0 | 1.0 | 1 | 09/21/23 13:42 | VOA9_447039 | U092109.D |
| 1,2-Dichloroethane | ug/L | 1.0 | U | 0.20 | 1.0 | 1.0 | 1 | 09/21/23 13:42 | VOA9_447039 | U092109.D |
| 1,2-Dichloropropane | ug/L | 1.0 | U | 0.50 | 1.0 | 1.0 | 1 | 09/21/23 13:42 | VOA9_447039 | U092109.D |
| 1,3,5-Trimethylbenzene | ug/L | 1.0 | U | 0.30 | 1.0 | 1.0 | 1 | 09/21/23 13:42 | VOA9_447039 | U092109.D |
| 1,3-Dichlorobenzene | ug/L | 1.0 | U | 0.40 | 1.0 | 1.0 | 1 | 09/21/23 13:42 | VOA9_447039 | U092109.D |
| 1,3-Dichloropropane | ug/L | 1.0 | U | 0.30 | 1.0 | 1.0 | 1 | 09/21/23 13:42 | VOA9_447039 | U092109.D |
| 1,4-Dichlorobenzene | ug/L | 1.0 | U | 0.40 | 1.0 | 1.0 | 1 | 09/21/23 13:42 | VOA9_447039 | U092109.D |
| 2,2-Dichloropropane | ug/L | 1.0 | U | 0.20 | 1.0 | 1.0 | 1 | 09/21/23 13:42 | VOA9_447039 | U092109.D |
| 2-Butanone | ug/L | 2.0 | U | 0.50 | 2.0 | 2.0 | 1 | 09/21/23 13:42 | VOA9_447039 | U092109.D |
| 2-Chlorotoluene | ug/L | 1.0 | U | 0.30 | 1.0 | 1.0 | 1 | 09/21/23 13:42 | VOA9_447039 | U092109.D |
| 2-Hexanone | ug/L | 2.0 | U | 1.0 | 2.0 | 2.0 | 1 | 09/21/23 13:42 | VOA9_447039 | U092109.D |
| 4-Chlorotoluene | ug/L | 1.0 | U | 0.40 | 1.0 | 1.0 | 1 | 09/21/23 13:42 | VOA9_447039 | U092109.D |
| 4-Isopropyltoluene | ug/L | 1.0 | U | 0.30 | 1.0 | 1.0 | 1 | 09/21/23 13:42 | VOA9_447039 | U092109.D |
| 4-Methyl-2-pentanone | ug/L | 2.0 | U | 0.70 | 2.0 | 2.0 | 1 | 09/21/23 13:42 | VOA9_447039 | U092109.D |
| Acetone | ug/L | 2.0 | U | 0.40 | 2.0 | 2.0 | 1 | 09/21/23 13:42 | VOA9_447039 | U092109.D |
| Benzene | ug/L | 1.0 | U | 0.20 | 1.0 | 1.0 | 1 | 09/21/23 13:42 | VOA9_447039 | U092109.D |
| Bromobenzene | ug/L | 1.0 | U | 0.40 | 1.0 | 1.0 | 1 | 09/21/23 13:42 | VOA9_447039 | U092109.D |
| Bromochloromethane | ug/L | 1.0 | U | 0.20 | 1.0 | 1.0 | 1 | 09/21/23 13:42 | VOA9_447039 | U092109.D |
| Bromodichloromethane | ug/L | 1.0 | U | 0.20 | 1.0 | 1.0 | 1 | 09/21/23 13:42 | VOA9_447039 | U092109.D |
| Bromoform | ug/L | 1.0 | U | 0.40 | 1.0 | 1.0 | 1 | 09/21/23 13:42 | VOA9_447039 | U092109.D |

# Form 1 - Organic Analysis Data Sheet

**Client** Bhate Environmental Associates, Inc.

**Project** GROUNDWATER TREATMENT PLANT BI-WEEKLY SAMPLES

Workorder
**HS23091194**

## Volatiles by EPA Volatiles Organics by Method 8260C

HS23091194-02

**Trip Blank**

| Collected | Received | Matrix | Basis |
|---|---|---|---|
| 09/19/23 00:00 | 09/20/23 09:30 | Water | Wet |

| Analyte | Units | Result | Q | DL | LOD | LOQ | DF | Analysis Date | Run ID | DataFile |
|---|---|---|---|---|---|---|---|---|---|---|
| Bromomethane | ug/L | 1.0 | U | 0.40 | 1.0 | 1.0 | 1 | 09/21/23 13:42 | VOA9_447039 | U092109.D |
| Carbon disulfide | ug/L | 2.0 | U | 0.60 | 2.0 | 2.0 | 1 | 09/21/23 13:42 | VOA9_447039 | U092109.D |
| Carbon tetrachloride | ug/L | 1.0 | U | 0.50 | 1.0 | 1.0 | 1 | 09/21/23 13:42 | VOA9_447039 | U092109.D |
| Chlorobenzene | ug/L | 1.0 | U | 0.30 | 1.0 | 1.0 | 1 | 09/21/23 13:42 | VOA9_447039 | U092109.D |
| Chloroethane | ug/L | 1.0 | U | 0.30 | 1.0 | 1.0 | 1 | 09/21/23 13:42 | VOA9_447039 | U092109.D |
| Chloroform | ug/L | 1.0 | U | 0.20 | 1.0 | 1.0 | 1 | 09/21/23 13:42 | VOA9_447039 | U092109.D |
| Chloromethane | ug/L | 1.0 | U | 0.20 | 1.0 | 1.0 | 1 | 09/21/23 13:42 | VOA9_447039 | U092109.D |
| cis-1,2-Dichloroethene | ug/L | 1.0 | U | 0.20 | 1.0 | 1.0 | 1 | 09/21/23 13:42 | VOA9_447039 | U092109.D |
| cis-1,3-Dichloropropene | ug/L | 1.0 | U | 0.20 | 1.0 | 1.0 | 1 | 09/21/23 13:42 | VOA9_447039 | U092109.D |
| Dibromochloromethane | ug/L | 1.0 | U | 0.30 | 1.0 | 1.0 | 1 | 09/21/23 13:42 | VOA9_447039 | U092109.D |
| Dibromomethane | ug/L | 1.0 | U | 0.20 | 1.0 | 1.0 | 1 | 09/21/23 13:42 | VOA9_447039 | U092109.D |
| Dichlorodifluoromethane | ug/L | 1.0 | U | 0.30 | 1.0 | 1.0 | 1 | 09/21/23 13:42 | VOA9_447039 | U092109.D |
| Ethylbenzene | ug/L | 1.0 | U | 0.30 | 1.0 | 1.0 | 1 | 09/21/23 13:42 | VOA9_447039 | U092109.D |
| Hexachlorobutadiene | ug/L | 1.0 | U | 1.0 | 1.0 | 1.0 | 1 | 09/21/23 13:42 | VOA9_447039 | U092109.D |
| Isopropylbenzene | ug/L | 1.0 | U | 0.30 | 1.0 | 1.0 | 1 | 09/21/23 13:42 | VOA9_447039 | U092109.D |
| m,p-Xylene | ug/L | 2.0 | U | 0.50 | 2.0 | 2.0 | 1 | 09/21/23 13:42 | VOA9_447039 | U092109.D |
| Methylene chloride | ug/L | 2.0 | U | 0.40 | 2.0 | 2.0 | 1 | 09/21/23 13:42 | VOA9_447039 | U092109.D |
| Naphthalene | ug/L | 1.0 | U | 0.30 | 1.0 | 1.0 | 1 | 09/21/23 13:42 | VOA9_447039 | U092109.D |
| n-Butylbenzene | ug/L | 1.0 | U | 0.40 | 1.0 | 1.0 | 1 | 09/21/23 13:42 | VOA9_447039 | U092109.D |
| n-Propylbenzene | ug/L | 1.0 | U | 0.30 | 1.0 | 1.0 | 1 | 09/21/23 13:42 | VOA9_447039 | U092109.D |
| o-Xylene | ug/L | 1.0 | U | 0.30 | 1.0 | 1.0 | 1 | 09/21/23 13:42 | VOA9_447039 | U092109.D |
| sec-Butylbenzene | ug/L | 1.0 | U | 0.30 | 1.0 | 1.0 | 1 | 09/21/23 13:42 | VOA9_447039 | U092109.D |
| Styrene | ug/L | 1.0 | U | 0.30 | 1.0 | 1.0 | 1 | 09/21/23 13:42 | VOA9_447039 | U092109.D |
| tert-Butylbenzene | ug/L | 1.0 | U | 0.30 | 1.0 | 1.0 | 1 | 09/21/23 13:42 | VOA9_447039 | U092109.D |
| Tetrachloroethene | ug/L | 1.0 | U | 0.30 | 1.0 | 1.0 | 1 | 09/21/23 13:42 | VOA9_447039 | U092109.D |
| Toluene | ug/L | 1.0 | U | 0.20 | 1.0 | 1.0 | 1 | 09/21/23 13:42 | VOA9_447039 | U092109.D |
| trans-1,2-Dichloroethene | ug/L | 1.0 | U | 0.20 | 1.0 | 1.0 | 1 | 09/21/23 13:42 | VOA9_447039 | U092109.D |
| trans-1,3-Dichloropropene | ug/L | 1.0 | U | 0.20 | 1.0 | 1.0 | 1 | 09/21/23 13:42 | VOA9_447039 | U092109.D |
| Trichloroethene | ug/L | 1.0 | U | 0.20 | 1.0 | 1.0 | 1 | 09/21/23 13:42 | VOA9_447039 | U092109.D |
| Trichlorofluoromethane | ug/L | 1.0 | U | 0.30 | 1.0 | 1.0 | 1 | 09/21/23 13:42 | VOA9_447039 | U092109.D |
| Vinyl chloride | ug/L | 1.0 | U | 0.20 | 1.0 | 1.0 | 1 | 09/21/23 13:42 | VOA9_447039 | U092109.D |

# Form 1 - Organic Analysis Data Sheet

**Client** Bhate Environmental Associates, Inc.

**Project** GROUNDWATER TREATMENT PLANT BI-WEEKLY SAMPLES

Workorder
**HS23091194**

## Volatiles by EPA Volatiles Organics by Method 8260C

| VBLKW-230921 | Collected | Received | Matrix | Basis |
|---|---|---|---|---|
| **VBLKW-230921** | NA | NA | Aqueous | Wet |

| Analyte | Units | Result | Q | DL | LOD | LOQ | DF | Analysis Date | Run ID | DataFile |
|---|---|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | ug/L | 1.0 | U | 0.30 | 1.0 | 1.0 | 1 | 09/21/23 13:20 | VOA9_447039 | U092108.D |
| 1,1,1-Trichloroethane | ug/L | 1.0 | U | 0.20 | 1.0 | 1.0 | 1 | 09/21/23 13:20 | VOA9_447039 | U092108.D |
| 1,1,2,2-Tetrachloroethane | ug/L | 1.0 | U | 0.50 | 1.0 | 1.0 | 1 | 09/21/23 13:20 | VOA9_447039 | U092108.D |
| 1,1,2-Trichloroethane | ug/L | 1.0 | U | 0.30 | 1.0 | 1.0 | 1 | 09/21/23 13:20 | VOA9_447039 | U092108.D |
| 1,1-Dichloroethane | ug/L | 1.0 | U | 0.20 | 1.0 | 1.0 | 1 | 09/21/23 13:20 | VOA9_447039 | U092108.D |
| 1,1-Dichloroethene | ug/L | 1.0 | U | 0.20 | 1.0 | 1.0 | 1 | 09/21/23 13:20 | VOA9_447039 | U092108.D |
| 1,1-Dichloropropene | ug/L | 1.0 | U | 0.30 | 1.0 | 1.0 | 1 | 09/21/23 13:20 | VOA9_447039 | U092108.D |
| 1,2,3-Trichlorobenzene | ug/L | 1.0 | U | 0.40 | 1.0 | 1.0 | 1 | 09/21/23 13:20 | VOA9_447039 | U092108.D |
| 1,2,3-Trichloropropane | ug/L | 1.0 | U | 0.50 | 1.0 | 1.0 | 1 | 09/21/23 13:20 | VOA9_447039 | U092108.D |
| 1,2,4-Trichlorobenzene | ug/L | 1.0 | U | 0.50 | 1.0 | 1.0 | 1 | 09/21/23 13:20 | VOA9_447039 | U092108.D |
| 1,2,4-Trimethylbenzene | ug/L | 1.0 | U | 0.30 | 1.0 | 1.0 | 1 | 09/21/23 13:20 | VOA9_447039 | U092108.D |
| 1,2-Dibromo-3-chloropropane | ug/L | 1.0 | U | 0.20 | 1.0 | 1.0 | 1 | 09/21/23 13:20 | VOA9_447039 | U092108.D |
| 1,2-Dibromoethane | ug/L | 1.0 | U | 0.20 | 1.0 | 1.0 | 1 | 09/21/23 13:20 | VOA9_447039 | U092108.D |
| 1,2-Dichlorobenzene | ug/L | 1.0 | U | 0.50 | 1.0 | 1.0 | 1 | 09/21/23 13:20 | VOA9_447039 | U092108.D |
| 1,2-Dichloroethane | ug/L | 1.0 | U | 0.20 | 1.0 | 1.0 | 1 | 09/21/23 13:20 | VOA9_447039 | U092108.D |
| 1,2-Dichloropropane | ug/L | 1.0 | U | 0.50 | 1.0 | 1.0 | 1 | 09/21/23 13:20 | VOA9_447039 | U092108.D |
| 1,3,5-Trimethylbenzene | ug/L | 1.0 | U | 0.30 | 1.0 | 1.0 | 1 | 09/21/23 13:20 | VOA9_447039 | U092108.D |
| 1,3-Dichlorobenzene | ug/L | 1.0 | U | 0.40 | 1.0 | 1.0 | 1 | 09/21/23 13:20 | VOA9_447039 | U092108.D |
| 1,3-Dichloropropane | ug/L | 1.0 | U | 0.30 | 1.0 | 1.0 | 1 | 09/21/23 13:20 | VOA9_447039 | U092108.D |
| 1,4-Dichlorobenzene | ug/L | 1.0 | U | 0.40 | 1.0 | 1.0 | 1 | 09/21/23 13:20 | VOA9_447039 | U092108.D |
| 2,2-Dichloropropane | ug/L | 1.0 | U | 0.20 | 1.0 | 1.0 | 1 | 09/21/23 13:20 | VOA9_447039 | U092108.D |
| 2-Butanone | ug/L | 2.0 | U | 0.50 | 2.0 | 2.0 | 1 | 09/21/23 13:20 | VOA9_447039 | U092108.D |
| 2-Chlorotoluene | ug/L | 1.0 | U | 0.30 | 1.0 | 1.0 | 1 | 09/21/23 13:20 | VOA9_447039 | U092108.D |
| 2-Hexanone | ug/L | 2.0 | U | 1.0 | 2.0 | 2.0 | 1 | 09/21/23 13:20 | VOA9_447039 | U092108.D |
| 4-Chlorotoluene | ug/L | 1.0 | U | 0.40 | 1.0 | 1.0 | 1 | 09/21/23 13:20 | VOA9_447039 | U092108.D |
| 4-Isopropyltoluene | ug/L | 1.0 | U | 0.30 | 1.0 | 1.0 | 1 | 09/21/23 13:20 | VOA9_447039 | U092108.D |
| 4-Methyl-2-pentanone | ug/L | 2.0 | U | 0.70 | 2.0 | 2.0 | 1 | 09/21/23 13:20 | VOA9_447039 | U092108.D |
| Acetone | ug/L | 2.0 | U | 0.40 | 2.0 | 2.0 | 1 | 09/21/23 13:20 | VOA9_447039 | U092108.D |
| Benzene | ug/L | 1.0 | U | 0.20 | 1.0 | 1.0 | 1 | 09/21/23 13:20 | VOA9_447039 | U092108.D |
| Bromobenzene | ug/L | 1.0 | U | 0.40 | 1.0 | 1.0 | 1 | 09/21/23 13:20 | VOA9_447039 | U092108.D |
| Bromochloromethane | ug/L | 1.0 | U | 0.20 | 1.0 | 1.0 | 1 | 09/21/23 13:20 | VOA9_447039 | U092108.D |
| Bromodichloromethane | ug/L | 1.0 | U | 0.20 | 1.0 | 1.0 | 1 | 09/21/23 13:20 | VOA9_447039 | U092108.D |
| Bromoform | ug/L | 1.0 | U | 0.40 | 1.0 | 1.0 | 1 | 09/21/23 13:20 | VOA9_447039 | U092108.D |

# Form 1 - Organic Analysis Data Sheet

**Client** Bhate Environmental Associates, Inc.

**Project** GROUNDWATER TREATMENT PLANT BI-WEEKLY SAMPLES

Workorder
**HS23091194**

## Volatiles by EPA Volatiles Organics by Method 8260C

| VBLKW-230921 | Collected | Received | Matrix | Basis |
|---|---|---|---|---|
| **VBLKW-230921** | NA | NA | Aqueous | Wet |

| Analyte | Units | Result | Q | DL | LOD | LOQ | DF | Analysis Date | Run ID | DataFile |
|---|---|---|---|---|---|---|---|---|---|---|
| Bromomethane | ug/L | 1.0 | U | 0.40 | 1.0 | 1.0 | 1 | 09/21/23 13:20 | VOA9_447039 | U092108.D |
| Carbon disulfide | ug/L | 2.0 | U | 0.60 | 2.0 | 2.0 | 1 | 09/21/23 13:20 | VOA9_447039 | U092108.D |
| Carbon tetrachloride | ug/L | 1.0 | U | 0.50 | 1.0 | 1.0 | 1 | 09/21/23 13:20 | VOA9_447039 | U092108.D |
| Chlorobenzene | ug/L | 1.0 | U | 0.30 | 1.0 | 1.0 | 1 | 09/21/23 13:20 | VOA9_447039 | U092108.D |
| Chloroethane | ug/L | 1.0 | U | 0.30 | 1.0 | 1.0 | 1 | 09/21/23 13:20 | VOA9_447039 | U092108.D |
| Chloroform | ug/L | 1.0 | U | 0.20 | 1.0 | 1.0 | 1 | 09/21/23 13:20 | VOA9_447039 | U092108.D |
| Chloromethane | ug/L | 1.0 | U | 0.20 | 1.0 | 1.0 | 1 | 09/21/23 13:20 | VOA9_447039 | U092108.D |
| cis-1,2-Dichloroethene | ug/L | 1.0 | U | 0.20 | 1.0 | 1.0 | 1 | 09/21/23 13:20 | VOA9_447039 | U092108.D |
| cis-1,3-Dichloropropene | ug/L | 1.0 | U | 0.20 | 1.0 | 1.0 | 1 | 09/21/23 13:20 | VOA9_447039 | U092108.D |
| Dibromochloromethane | ug/L | 1.0 | U | 0.30 | 1.0 | 1.0 | 1 | 09/21/23 13:20 | VOA9_447039 | U092108.D |
| Dibromomethane | ug/L | 1.0 | U | 0.20 | 1.0 | 1.0 | 1 | 09/21/23 13:20 | VOA9_447039 | U092108.D |
| Dichlorodifluoromethane | ug/L | 1.0 | U | 0.30 | 1.0 | 1.0 | 1 | 09/21/23 13:20 | VOA9_447039 | U092108.D |
| Ethylbenzene | ug/L | 1.0 | U | 0.30 | 1.0 | 1.0 | 1 | 09/21/23 13:20 | VOA9_447039 | U092108.D |
| Hexachlorobutadiene | ug/L | 1.0 | U | 1.0 | 1.0 | 1.0 | 1 | 09/21/23 13:20 | VOA9_447039 | U092108.D |
| Isopropylbenzene | ug/L | 1.0 | U | 0.30 | 1.0 | 1.0 | 1 | 09/21/23 13:20 | VOA9_447039 | U092108.D |
| m,p-Xylene | ug/L | 2.0 | U | 0.50 | 2.0 | 2.0 | 1 | 09/21/23 13:20 | VOA9_447039 | U092108.D |
| Methylene chloride | ug/L | 2.0 | U | 0.40 | 2.0 | 2.0 | 1 | 09/21/23 13:20 | VOA9_447039 | U092108.D |
| Naphthalene | ug/L | 1.0 | U | 0.30 | 1.0 | 1.0 | 1 | 09/21/23 13:20 | VOA9_447039 | U092108.D |
| n-Butylbenzene | ug/L | 1.0 | U | 0.40 | 1.0 | 1.0 | 1 | 09/21/23 13:20 | VOA9_447039 | U092108.D |
| n-Propylbenzene | ug/L | 1.0 | U | 0.30 | 1.0 | 1.0 | 1 | 09/21/23 13:20 | VOA9_447039 | U092108.D |
| o-Xylene | ug/L | 1.0 | U | 0.30 | 1.0 | 1.0 | 1 | 09/21/23 13:20 | VOA9_447039 | U092108.D |
| sec-Butylbenzene | ug/L | 1.0 | U | 0.30 | 1.0 | 1.0 | 1 | 09/21/23 13:20 | VOA9_447039 | U092108.D |
| Styrene | ug/L | 1.0 | U | 0.30 | 1.0 | 1.0 | 1 | 09/21/23 13:20 | VOA9_447039 | U092108.D |
| tert-Butylbenzene | ug/L | 1.0 | U | 0.30 | 1.0 | 1.0 | 1 | 09/21/23 13:20 | VOA9_447039 | U092108.D |
| Tetrachloroethene | ug/L | 1.0 | U | 0.30 | 1.0 | 1.0 | 1 | 09/21/23 13:20 | VOA9_447039 | U092108.D |
| Toluene | ug/L | 1.0 | U | 0.20 | 1.0 | 1.0 | 1 | 09/21/23 13:20 | VOA9_447039 | U092108.D |
| trans-1,2-Dichloroethene | ug/L | 1.0 | U | 0.20 | 1.0 | 1.0 | 1 | 09/21/23 13:20 | VOA9_447039 | U092108.D |
| trans-1,3-Dichloropropene | ug/L | 1.0 | U | 0.20 | 1.0 | 1.0 | 1 | 09/21/23 13:20 | VOA9_447039 | U092108.D |
| Trichloroethene | ug/L | 1.0 | U | 0.20 | 1.0 | 1.0 | 1 | 09/21/23 13:20 | VOA9_447039 | U092108.D |
| Trichlorofluoromethane | ug/L | 1.0 | U | 0.30 | 1.0 | 1.0 | 1 | 09/21/23 13:20 | VOA9_447039 | U092108.D |
| Vinyl chloride | ug/L | 1.0 | U | 0.20 | 1.0 | 1.0 | 1 | 09/21/23 13:20 | VOA9_447039 | U092108.D |

right solutions.
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Form 2

# System Monitoring Compound Recovery

# Volatiles by EPA Volatiles Organics by Method 8260C

Workorder

HS23091194

Client

Bhate Environmental Associates, Inc.

Project

GROUNDWATER TREATMENT PLANT
BI-WEEKLY SAMPLES

09/26/2023

ALS Environmental–Houston Laboratory
10450 Stancliff Road, Suite 210, Houston, TX 77099
Phone (281) 530-5656 Fax (281) 530-5887
www.alsglobal.com

# Form 2 - System Monitoring Compound Recovery

**Client** Bhate Environmental Associates, Inc.

Workorder

**Project** GROUNDWATER TREATMENT PLANT BI-WEEKLY SAMPLES

**HS23091194**

RunID

## Volatiles by EPA Volatiles Organics by Method 8260C

VOA9-447039

| CCB-CCB | Analyzed | Conc Units | Dilution |
|---|---|---|---|
| CCB | 09/21/23 | %REC | 1 |

| Surrogate | Result Conc | Spike Conc | %Recovery | Q | %Recovery Limits |
|---|---|---|---|---|---|
| 1,2-Dichloroethane-d4 | 51.42 | 50 | 103 | | 80-120 |
| 4-Bromofluorobenzene | 44.9 | 50 | 89.8 | | 80-120 |
| Dibromofluoromethane | 52.51 | 50 | 105 | | 80-120 |
| Toluene-d8 | 56.65 | 50 | 113 | | 80-120 |

| CCV-CCV | Analyzed | Conc Units | Dilution |
|---|---|---|---|
| CCV | 09/21/23 | %REC | 1 |

| Surrogate | Result Conc | Spike Conc | %Recovery | Q | %Recovery Limits |
|---|---|---|---|---|---|
| 1,2-Dichloroethane-d4 | 51.13 | 50 | 102 | | 80-120 |
| 4-Bromofluorobenzene | 50.17 | 50 | 100 | | 80-120 |
| Dibromofluoromethane | 51.16 | 50 | 102 | | 80-120 |
| Toluene-d8 | 50.94 | 50 | 102 | | 80-120 |

| HS23091194-01 | Analyzed | Conc Units | Dilution |
|---|---|---|---|
| LH18/24-SP650_091923 | 09/21/23 | %REC | 1 |

| Surrogate | Result Conc | Spike Conc | %Recovery | Q | %Recovery Limits |
|---|---|---|---|---|---|
| 1,2-Dichloroethane-d4 | 51 | 50 | 102 | | 81-118 |
| 4-Bromofluorobenzene | 43 | 50 | 85.2 | | 85-114 |
| Dibromofluoromethane | 50 | 50 | 100 | | 80-119 |
| Toluene-d8 | 56 | 50 | 112 | | 89-112 |

# Form 2 - System Monitoring Compound Recovery

**Client** Bhate Environmental Associates, Inc.

Workorder

**Project** GROUNDWATER TREATMENT PLANT BI-WEEKLY SAMPLES

**HS23091194**

RunID

## Volatiles by EPA Volatiles Organics by Method 8260C

VOA9-447039

| HS23091194-01MS | Analyzed | Conc Units | Dilution |
|---|---|---|---|
| LH18/24-SP650_091923 | 09/21/23 | %REC | 1 |

| Surrogate | Result Conc | Spike Conc | %Recovery | Q | %Recovery Limits |
|---|---|---|---|---|---|
| 1,2-Dichloroethane-d4 | 51.23 | 50 | 102 | | 81-118 |
| 4-Bromofluorobenzene | 50.87 | 50 | 102 | | 85-114 |
| Dibromofluoromethane | 50.4 | 50 | 101 | | 80-119 |
| Toluene-d8 | 56.96 | 50 | 114 | | 89-112 |

| HS23091194-01MSD | Analyzed | Conc Units | Dilution |
|---|---|---|---|
| LH18/24-SP650_091923 | 09/21/23 | %REC | 1 |

| Surrogate | Result Conc | Spike Conc | %Recovery | Q | %Recovery Limits |
|---|---|---|---|---|---|
| 1,2-Dichloroethane-d4 | 51.89 | 50 | 104 | | 81-118 |
| 4-Bromofluorobenzene | 48.34 | 50 | 96.7 | | 85-114 |
| Dibromofluoromethane | 50.21 | 50 | 100 | | 80-119 |
| Toluene-d8 | 57.67 | 50 | 115 | | 89-112 |

| HS23091194-02 | Analyzed | Conc Units | Dilution |
|---|---|---|---|
| Trip Blank | 09/21/23 | %REC | 1 |

| Surrogate | Result Conc | Spike Conc | %Recovery | Q | %Recovery Limits |
|---|---|---|---|---|---|
| 1,2-Dichloroethane-d4 | 52 | 50 | 104 | | 81-118 |
| 4-Bromofluorobenzene | 43 | 50 | 85.2 | | 85-114 |
| Dibromofluoromethane | 51 | 50 | 101 | | 80-119 |
| Toluene-d8 | 56 | 50 | 112 | | 89-112 |

# Form 2 - System Monitoring Compound Recovery

**Client** Bhate Environmental Associates, Inc.

Workorder

**Project** GROUNDWATER TREATMENT PLANT BI-WEEKLY SAMPLES

**HS23091194**

RunID

## Volatiles by EPA Volatiles Organics by Method 8260C

VOA9-447039

| VBLKW-230921 | Analyzed | Conc Units | Dilution |
|---|---|---|---|
| VBLKW-230921 | 09/21/23 | %REC | 1 |

| Surrogate | Result Conc | Spike Conc | %Recovery | Q | %Recovery Limits |
|---|---|---|---|---|---|
| 1,2-Dichloroethane-d4 | 49.35 | 50 | 98.7 | | 81-118 |
| 4-Bromofluorobenzene | 42.53 | 50 | 85.1 | | 85-114 |
| Dibromofluoromethane | 53.75 | 50 | 108 | | 80-119 |
| Toluene-d8 | 55.83 | 50 | 112 | | 89-112 |

| VLCSW-230921 | Analyzed | Conc Units | Dilution |
|---|---|---|---|
| VLCSW-230921 | 09/21/23 | %REC | 1 |

| Surrogate | Result Conc | Spike Conc | %Recovery | Q | %Recovery Limits |
|---|---|---|---|---|---|
| 1,2-Dichloroethane-d4 | 53.92 | 50 | 108 | | 81-118 |
| 4-Bromofluorobenzene | 52.3 | 50 | 105 | | 85-114 |
| Dibromofluoromethane | 59.5 | 50 | 119 | | 80-119 |
| Toluene-d8 | 54.07 | 50 | 108 | | 89-112 |

right solutions.
right partner.

Form 3A

# Matrix Spike/Spike Duplicate Recovery

# Volatiles by EPA Volatiles Organics by Method 8260C

Workorder

HS23091194

Client

Bhate Environmental Associates, Inc.

Project

GROUNDWATER TREATMENT PLANT
BI-WEEKLY SAMPLES

09/26/2023

ALS Environmental–Houston Laboratory
10450 Stancliff Road, Suite 210, Houston, TX 77099
Phone (281) 530-5656 Fax (281) 530-5887
www.alsglobal.com

# Form 3A - Matrix Spike/Spike Duplicate Recovery

**Client** Bhate Environmental Associates, Inc.

Workorder

**Project** GROUNDWATER TREATMENT PLANT BI-WEEKLY SAMPLES

**HS23091194**

RunID

## Volatiles by EPA Volatiles Organics by Method 8260C

VOA9-447039

| LH18/24-SP650_091923 (HS23091194-01) | | | | HS23091194-01MS | | | | HS23091194-01MSD | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Sample Matrix** Aqueous | | | **Run Date** | 09/21/23 | | | | 09/21/23 | | | | | | |
| **Result Units** ug/L | | | **Run Time** | 15:11 | | | | 15:34 | | | | | | |
| | | | **Data File** | U092113.D | | | | U092114.D | | | | | | |
| Analyte | %R Limits | DF | Sample Result | MS Result | Spike Added | %R | Q | MSD Result | Spike Added | %R | Q | RPD Limit | RPD | Q |
| 1,1,1,2-Tetrachloroethane | 78-124 | 1 | 0 | 21.77 | 20 | 109 | | 21.05 | 20 | 105 | | 20 | 3.38 | |
| 1,1,1-Trichloroethane | 74-131 | 1 | 0 | 22.3 | 20 | 112 | | 22.06 | 20 | 110 | | 20 | 1.12 | |
| 1,1,2,2-Tetrachloroethane | 71-121 | 1 | 0 | 21.15 | 20 | 106 | | 21.18 | 20 | 106 | | 20 | 0.157 | |
| 1,1,2-Trichloroethane | 80-119 | 1 | 0 | 22.39 | 20 | 112 | | 21.18 | 20 | 106 | | 20 | 5.54 | |
| 1,1-Dichloroethane | 77-125 | 1 | 0 | 24.01 | 20 | 120 | | 23.26 | 20 | 116 | | 20 | 3.14 | |
| 1,1-Dichloroethene | 71-131 | 1 | 0 | 23.46 | 20 | 117 | | 22.75 | 20 | 114 | | 20 | 3.07 | |
| 1,1-Dichloropropene | 78-125 | 1 | 0 | 24 | 20 | 120 | | 23.22 | 20 | 116 | | 20 | 3.31 | |
| 1,2,3-Trichlorobenzene | 69-129 | 1 | 0 | 22.39 | 20 | 112 | | 22.96 | 20 | 115 | | 20 | 2.49 | |
| 1,2,3-Trichloropropane | 73-122 | 1 | 0 | 21.16 | 20 | 106 | | 22.24 | 20 | 111 | | 20 | 4.97 | |
| 1,2,4-Trichlorobenzene | 69-130 | 1 | 0 | 21.28 | 20 | 106 | | 21.25 | 20 | 106 | | 20 | 0.146 | |
| 1,2,4-Trimethylbenzene | 76-124 | 1 | 0 | 24.25 | 20 | 121 | | 24.78 | 20 | 124 | | 20 | 2.14 | |
| 1,2-Dibromo-3-chloropropane | 62-128 | 1 | 0 | 17.81 | 20 | 89 | | 18.62 | 20 | 93 | | 20 | 4.47 | |
| 1,2-Dibromoethane | 77-121 | 1 | 0 | 22.47 | 20 | 112 | | 21.66 | 20 | 108 | | 20 | 3.65 | |
| 1,2-Dichlorobenzene | 80-119 | 1 | 0 | 21.61 | 20 | 108 | | 21.23 | 20 | 106 | | 20 | 1.77 | |
| 1,2-Dichloroethane | 73-128 | 1 | 0 | 22.22 | 20 | 111 | | 21.43 | 20 | 107 | | 20 | 3.58 | |
| 1,2-Dichloropropane | 78-122 | 1 | 0 | 24.55 | 20 | 123 | | 23.71 | 20 | 119 | | 20 | 3.48 | |
| 1,3,5-Trimethylbenzene | 75-124 | 1 | 0 | 24.36 | 20 | 122 | | 24.21 | 20 | 121 | | 20 | 0.594 | |
| 1,3-Dichlorobenzene | 80-119 | 1 | 0 | 21.83 | 20 | 109 | | 21.61 | 20 | 108 | | 20 | 1 | |
| 1,3-Dichloropropane | 80-119 | 1 | 0 | 22.97 | 20 | 115 | | 22.13 | 20 | 111 | | 20 | 3.74 | |
| 1,4-Dichlorobenzene | 79-118 | 1 | 0 | 21.48 | 20 | 107 | | 20.84 | 20 | 104 | | 20 | 3.02 | |
| 2,2-Dichloropropane | 60-139 | 1 | 0 | 25.09 | 20 | 125 | | 24.58 | 20 | 123 | | 20 | 2.09 | |
| 2-Butanone | 56-143 | 1 | 0 | 43.61 | 40 | 109 | | 45.95 | 40 | 115 | | 20 | 5.24 | |
| 2-Chlorotoluene | 79-122 | 1 | 0 | 24.07 | 20 | 120 | | 24.01 | 20 | 120 | | 20 | 0.215 | |
| 2-Hexanone | 57-139 | 1 | 0 | 45.24 | 40 | 113 | | 49 | 40 | 122 | | 20 | 7.97 | |
| 4-Chlorotoluene | 78-122 | 1 | 0 | 24.19 | 20 | 121 | | 23.76 | 20 | 119 | | 20 | 1.82 | |
| 4-Isopropyltoluene | 77-127 | 1 | 0 | 25.13 | 20 | 126 | | 25.5 | 20 | 127 | | 20 | 1.45 | |
| 4-Methyl-2-pentanone | 67-130 | 1 | 0 | 42.73 | 40 | 107 | | 44.27 | 40 | 111 | | 20 | 3.53 | |
| Acetone | 39-160 | 1 | 0 | 38.63 | 40 | 97 | | 40.89 | 40 | 102 | | 20 | 5.69 | |
| Benzene | 79-120 | 1 | 0 | 23.38 | 20 | 117 | | 22.41 | 20 | 112 | | 20 | 4.23 | |
| Bromobenzene | 80-120 | 1 | 0 | 21.98 | 20 | 110 | | 21.41 | 20 | 107 | | 20 | 2.6 | |
| Bromochloromethane | 78-123 | 1 | 0 | 21.81 | 20 | 109 | | 21.25 | 20 | 106 | | 20 | 2.6 | |
| Bromodichloromethane | 79-125 | 1 | 0 | 21.36 | 20 | 107 | | 20.77 | 20 | 104 | | 20 | 2.82 | |
| Bromoform | 66-130 | 1 | 0 | 19.38 | 20 | 97 | | 19.19 | 20 | 96 | | 20 | 1.02 | |
| Bromomethane | 53-141 | 1 | 0 | 26.4 | 20 | 132 | | 25.31 | 20 | 127 | | 20 | 4.23 | |

Q - %Recovery / RPD Flag  * - %Recovery / RPD Outside Limits  OL - Outside Limits  %R - %Recovery  DF - Dilution Factor  Amt - Amount (weight or volume)

# Form 3A - Matrix Spike/Spike Duplicate Recovery

**Client** Bhate Environmental Associates, Inc.

Workorder
**HS23091194**

**Project** GROUNDWATER TREATMENT PLANT BI-WEEKLY SAMPLES

RunID
VOA9-447039

## Volatiles by EPA Volatiles Organics by Method 8260C

| LH18/24-SP650_091923 (HS23091194-01) | | | | HS23091194-01MS | | | | HS23091194-01MSD | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Sample Matrix** Aqueous | | | **Run Date** | 09/21/23 | | | | 09/21/23 | | | | | | |
| **Result Units** ug/L | | | **Run Time** | 15:11 | | | | 15:34 | | | | | | |
| | | | **Data File** | U092113.D | | | | U092114.D | | | | | | |
| Analyte | %R Limits | DF | Sample Result | MS Result | Spike Added | %R | Q | MSD Result | Spike Added | %R | Q | RPD Limit | RPD | Q |
| Carbon disulfide | 64-133 | 1 | 0 | 50.9 | 40 | 127 | | 50.22 | 40 | 126 | | 20 | 1.35 | |
| Carbon tetrachloride | 72-136 | 1 | 0 | 25.3 | 20 | 126 | | 23.33 | 20 | 117 | | 20 | 8.1 | |
| Chlorobenzene | 82-118 | 1 | 0 | 22.91 | 20 | 115 | | 21.82 | 20 | 109 | | 20 | 4.86 | |
| Chloroethane | 60-138 | 1 | 0 | 24.68 | 20 | 123 | | 26.01 | 20 | 130 | | 20 | 5.25 | |
| Chloroform | 79-124 | 1 | 0 | 23.67 | 20 | 118 | | 23.1 | 20 | 116 | | 20 | 2.41 | |
| Chloromethane | 50-139 | 1 | 0 | 21.61 | 20 | 108 | | 21.52 | 20 | 108 | | 20 | 0.442 | |
| cis-1,2-Dichloroethene | 78-123 | 1 | 2.31 | 25.89 | 20 | 118 | | 25.61 | 20 | 117 | | 20 | 1.07 | |
| cis-1,3-Dichloropropene | 75-124 | 1 | 0 | 19.46 | 20 | 97 | | 19.24 | 20 | 96 | | 20 | 1.12 | |
| Dibromochloromethane | 74-126 | 1 | 0 | 21 | 20 | 105 | | 20.04 | 20 | 100 | | 20 | 4.67 | |
| Dibromomethane | 79-123 | 1 | 0 | 21.61 | 20 | 108 | | 20.95 | 20 | 105 | | 20 | 3.11 | |
| Dichlorodifluoromethane | 32-152 | 1 | 0 | 18.84 | 20 | 94 | | 17.81 | 20 | 89 | | 20 | 5.6 | |
| Ethylbenzene | 79-121 | 1 | 0 | 24.84 | 20 | 124 | | 23.74 | 20 | 119 | | 20 | 4.56 | |
| Hexachlorobutadiene | 66-134 | 1 | 0 | 24.39 | 20 | 122 | | 23.12 | 20 | 116 | | 20 | 5.36 | |
| Isopropylbenzene | 72-131 | 1 | 0 | 25.54 | 20 | 128 | | 24.26 | 20 | 121 | | 20 | 5.12 | |
| m,p-Xylene | 80-121 | 1 | 0 | 50.09 | 40 | 125 | | 48.19 | 40 | 120 | | 20 | 3.86 | |
| Methylene chloride | 74-124 | 1 | 0 | 24.18 | 20 | 121 | | 23.07 | 20 | 115 | | 20 | 4.68 | |
| Naphthalene | 61-128 | 1 | 0 | 19.76 | 20 | 99 | | 20.86 | 20 | 104 | | 20 | 5.42 | |
| n-Butylbenzene | 75-128 | 1 | 0 | 25.47 | 20 | 127 | | 25.2 | 20 | 126 | | 20 | 1.06 | |
| n-Propylbenzene | 76-126 | 1 | 0 | 23.89 | 20 | 119 | | 24.22 | 20 | 121 | | 20 | 1.36 | |
| o-Xylene | 78-122 | 1 | 0 | 23.15 | 20 | 116 | | 21.63 | 20 | 108 | | 20 | 6.8 | |
| sec-Butylbenzene | 77-126 | 1 | 0 | 24.21 | 20 | 121 | | 24.23 | 20 | 121 | | 20 | 0.0859 | |
| Styrene | 78-123 | 1 | 0 | 21.52 | 20 | 108 | | 20.6 | 20 | 103 | | 20 | 4.36 | |
| tert-Butylbenzene | 78-124 | 1 | 0 | 24.17 | 20 | 121 | | 24.08 | 20 | 120 | | 20 | 0.385 | |
| Tetrachloroethene | 74-129 | 1 | 0 | 24.74 | 20 | 124 | | 23.63 | 20 | 118 | | 20 | 4.59 | |
| Toluene | 80-121 | 1 | 0 | 25.59 | 20 | 128 | | 24.75 | 20 | 124 | | 20 | 3.33 | |
| trans-1,2-Dichloroethene | 75-124 | 1 | 0 | 24.82 | 20 | 124 | | 23.75 | 20 | 119 | | 20 | 4.4 | |
| trans-1,3-Dichloropropene | 73-127 | 1 | 0 | 19.21 | 20 | 96 | | 18.96 | 20 | 95 | | 20 | 1.34 | |
| Trichloroethene | 79-123 | 1 | 0 | 21.84 | 20 | 109 | | 21.25 | 20 | 106 | | 20 | 2.7 | |
| Trichlorofluoromethane | 65-141 | 1 | 0 | 25.66 | 20 | 128 | | 24.39 | 20 | 122 | | 20 | 5.06 | |
| Vinyl chloride | 58-137 | 1 | 0 | 23.94 | 20 | 120 | | 24.47 | 20 | 122 | | 20 | 2.22 | |

Q - %Recovery / RPD Flag  * - %Recovery / RPD Outside Limits  OL - Outside Limits  %R - %Recovery  DF - Dilution Factor  Amt - Amount (weight or volume)

right solutions.
right partner.

Form 3B

# Laboratory Control Sample Recovery

## Volatiles by EPA Volatiles Organics by Method 8260C

Workorder

HS23091194

Client

Bhate Environmental Associates, Inc.

Project

GROUNDWATER TREATMENT PLANT
BI-WEEKLY SAMPLES

09/26/2023

ALS Environmental–Houston Laboratory
10450 Stancliff Road, Suite 210, Houston, TX 77099
Phone (281) 530-5656 Fax (281) 530-5887
www.alsglobal.com

# Form 3B - Laboratory Control Sample Recovery

**Client** Bhate Environmental Associates, Inc.

**Project** GROUNDWATER TREATMENT PLANT BI-WEEKLY SAMPLES

Workorder
**HS23091194**

SAMPLENUM
VLCSW-230921

## Volatiles by EPA Volatiles Organics by Method 8260C

| VOA9_447039 | | VLCSW-230921 | |
|---|---|---|---|
| Spike Matrix | Aqueous | Run Date | 09/21/23 |
| Result Units | ug/L | Run Time | 12:13 |
| | | Data File | U092105.D |

| Analyte | %Recovery Limits | Spike Added | LCS Result | %R | Q |
|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | 78-124 | 20 | 19.91 | 99.6 | |
| 1,1,1-Trichloroethane | 74-131 | 20 | 23.98 | 120 | |
| 1,1,2,2-Tetrachloroethane | 71-121 | 20 | 21.06 | 105 | |
| 1,1,2-Trichloroethane | 80-119 | 20 | 19.87 | 99.4 | |
| 1,1-Dichloroethane | 77-125 | 20 | 22.37 | 112 | |
| 1,1-Dichloroethene | 71-131 | 20 | 20.75 | 104 | |
| 1,1-Dichloropropene | 78-125 | 20 | 20.07 | 100 | |
| 1,2,3-Trichlorobenzene | 69-129 | 20 | 21.43 | 107 | |
| 1,2,3-Trichloropropane | 73-122 | 20 | 21.09 | 105 | |
| 1,2,4-Trichlorobenzene | 69-130 | 20 | 19.71 | 98.5 | |
| 1,2,4-Trimethylbenzene | 76-124 | 20 | 22.47 | 112 | |
| 1,2-Dibromo-3-chloropropane | 62-128 | 20 | 16.35 | 81.7 | |
| 1,2-Dibromoethane | 77-121 | 20 | 20.37 | 102 | |
| 1,2-Dichlorobenzene | 80-119 | 20 | 19.97 | 99.8 | |
| 1,2-Dichloroethane | 73-128 | 20 | 20.46 | 102 | |
| 1,2-Dichloropropane | 78-122 | 20 | 21.69 | 108 | |
| 1,3,5-Trimethylbenzene | 75-124 | 20 | 21.33 | 107 | |
| 1,3-Dichlorobenzene | 80-119 | 20 | 20.66 | 103 | |
| 1,3-Dichloropropane | 80-119 | 20 | 21.52 | 108 | |
| 1,4-Dichlorobenzene | 79-118 | 20 | 19.31 | 96.5 | |
| 2,2-Dichloropropane | 60-139 | 20 | 22.33 | 112 | |
| 2-Butanone | 56-143 | 40 | 44.62 | 112 | |
| 2-Chlorotoluene | 79-122 | 20 | 21.19 | 106 | |
| 2-Hexanone | 57-139 | 40 | 43.25 | 108 | |
| 4-Chlorotoluene | 78-122 | 20 | 21.55 | 108 | |
| 4-Isopropyltoluene | 77-127 | 20 | 20.69 | 103 | |
| 4-Methyl-2-pentanone | 67-130 | 40 | 43.32 | 108 | |
| Acetone | 39-160 | 40 | 46.86 | 117 | |
| Benzene | 79-120 | 20 | 20.52 | 103 | |
| Bromobenzene | 80-120 | 20 | 20.27 | 101 | |
| Bromochloromethane | 78-123 | 20 | 21.51 | 108 | |
| Bromodichloromethane | 79-125 | 20 | 19.68 | 98.4 | |
| Bromoform | 66-130 | 20 | 18.65 | 93.3 | |

Q - %Recovery / RPD Flag * - %Recovery / RPD Outside Limits %R - %Recovery DF - Dilution Factor Amt - Amount (weight or volume)

# Form 3B - Laboratory Control Sample Recovery

**Client** Bhate Environmental Associates, Inc.

Workorder
**HS23091194**

**Project** GROUNDWATER TREATMENT PLANT BI-WEEKLY SAMPLES

SAMPLENUM
VLCSW-230921

## Volatiles by EPA Volatiles Organics by Method 8260C

| VOA9_447039 | | VLCSW-230921 | |
|---|---|---|---|
| Spike Matrix | Aqueous | Run Date | 09/21/23 |
| Result Units | ug/L | Run Time | 12:13 |
| | | Data File | U092105.D |

| Analyte | %Recovery Limits | Spike Added | LCS Result | %R | Q |
|---|---|---|---|---|---|
| Bromomethane | 53-141 | 20 | 25.86 | 129 | |
| Carbon disulfide | 64-133 | 40 | 45.03 | 113 | |
| Carbon tetrachloride | 72-136 | 20 | 19.39 | 97.0 | |
| Chlorobenzene | 82-118 | 20 | 20.35 | 102 | |
| Chloroethane | 60-138 | 20 | 22.96 | 115 | |
| Chloroform | 79-124 | 20 | 22.83 | 114 | |
| Chloromethane | 50-139 | 20 | 21.81 | 109 | |
| cis-1,2-Dichloroethene | 78-123 | 20 | 22.53 | 113 | |
| cis-1,3-Dichloropropene | 75-124 | 20 | 18.46 | 92.3 | |
| Dibromochloromethane | 74-126 | 20 | 19.41 | 97.1 | |
| Dibromomethane | 79-123 | 20 | 19.04 | 95.2 | |
| Dichlorodifluoromethane | 32-152 | 20 | 18.46 | 92.3 | |
| Ethylbenzene | 79-121 | 20 | 21.45 | 107 | |
| Hexachlorobutadiene | 66-134 | 20 | 20.92 | 105 | |
| Isopropylbenzene | 72-131 | 20 | 21.67 | 108 | |
| m,p-Xylene | 80-121 | 40 | 42.19 | 105 | |
| Methylene chloride | 74-124 | 20 | 24.4 | 122 | |
| Naphthalene | 61-128 | 20 | 18.57 | 92.8 | |
| n-Butylbenzene | 75-128 | 20 | 21.74 | 109 | |
| n-Propylbenzene | 76-126 | 20 | 21.3 | 106 | |
| o-Xylene | 78-122 | 20 | 20.16 | 101 | |
| sec-Butylbenzene | 77-126 | 20 | 21.48 | 107 | |
| Styrene | 78-123 | 20 | 20.05 | 100 | |
| tert-Butylbenzene | 78-124 | 20 | 21.39 | 107 | |
| Tetrachloroethene | 74-129 | 20 | 20.76 | 104 | |
| Toluene | 80-121 | 20 | 22.29 | 111 | |
| trans-1,2-Dichloroethene | 75-124 | 20 | 22.21 | 111 | |
| trans-1,3-Dichloropropene | 73-127 | 20 | 18.09 | 90.4 | |
| Trichloroethene | 79-123 | 20 | 18.3 | 91.5 | |
| Trichlorofluoromethane | 65-141 | 20 | 22.67 | 113 | |
| Vinyl chloride | 58-137 | 20 | 21.8 | 109 | |

Q - %Recovery / RPD Flag  * - %Recovery / RPD Outside Limits  %R - %Recovery  DF - Dilution Factor  Amt - Amount (weight or volume)

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right partner.

Form 4

# Method Blank Summary

# Volatiles by EPA Volatiles Organics by Method 8260C

Workorder

HS23091194

Client

Bhate Environmental Associates, Inc.

Project

GROUNDWATER TREATMENT PLANT
BI-WEEKLY SAMPLES

09/26/2023

ALS Environmental–Houston Laboratory
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Phone (281) 530-5656 Fax (281) 530-5887
www.alsglobal.com

# Form 4 - Method Blank Summary

**Client** Bhate Environmental Associates, Inc.

**Project** GROUNDWATER TREATMENT PLANT BI-WEEKLY SAMPLES

Workorder
**HS23091194**

## Volatiles by EPA Volatiles Organics by Method 8260C

| Client Sample ID | Type | Lab Sample ID | File ID | Date Analyzed | BatchID |
|---|---|---|---|---|---|
| METHOD BLANK | MBLK | VBLKW-230921 | U092108.D | 09/21/23 13:20 | 0 |
| VLCSW-230921 | LCS | VLCSW-230921 | U092105.D | 09/21/23 12:13 | 0 |
| Trip Blank | SAMP | HS23091194-02 | U092109.D | 09/21/23 13:42 | 0 |
| LH18/24-SP650_091923 | SAMP | HS23091194-01 | U092110.D | 09/21/23 14:04 | 0 |
| LH18/24-SP650_091923 | MS | HS23091194-01MS | U092113.D | 09/21/23 15:11 | 0 |
| LH18/24-SP650_091923 | MSD | HS23091194-01MSD | U092114.D | 09/21/23 15:34 | 0 |

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right partner.

Form 5

# Instrument Performance Check

# Volatiles by EPA Volatiles Organics by Method 8260C

Workorder

HS23091194

Client

Bhate Environmental Associates, Inc.

Project

GROUNDWATER TREATMENT PLANT
BI-WEEKLY SAMPLES

09/26/2023

ALS Environmental–Houston Laboratory
10450 Stancliff Road, Suite 210, Houston, TX 77099
Phone (281) 530-5656 Fax (281) 530-5887
www.alsglobal.com

# Form 5 - Instrument Performance Check

**Client** Bhate Environmental Associates, Inc.

Workorder
**HS23091194**

**Project** GROUNDWATER TREATMENT PLANT BI-WEEKLY SAMPLES

RunID
VOA9-446513

## Volatiles by EPA Volatiles Organics by Method 8260C

Tune File U091401.D 09/14/23 9/14/2023

| m / e | Ion Abundance Criterion | %RA |
|---|---|---|
| 50 | 15.0 - 40.0% of mass 95 | 18.6 (18.6) |
| 75 | 30.0 - 60.0% of mass 95 | 47.5 (47.5) |
| 95 | Base peak, 100% RA | 100 (100) |
| 96 | 5.0 - 9.0% of mass 95 | 6 (6.04) |
| 173 | Less than 2.0% of mass 174 | 0 (0) 1 |
| 174 | 50.0 - 120.0% of mass 95 | 92.2 (92.2) |
| 175 | 4.0 - 9.0% of mass 174 | 7.7 (8.32) 1 |
| 176 | 93.0 - 101.0% of mass 174 | 87.6 (95.1) 1 |
| 177 | 5.0 - 9.0% of mass 176 | 5.7 (6.54) 2 |

%RA - Percent Relative Abundance

This check applies to the following analyses

| | Lab Samp ID | Type | Date Analyzed | Lab File ID | Sample ID |
|---|---|---|---|---|---|
| 1 | VSTD000.25 | ICAL1 | 9/14/2023 | U091402 | VSTD000.25 |
| 2 | VSTD000.5 | ICAL2 | 9/14/2023 | U091403 | VSTD000.5 |
| 3 | VSTD001 | ICAL3 | 9/14/2023 | U091404 | VSTD001 |
| 4 | VSTD002 | ICAL4 | 9/14/2023 | U091405 | VSTD002 |
| 5 | VSTD005 | ICAL5 | 9/14/2023 | U091406 | VSTD005 |
| 6 | VSTD020 | ICAL6 | 9/14/2023 | U091407 | VSTD020 |
| 7 | VSTD050 | ICAL7 | 9/14/2023 | U091408 | VSTD050 |
| 8 | VSTD100 | ICAL8 | 9/14/2023 | U091409 | VSTD100 |
| 9 | VSTD150 | ICAL9 | 9/14/2023 | U091410 | VSTD150 |
| 10 | VSTD200 | ICAL | 9/14/2023 | U091411 | VSTD200 |
| 11 | CCV | ICV | 9/14/2023 | U091413 | CCV |

# Form 5 - Instrument Performance Check

**Client** Bhate Environmental Associates, Inc.

Workorder
**HS23091194**

**Project** GROUNDWATER TREATMENT PLANT BI-WEEKLY SAMPLES

RunID
VOA9-447039

## Volatiles by EPA Volatiles Organics by Method 8260C

Tune File U092101.D 09/21/23 9/21/2023

| m / e | Ion Abundance Criterion | %RA |
|---|---|---|
| 50 | 15.0 - 40.0% of mass 95 | 21.5 (21.5) |
| 75 | 30.0 - 60.0% of mass 95 | 51 (51) |
| 95 | Base peak, 100% RA | 100 (100) |
| 96 | 5.0 - 9.0% of mass 95 | 8.4 (8.4) |
| 173 | Less than 2.0% of mass 174 | 0 (0) 1 |
| 174 | 50.0 - 120.0% of mass 95 | 83.4 (83.4) |
| 175 | 4.0 - 9.0% of mass 174 | 7.5 (8.98) 1 |
| 176 | 93.0 - 101.0% of mass 174 | 79.8 (95.7) 1 |
| 177 | 5.0 - 9.0% of mass 176 | 5.3 (6.62) 2 |

%RA - Percent Relative Abundance

This check applies to the following analyses

| | Lab Samp ID | Type | Date Analyzed | Lab File ID | Sample ID |
|---|---|---|---|---|---|
| 1 | CCV | CCV | 9/21/2023 | U092103 | CCV |
| 2 | CCB | CCB | 9/21/2023 | U092104 | CCB |
| 3 | VLCSW- | LCS | 9/21/2023 | U092105 | VLCSW-230921 |
| 4 | VBLKW- | MBLK | 9/21/2023 | U092108 | VBLKW-230921 |
| 5 | HS23091194- | SAMP | 9/21/2023 | U092109 | Trip Blank |
| 6 | HS23091194- | SAMP | 9/21/2023 | U092110 | LH18/24-SP650_091923 |
| 7 | HS23091194- | MS | 9/21/2023 | U092113 | HS23091194-01MS |
| 8 | HS23091194- | MSD | 9/21/2023 | U092114 | HS23091194-01MSD |
| 9 | CCV-END | CCV_EN | 9/21/2023 | U092115 | CCV-END |

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Form 6

# Initial Calibration Data

# Volatiles by EPA Volatiles Organics by Method 8260C

Workorder

HS23091194

Client

Bhate Environmental Associates, Inc.

Project

GROUNDWATER TREATMENT PLANT
BI-WEEKLY SAMPLES

09/26/2023

ALS Environmental–Houston Laboratory
10450 Stancliff Road, Suite 210, Houston, TX 77099
Phone (281) 530-5656 Fax (281) 530-5887
www.alsglobal.com

# Initial Calibration Data

**Client** Bhate Environmental Associates, Inc.

**Project** GROUNDWATER TREATMENT PLANT BI-WEEKLY SAMPLES

**Workorder** HS23091194

**RunID** VOA9_446513

## Volatiles by EPA Volatiles Organics by Method 8260C

**ICAL Start Date** 24-AUG-2023 1226

**ICAL End Date** 14-SEP-2023 2035

**Calibration Files**

**Level 1**..target\chem\voa9.i\u230914.b\u091414.d **Level 5**..target\chem\voa9.i\u230914.b\u091406.d
**Level 2**..target\chem\voa9.i\u230914.b\u091403.d **Level 6**..target\chem\voa9.i\u230914.b\u091407.d
**Level 3**..target\chem\voa9.i\u230914.b\u091404.d **Level 7**..target\chem\voa9.i\u230914.b\u091408.d **Level 9**..target\chem\voa9.i\u230914.b\u091410.d
**Level 4**..target\chem\voa9.i\u230914.b\u091405.d **Level 8**..target\chem\voa9.i\u230914.b\u091409.d **Level 10**target\chem\voa9.i\u230914.b\u091411.d

| Compound | 50.00 Level 7 / 0.250 Level 1 | 100.00 Level 8 / 0.500 Level 2 | 150.00 Level 9 / 1.00 Level 3 | 200.00 Level 10 / 2.00 Level 4 | 5.00 Level 5 | 20.00 Level 6 | Curve | b | m1 | m2 | %RSD or R2 | Q |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Dichlorodifluoromethane | NE<br>365999 | 3707<br>823221 | 6349<br>1304711 | 13431<br>1749434 | 33181 | 143501 | LINR | 0.02676 | 0.56338 | | 0.99846 | |
| Chloromethane | NE<br>679763 | 8313<br>1410566 | 14060<br>2165321 | 29214<br>2776648 | 65950 | 265733 | LINR | -0.01955 | 0.90532 | | 0.99949 | |
| Propionitrile | NE<br>0.09762 | 0.11348<br>0.10097 | 0.13080<br>0.10334 | 0.09983<br>0.11732 | 0.11356 | 0.09793 | AVRG | | 0.10832 | | 10.39324 | |
| Vinyl Chloride | NE<br>0.58953 | 0.63500<br>0.66440 | 0.51826<br>0.68382 | 0.61359<br>0.74487 | 0.61105 | 0.65184 | AVRG | | 0.63471 | | 10.01584 | |
| Bromomethane | NE<br>210271 | 2668<br>434819 | 5410<br>772902 | 10105<br>NE | 22775 | 88771 | LINR | 0.00895 | 0.31241 | | 0.99649 | |
| Chloroethane | NE<br>0.40858 | 0.51407<br>0.45456 | 0.43546<br>0.47522 | 0.48696<br>0.51612 | 0.46633 | 0.44382 | AVRG | | 0.46679 | | 7.64729 | |
| Trichlorofluoromethane | NE<br>0.71384 | 0.84307<br>0.83940 | 0.70050<br>0.85239 | 0.85787<br>0.94657 | 0.78508 | 0.79016 | AVRG | | 0.81432 | | 9.39063 | |
| Acrolein | NE<br>0.03598 | 0.05030<br>0.03862 | 0.04568<br>0.03801 | 0.04274<br>0.04373 | 0.04558 | 0.04548 | AVRG | | 0.04290 | | 10.65123 | |
| Acetone | NE<br>343448 | 7172<br>787149 | 11344<br>1181608 | 19383<br>NE | 44971 | 147123 | LINR | -0.04324 | 0.24825 | | 0.99709 | |
| 1,1-Dichloroethene | NE<br>0.42993 | 0.48044<br>0.49560 | 0.49561<br>0.50712 | 0.53277<br>0.56323 | 0.47214 | 0.47730 | AVRG | | 0.49490 | | 7.66489 | |

NE - Not Evaluated, AVRG - Averaged, LINR - Linear Regression, WLIN - Weighted Linear, QUAD - Quadratic, * - Curve Fit Outside Limits

# Initial Calibration Data

**Client** Bhate Environmental Associates, Inc.

**Project** GROUNDWATER TREATMENT PLANT BI-WEEKLY SAMPLES

**Workorder** HS23091194

**RunID** VOA9_446513

## Volatiles by EPA Volatiles Organics by Method 8260C

**ICAL Start Date** 24-AUG-2023 1226 **ICAL End Date** 14-SEP-2023 2035



| Compound | 50.00 Level 7 0.250 Level 1 | 100.00 Level 8 0.500 Level 2 | 150.00 Level 9 1.00 Level 3 | 200.00 Level 10 2.00 Level 4 | 5.00 Level 5 | 20.00 Level 6 | Curve | b | m1 | m2 | %RSD or R2 | Q |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Isobutyl Alcohol | NE<br>1000328 | 6981<br>2260477 | 14479<br>3741011 | 29170<br>NE | 69816 | 337097 | LINR | 0.74634 | 0.07773 | | 0.99832 | |
| Acetonitrile | NE<br>0.06976 | 0.06905<br>0.07789 | 0.07382<br>0.08058 | 0.07474<br>0.09190 | 0.07703 | 0.07180 | AVRG | | 0.07629 | | 9.13624 | |
| Allyl Chloride | NE<br>1.58330 | 1.99685<br>1.71222 | 1.73391<br>1.75396 | 1.71895<br>2.00686 | 1.79500 | 1.65455 | AVRG | | 1.77284 | | 8.07147 | |
| Iodomethane | NE<br>379247 | 3691<br>938697 | 6809<br>1796657 | 12296<br>2669085 | 28118 | 126031 | QUAD | 0.06674 | 3.55616 | -0.37217 | 0.99869 | |
| Acrylonitrile | NE<br>0.26035 | 0.31688<br>0.28035 | 0.31053<br>0.28563 | 0.25151<br>0.33071 | 0.31054 | 0.27845 | AVRG | | 0.29166 | | 9.23533 | |
| Methylene Chloride | NE<br>422454 | 5165<br>885454 | 11952<br>1469875 | 21334<br>2059188 | 46477 | 168006 | LINR | 0.03386 | 0.64995 | | 0.99512 | |
| Methyl tert-butyl ether | NE<br>1.27552 | 1.62967<br>1.42506 | 1.35198<br>1.49581 | 1.14063<br>1.74702 | 1.30996 | 1.27057 | AVRG | | 1.40514 | | 13.61238 | |
| Carbon Disulfide | NE<br>1.23844 | 1.26383<br>1.41052 | 1.07437<br>1.45112 | 1.46170<br>1.58693 | 1.23120 | 1.31348 | AVRG | | 1.33684 | | 11.59541 | |
| trans-1,2-Dichloroethene | NE<br>0.47975 | 0.55428<br>0.53277 | 0.39266<br>0.54631 | 0.51711<br>0.60246 | 0.53193 | 0.51528 | AVRG | | 0.51917 | | 11.15481 | |
| Vinyl Acetate | NE<br>1.73873 | 1.90853<br>1.92746 | 1.50781<br>2.05417 | 1.65026<br>2.34587 | 1.68954 | 1.70870 | AVRG | | 1.83679 | | 13.75302 | |
| 1,1-Dichloroethane | NE<br>0.93943 | 1.07383<br>1.02643 | 0.91917<br>1.04335 | 1.14236<br>1.17528 | 1.03943 | 1.01161 | AVRG | | 1.04121 | | 8.00852 | |
| Chloroprene | NE<br>0.18634 | 0.20040<br>0.22946 | 0.15392<br>0.24364 | 0.19604<br>NE | 0.19444 | 0.19631 | AVRG | | 0.20007 | | 13.54802 | |

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# Initial Calibration Data

**Client** Bhate Environmental Associates, Inc.

**Project** GROUNDWATER TREATMENT PLANT BI-WEEKLY SAMPLES

**Workorder** HS23091194

**RunID** VOA9_446513

## Volatiles by EPA Volatiles Organics by Method 8260C

**ICAL Start Date** 24-AUG-2023 1226 **ICAL End Date** 14-SEP-2023 2035



| Compound | 50.00 Level 7 0.250 Level 1 | 100.00 Level 8 0.500 Level 2 | 150.00 Level 9 1.00 Level 3 | 200.00 Level 10 2.00 Level 4 | 5.00 Level 5 | 20.00 Level 6 | Curve | b | m1 | m2 | %RSD or R2 | Q |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2-Butanone | NE<br>0.26601 | 0.32564<br>0.30047 | 0.30306<br>0.29640 | 0.29810<br>0.34410 | 0.30774 | 0.28603 | AVRG | | 0.30306 | | 7.33642 | |
| Methacrylonitrile | NE<br>0.34930 | 0.43147<br>0.38177 | 0.33617<br>0.41204 | 0.40568<br>0.45363 | 0.40218 | 0.36522 | AVRG | | 0.39305 | | 9.77190 | |
| 2,2-Dichloropropane | NE<br>0.56716 | 0.67818<br>0.66538 | 0.50690<br>0.68003 | 0.59851<br>0.77977 | 0.60975 | 0.58850 | AVRG | | 0.63046 | | 12.63104 | |
| cis-1,2-Dichloroethene | NE<br>0.55005 | 0.60106<br>0.59671 | 0.53281<br>0.60765 | 0.58764<br>0.67055 | 0.60368 | 0.59228 | AVRG | | 0.59360 | | 6.50141 | |
| Chloroform | NE<br>0.92536 | 1.01438<br>0.99160 | 0.93201<br>0.99258 | 1.09787<br>1.09686 | 1.05814 | 0.99018 | AVRG | | 1.01100 | | 6.24335 | |
| Bromochloromethane | NE<br>0.28350 | 0.31930<br>0.29806 | 0.30348<br>0.29564 | 0.35122<br>0.32321 | 0.32568 | 0.29962 | AVRG | | 0.31108 | | 6.62379 | |
| 1,1,1-Trichloroethane | NE<br>0.61436 | 0.71682<br>0.72978 | 0.58230<br>0.71056 | 0.74141<br>0.76778 | 0.64471 | 0.67128 | AVRG | | 0.68656 | | 9.07185 | |
| 1,1-Dichloropropene | NE<br>0.35684 | 0.40403<br>0.41723 | 0.37255<br>0.41033 | 0.41616<br>0.42559 | 0.37965 | 0.38991 | AVRG | | 0.39692 | | 5.89717 | |
| 1,2-Dichloroethane | NE<br>0.46304 | 0.54072<br>0.47428 | 0.47800<br>0.45091 | 0.47176<br>0.46099 | 0.50381 | 0.50629 | AVRG | | 0.48331 | | 5.87332 | |
| Carbon Tetrachloride | NE<br>0.32605 | 0.35901<br>0.40768 | 0.29944<br>0.39073 | 0.34386<br>0.40129 | 0.30615 | 0.36174 | AVRG | | 0.35511 | | 11.21576 | |
| Benzene | NE<br>1.19376 | 1.43643<br>1.28481 | 1.14071<br>1.23498 | 1.25495<br>1.25284 | 1.24368 | 1.26046 | AVRG | | 1.25585 | | 6.36851 | |
| Trichloroethene | NE<br>0.32324 | 0.38916<br>0.36229 | 0.41141<br>0.35273 | 0.40076<br>0.35433 | 0.34830 | 0.34523 | AVRG | | 0.36527 | | 7.92367 | |

NE - Not Evaluated, AVRG - Averaged, LINR - Linear Regression, WLIN - Weighted Linear, QUAD - Quadratic, * - Curve Fit Outside Limits

# Initial Calibration Data

**Client** Bhate Environmental Associates, Inc.

**Project** GROUNDWATER TREATMENT PLANT BI-WEEKLY SAMPLES

**Workorder** HS23091194

**RunID** VOA9_446513

## Volatiles by EPA Volatiles Organics by Method 8260C

**ICAL Start Date** 24-AUG-2023 1226 **ICAL End Date** 14-SEP-2023 2035



| Compound | 50.00 Level 7 0.250 Level 1 | 100.00 Level 8 0.500 Level 2 | 150.00 Level 9 1.00 Level 3 | 200.00 Level 10 2.00 Level 4 | 5.00 Level 5 | 20.00 Level 6 | Curve | b | m1 | m2 | %RSD or R2 | Q |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | NE<br>0.39485 | 0.45127<br>0.43233 | 0.32945<br>0.42235 | 0.38930<br>0.43526 | 0.41061 | 0.40043 | AVRG | | 0.40732 | | 8.75214 | |
| Methyl Methacrylate | NE<br>0.41200 | 0.43648<br>0.44683 | 0.35111<br>0.44968 | 0.37495<br>0.50094 | 0.35765 | 0.35529 | AVRG | | 0.40944 | | 12.90456 | |
| 2-Chloroethylvinyl ether | NE<br>3835 | 53.00000<br>8728 | 75.00000<br>13383 | 139<br>NE | 336 | 1495 | LINR | 0.01042 | 0.00182 | | 0.99811 | |
| 1,2-Dichloropropane | NE<br>0.33009 | 0.33257<br>0.34397 | 0.25940<br>0.34038 | 0.35639<br>0.35012 | 0.33355 | 0.33824 | AVRG | | 0.33163 | | 8.56288 | |
| 2-Nitropropane | NE<br>NE | NE<br>NE | NE<br>NE | NE<br>NE | NE | NE | AVRG | | 0.000e+000 | | 0.000e+000 | * |
| Dibromomethane | NE<br>0.22042 | 0.26403<br>0.22390 | 0.21630<br>0.21470 | 0.23416<br>0.22452 | 0.23528 | 0.22176 | AVRG | | 0.22834 | | 6.61787 | |
| 4-Methyl-2-Pentanone | NE<br>766488 | 6101<br>1680595 | 7941<br>2729579 | 19237<br>3882854 | 55368 | 259947 | LINR | 0.05070 | 0.38061 | | 0.99946 | |
| cis-1,3-Dichloropropene | NE<br>501695 | 4418<br>1167680 | 6792<br>1934103 | 14220<br>2674030 | 34543 | 160625 | LINR | 0.06306 | 0.53920 | | 0.99740 | |
| Ethyl Methacrylate | NE<br>0.41268 | 0.45680<br>0.45442 | 0.36246<br>0.46735 | 0.38395<br>0.54587 | 0.45021 | 0.39076 | AVRG | | 0.43606 | | 12.75212 | |
| Toluene | NE<br>1.34569 | 1.45082<br>1.46239 | 1.07184<br>1.40533 | 1.23344<br>1.40314 | 1.27701 | 1.43363 | AVRG | | 1.34259 | | 9.54890 | |
| trans-1,3-Dichloropropene | NE<br>422161 | 3003<br>972012 | 5013<br>1618558 | 11642<br>NE | 26471 | 130809 | LINR | 0.04789 | 0.43342 | | 0.99763 | |
| 2-Hexanone | NE<br>0.22932 | 0.20700<br>0.25813 | 0.18903<br>0.25314 | 0.21693<br>0.27813 | 0.19422 | 0.21418 | AVRG | | 0.22667 | | 13.46620 | |

NE - Not Evaluated, AVRG - Averaged, LINR - Linear Regression, WLIN - Weighted Linear, QUAD - Quadratic, * - Curve Fit Outside Limits

# Initial Calibration Data

**Client** Bhate Environmental Associates, Inc.

**Project** GROUNDWATER TREATMENT PLANT BI-WEEKLY SAMPLES

**Workorder** HS23091194

**RunID** VOA9_446513

## Volatiles by EPA Volatiles Organics by Method 8260C

**ICAL Start Date** 24-AUG-2023 1226 **ICAL End Date** 14-SEP-2023 2035



| Compound | 50.00 Level 7 0.250 Level 1 | 100.00 Level 8 0.500 Level 2 | 150.00 Level 9 1.00 Level 3 | 200.00 Level 10 2.00 Level 4 | 5.00 Level 5 | 20.00 Level 6 | Curve | b | m1 | m2 | %RSD or R2 | Q |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1,2-Trichloroethane | NE<br>0.27764 | 0.34447<br>0.28684 | 0.28956<br>0.27121 | 0.30896<br>0.27991 | 0.29400 | 0.28227 | AVRG | | 0.29276 | | 7.59199 | |
| 1,3-Dichloropropane | NE<br>0.55932 | 0.64394<br>0.59668 | 0.53726<br>0.57449 | 0.60703<br>0.58087 | 0.62003 | 0.58015 | AVRG | | 0.58886 | | 5.46268 | |
| Dibromochloromethane | NE<br>0.35255 | 0.39670<br>0.39025 | 0.27799<br>0.37643 | 0.31490<br>0.38617 | 0.30544 | 0.33577 | AVRG | | 0.34847 | | 12.17510 | |
| Tetrachloroethene | NE<br>0.28439 | 0.33768<br>0.33024 | 0.29417<br>0.30568 | 0.32019<br>0.30642 | 0.29970 | 0.33694 | AVRG | | 0.31283 | | 6.16711 | |
| 1,2-Dibromoethane | NE<br>0.34711 | 0.36002<br>0.35966 | 0.32308<br>0.35711 | 0.32188<br>0.37780 | 0.36311 | 0.35686 | AVRG | | 0.35185 | | 5.24926 | |
| 1-Chlorohexane | NE<br>0.23239 | 0.33730<br>0.30896 | 0.28436<br>0.32654 | 0.27718<br>0.38591 | 0.27728 | 0.28869 | AVRG | | 0.30207 | | 14.57094 | |
| Chlorobenzene | NE<br>0.91636 | 1.06386<br>0.99276 | 0.87812<br>0.97638 | 1.03958<br>1.01684 | 1.05205 | 1.00122 | AVRG | | 0.99302 | | 6.23425 | |
| 1,1,1,2-Tetrachloroethane | NE<br>0.31804 | 0.36834<br>0.35234 | 0.29571<br>0.34755 | 0.31049<br>0.36224 | 0.31400 | 0.33496 | AVRG | | 0.33374 | | 7.61789 | |
| Ethylbenzene | NE<br>0.40959 | 0.45057<br>0.49896 | 0.36253<br>0.49299 | 0.41356<br>0.51149 | 0.41423 | 0.44783 | AVRG | | 0.44464 | | 11.15028 | |
| m,p-Xylenes | NE<br>0.50182 | 0.51611<br>0.63305 | 0.47807<br>0.65096 | 0.53806<br>0.67800 | 0.48452 | 0.55163 | AVRG | | 0.55914 | | 13.53220 | |
| o-Xylene | NE<br>0.51076 | 0.60409<br>0.62094 | 0.55400<br>0.64078 | 0.54655<br>0.68422 | 0.54264 | 0.52588 | AVRG | | 0.58109 | | 10.12904 | |
| Styrene | NE<br>0.78758 | 0.87651<br>0.97578 | 0.72659<br>1.06148 | 0.83274<br>1.11914 | 0.85665 | 0.79379 | AVRG | | 0.89225 | | 14.83920 | |

NE - Not Evaluated, AVRG - Averaged, LINR - Linear Regression, WLIN - Weighted Linear, QUAD - Quadratic, * - Curve Fit Outside Limits

# Initial Calibration Data

**Client** Bhate Environmental Associates, Inc.

**Project** GROUNDWATER TREATMENT PLANT BI-WEEKLY SAMPLES

**Workorder** HS23091194

**RunID** VOA9_446513

## Volatiles by EPA Volatiles Organics by Method 8260C

**ICAL Start Date** 24-AUG-2023 1226 **ICAL End Date** 14-SEP-2023 2035



| Compound | 50.00 Level 7 0.250 Level 1 | 100.00 Level 8 0.500 Level 2 | 150.00 Level 9 1.00 Level 3 | 200.00 Level 10 2.00 Level 4 | 5.00 Level 5 | 20.00 Level 6 | Curve | b | m1 | m2 | %RSD or R2 | Q |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| cis-1,4-Dichloro-2-butene | NE<br>NE | NE<br>NE | NE<br>NE | NE<br>NE | NE | NE | AVRG | | 0.000e+000 | | 0.000e+000 | * |
| Bromoform | NE<br>248786 | 2213<br>553169 | 3346<br>971749 | 7208<br>1484437 | 18129 | 86866 | LINR | 0.07130 | 0.28327 | | 0.99565 | |
| Isopropylbenzene | NE<br>1270310 | 12158<br>3338525 | 19078<br>5778129 | 40776<br>8637564 | 106778 | 536621 | QUAD | 0.02951 | 0.72440 | -0.02036 | 0.99802 | |
| 1,1,2,2-Tetrachloroethane | NE<br>0.96877 | 1.07691<br>0.96428 | 0.94252<br>0.94068 | 0.96138<br>0.97891 | 0.96650 | 0.94232 | AVRG | | 0.97136 | | 4.30583 | |
| 1,2,3-Trichloropropane | NE<br>0.83400 | 0.92643<br>0.86499 | 0.68740<br>0.84951 | 0.72811<br>0.93383 | 0.84761 | 0.77833 | AVRG | | 0.82780 | | 10.04826 | |
| trans-1,4-Dichloro-2-butene | NE<br>75428 | 725<br>182461 | 1290<br>338574 | 2699<br>554286 | 7259 | 27892 | QUAD | 0.01682 | 13.66836 | -10.35493 | 0.99923 | |
| n-Propylbenzene | NE<br>1319916 | 9893<br>3742926 | 15066<br>6534980 | 40048<br>9390355 | 104281 | 564347 | LINR | 0.06036 | 3.29374 | | 0.99702 | |
| Bromobenzene | NE<br>0.78617 | 0.82872<br>0.80782 | 0.79775<br>0.78196 | 0.75922<br>0.82436 | 0.76125 | 0.80466 | AVRG | | 0.79466 | | 3.12387 | |
| 1,3,5-Trimethylbenzene | NE<br>1.69678 | 1.83479<br>2.13613 | 1.54429<br>2.16986 | 1.69752<br>2.32869 | 1.67877 | 1.83936 | AVRG | | 1.88069 | | 14.25145 | |
| 2-Chlorotoluene | NE<br>1.78931 | 1.84667<br>2.03107 | 1.55647<br>1.97597 | 1.82372<br>2.07534 | 1.69055 | 1.91960 | AVRG | | 1.85652 | | 8.92955 | |
| 4-Chlorotoluene | NE<br>2.05404 | 2.45550<br>2.42415 | 1.76830<br>2.39950 | 1.85665<br>2.48853 | 1.94977 | 2.21007 | AVRG | | 2.17850 | | 12.80654 | |
| tert-Butylbenzene | NE<br>1.61445 | 1.73209<br>2.09185 | 1.34748<br>2.09599 | 1.69439<br>2.16064 | 1.66027 | 1.89111 | AVRG | | 1.80981 | | 14.93883 | |

NE - Not Evaluated, AVRG - Averaged, LINR - Linear Regression, WLIN - Weighted Linear, QUAD - Quadratic, * - Curve Fit Outside Limits

# Initial Calibration Data

**Client** Bhate Environmental Associates, Inc.

**Project** GROUNDWATER TREATMENT PLANT BI-WEEKLY SAMPLES

**Workorder** HS23091194

**RunID** VOA9_446513

## Volatiles by EPA Volatiles Organics by Method 8260C

**ICAL Start Date** 24-AUG-2023 1226 **ICAL End Date** 14-SEP-2023 2035



| Compound | 50.00 Level 7 0.250 Level 1 | 100.00 Level 8 0.500 Level 2 | 150.00 Level 9 1.00 Level 3 | 200.00 Level 10 2.00 Level 4 | 5.00 Level 5 | 20.00 Level 6 | Curve | b | m1 | m2 | %RSD or R2 | Q |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trimethylbenzene | NE<br>1.74069 | 1.99835<br>2.14733 | 1.50833<br>2.19276 | 1.66966<br>2.34455 | 1.80604 | 1.99088 | AVRG | | 1.93318 | | 14.08589 | |
| Pentachloroethane | NE<br>NE | NE<br>NE | NE<br>NE | NE<br>NE | NE | NE | AVRG | | 0.000e+000 | | 0.000e+000 | |
| sec-Butylbenzene | NE<br>1078548 | 9443<br>3233827 | 14747<br>5794903 | 37386<br>8545916 | 102146 | 487620 | QUAD | 0.03553 | 0.40159 | -0.00601 | 0.99728 | |
| p-Isopropyltoluene | NE<br>858100 | 7845<br>2596903 | 10971<br>4754112 | 30473<br>7125106 | 91770 | 379700 | QUAD | 0.03551 | 0.50599 | -0.01109 | 0.99726 | |
| 1,3-Dichlorobenzene | NE<br>1.29564 | 1.64936<br>1.43331 | 1.14193<br>1.41516 | 1.40808<br>1.45953 | 1.34972 | 1.46142 | AVRG | | 1.40157 | | 9.79907 | |
| 1,4-Dichlorobenzene | NE<br>1.36452 | 1.73898<br>1.57084 | 1.64932<br>1.50126 | 1.67312<br>1.55645 | 1.59518 | 1.52280 | AVRG | | 1.57472 | | 6.93007 | |
| bis(2-Chloro-isopropyl)ether | NE<br>NE | NE<br>NE | NE<br>NE | NE<br>NE | NE | NE | AVRG | | 0.000e+000 | | 0.000e+000 | * |
| Benzyl Chloride | NE<br>238400 | 2308<br>669969 | 4481<br>1319002 | 10494<br>NE | 25511 | 90176 | QUAD | 0.01651 | 4.22254 | -1.38763 | 0.99660 | |
| n-Butylbenzene | NE<br>771155 | 6875<br>2423452 | 10524<br>4319547 | 25685<br>6555037 | 70297 | 345471 | QUAD | 0.04120 | 0.54839 | -0.01292 | 0.99669 | |
| 1,2-Dichlorobenzene | NE<br>1.30363 | 1.59492<br>1.51325 | 1.25783<br>1.44593 | 1.47321<br>1.50014 | 1.36852 | 1.44379 | AVRG | | 1.43347 | | 7.42571 | |
| 1,2-Dibromo-3-Chloropropane | NE<br>0.11727 | 0.12528<br>0.12818 | 0.13519<br>0.12273 | 0.11938<br>0.14047 | 0.09968 | 0.09952 | AVRG | | 0.12086 | | 11.64772 | |
| 1,2,4-Trichlorobenzene | NE<br>0.79133 | 0.79544<br>0.91831 | 0.65973<br>0.87584 | 0.80193<br>0.94575 | 0.77915 | 0.77709 | AVRG | | 0.81606 | | 10.55973 | |

NE - Not Evaluated, AVRG - Averaged, LINR - Linear Regression, WLIN - Weighted Linear, QUAD - Quadratic, * - Curve Fit Outside Limits

# Initial Calibration Data

**Client** Bhate Environmental Associates, Inc.

**Project** GROUNDWATER TREATMENT PLANT BI-WEEKLY SAMPLES

**Workorder** HS23091194

**RunID** VOA9_446513

## Volatiles by EPA Volatiles Organics by Method 8260C

**ICAL Start Date** 24-AUG-2023 1226 **ICAL End Date** 14-SEP-2023 2035



| Compound | 50.00 Level 7 0.250 Level 1 | 100.00 Level 8 0.500 Level 2 | 150.00 Level 9 1.00 Level 3 | 200.00 Level 10 2.00 Level 4 | 5.00 Level 5 | 20.00 Level 6 | Curve | b | m1 | m2 | %RSD or R2 | Q |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hexachlorobutadiene | NE<br>0.29572 | 0.39938<br>0.39116 | 0.32726<br>0.35455 | 0.39421<br>0.38416 | 0.36938 | 0.37954 | AVRG | | 0.36615 | | 9.47976 | |
| Naphthalene | NE<br>1096628 | 8877<br>2667441 | 13176<br>4538786 | 27784<br>6850147 | 71056 | 371874 | LINR | 0.05461 | 2.36301 | | 0.99749 | |
| 1,2,3-Trichlorobenzene | NE<br>0.79082 | 0.80281<br>0.88470 | 0.63654<br>0.84765 | 0.63671<br>0.92009 | 0.65132 | 0.80227 | AVRG | | 0.77477 | | 13.96996 | |
| Ethyl Acetate | NE<br>0.69285 | 0.73810<br>0.74414 | 0.74245<br>0.75653 | 0.69433<br>0.88171 | 0.73387 | 0.70967 | AVRG | | 0.74374 | | 7.59451 | |
| Methyl Acrylate | NE<br>0.72768 | 0.85841<br>0.76506 | 0.74004<br>0.79249 | 0.66578<br>0.91860 | 0.81516 | 0.72118 | AVRG | | 0.77827 | | 9.93062 | |
| n-Butanol | NE<br>192290 | 1719<br>457128 | 2369<br>763912 | 6853<br>1029553 | 13604 | 59879 | LINR | 1.44831 | 0.01664 | | 0.99636 | |
| Ethyl Acrylate | NE<br>1.08362 | 1.18005<br>1.29388 | 0.94913<br>1.24318 | 1.03653<br>1.42111 | 1.14681 | 1.11060 | AVRG | | 1.16277 | | 12.21999 | |
| Cyclohexanone | NE<br>317398 | 2558<br>842236 | 3824<br>1362676 | 10101<br>2213446 | 25352 | 118478 | QUAD | 0.27792 | 33.05577 | -2.30848 | 0.99696 | |
| 1,4-Dioxane | 0.00807<br>0.00672 | 0.00846<br>0.00704 | 0.00769<br>0.00662 | 0.00679<br>0.00705 | 0.00752 | 0.00671 | AVRG | | 0.00727 | | 8.78626 | |
| n-Hexane | NE<br>339399 | 3717<br>992187 | 6922<br>1644568 | 14741<br>NE | 34377 | 167899 | QUAD | 0.01308 | 1.82503 | -0.18854 | 0.99366 | |
| n-Pentane | NE<br>NE | NE<br>NE | NE<br>NE | NE<br>NE | NE | NE | AVRG | | 0.000e+000 | | 0.000e+000 | |
| Freon TF | NE<br>261309 | 3073<br>684389 | 4663<br>1134738 | 11603<br>1638859 | 25879 | 120741 | QUAD | 0.00284 | 2.55565 | -0.32192 | 0.99833 | |

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# Initial Calibration Data

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**Project** GROUNDWATER TREATMENT PLANT BI-WEEKLY SAMPLES

**Workorder** HS23091194

**RunID** VOA9_446513

## Volatiles by EPA Volatiles Organics by Method 8260C

**ICAL Start Date** 24-AUG-2023 1226 **ICAL End Date** 14-SEP-2023 2035



| Compound | 50.00 Level 7 0.250 Level 1 | 100.00 Level 8 0.500 Level 2 | 150.00 Level 9 1.00 Level 3 | 200.00 Level 10 2.00 Level 4 | 5.00 Level 5 | 20.00 Level 6 | Curve | b | m1 | m2 | %RSD or R2 | Q |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Methyl Acetate | NE<br>0.53114 | 0.71573<br>0.56195 | 0.61926<br>0.57857 | 0.64790<br>0.65884 | 0.61217 | 0.53063 | AVRG | | 0.60624 | | 10.23128 | |
| Methylcyclohexane | NE<br>0.70028 | 0.77480<br>0.83462 | 0.54081<br>0.79913 | 0.63067<br>0.88514 | 0.71513 | 0.71598 | AVRG | | 0.73295 | | 14.36482 | |
| Isopropyl alcohol | NE<br>0.03964 | 0.05144<br>0.04238 | 0.03837<br>0.04441 | 0.04825<br>0.05087 | 0.04157 | 0.03863 | AVRG | | 0.04395 | | 11.62350 | |
| Amyl alcohol | NE<br>NE | NE<br>NE | NE<br>NE | NE<br>NE | NE | NE | AVRG | | 0.000e+000 | | 0.000e+000 | * |
| Allyl alcohol | NE<br>339399 | 3417<br>992187 | 8402<br>1644568 | 15482<br>2449493 | 34377 | 167899 | QUAD | 0.29393 | 35.97672 | -3.46793 | 0.99684 | |
| 4-Methyl-2-pentanol | NE<br>1331093 | 11606<br>3282152 | 16850<br>5678265 | 33476<br>8869066 | 97556 | 463540 | QUAD | 0.42184 | 16.46473 | -0.75433 | 0.99939 | |
| Tert-butyl alcohol | NE<br>0.05485 | 0.07444<br>0.05883 | 0.05025<br>0.06182 | 0.06155<br>0.07175 | 0.06215 | 0.05575 | AVRG | | 0.06126 | | 12.68809 | |
| Diethyl ether | NE<br>0.44841 | 0.51001<br>0.48146 | 0.50059<br>0.49697 | 0.51274<br>0.57102 | 0.48968 | 0.44880 | AVRG | | 0.49552 | | 7.43867 | |
| 1,3-Butadiene | NE<br>0.54864 | 0.57853<br>0.60796 | 0.52627<br>0.62906 | 0.57573<br>0.69704 | 0.57632 | 0.57676 | AVRG | | 0.59070 | | 8.41589 | |
| Cyclohexane | NE<br>417496 | 4570<br>1133205 | 7153<br>1767337 | 16765<br>2438404 | 42320 | 197210 | QUAD | 0.01046 | 1.51027 | -0.08083 | 0.99721 | |
| Tetrahydrofuran | NE<br>0.11413 | 0.14518<br>0.12434 | 0.12875<br>0.12454 | 0.12727<br>NE | 0.12313 | 0.11639 | AVRG | | 0.12546 | | 7.50836 | |
| 1-Chlorobutane | NE<br>NE | NE<br>NE | NE<br>NE | NE<br>NE | NE | NE | AVRG | | 0.000e+000 | | 0.000e+000 | |

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# Initial Calibration Data

**Client** Bhate Environmental Associates, Inc.

**Project** GROUNDWATER TREATMENT PLANT BI-WEEKLY SAMPLES

**Workorder** HS23091194

**RunID** VOA9_446513

## Volatiles by EPA Volatiles Organics by Method 8260C

**ICAL Start Date** 24-AUG-2023 1226 **ICAL End Date** 14-SEP-2023 2035



| Compound | 50.00 Level 7 0.250 Level 1 | 100.00 Level 8 0.500 Level 2 | 150.00 Level 9 1.00 Level 3 | 200.00 Level 10 2.00 Level 4 | 5.00 Level 5 | 20.00 Level 6 | Curve | b | m1 | m2 | %RSD or R2 | Q |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Nitrobenzene | NE<br>NE | NE<br>NE | NE<br>NE | NE<br>NE | NE | NE | AVRG | | 0.000e+000 | | 0.000e+000 | |
| alpha-Methylstyrene | NE<br>352370 | 3195<br>970876 | 5828<br>1832249 | 12611<br>2850527 | 31357 | 140696 | QUAD | 0.02640 | 1.36617 | -0.09368 | 0.99875 | |
| Tetraethyl lead | NE<br>NE | NE<br>NE | NE<br>NE | NE<br>NE | NE | NE | AVRG | | 0.000e+000 | | 0.000e+000 | |
| 2,3-Dichlorobutane | NE<br>NE | NE<br>NE | NE<br>NE | NE<br>NE | NE | NE | AVRG | | 0.000e+000 | | 0.000e+000 | |
| 2-Pentanone | NE<br>NE | NE<br>NE | NE<br>NE | NE<br>NE | NE | NE | AVRG | | 0.000e+000 | | 0.000e+000 | |
| Diisopropyl ether | NE<br>1.90181 | 2.45961<br>2.14417 | 1.76200<br>2.27331 | 2.18177<br>2.64480 | 2.13132 | 1.97215 | AVRG | | 2.16344 | | 12.65258 | |
| n-Heptane | NE<br>NE | NE<br>NE | NE<br>NE | NE<br>NE | NE | NE | AVRG | | 0.000e+000 | | 0.000e+000 | * |
| Dichlorofluoromethane | NE<br>NE | NE<br>NE | NE<br>NE | NE<br>NE | NE | NE | AVRG | | 0.000e+000 | | 0.000e+000 | * |
| Propylene oxide | NE<br>NE | NE<br>NE | NE<br>NE | NE<br>NE | NE | NE | AVRG | | 0.000e+000 | | 0.000e+000 | |
| 2-Methylnaphthalene | NE<br>NE | NE<br>NE | NE<br>NE | NE<br>NE | NE | NE | AVRG | | 0.000e+000 | | 0.000e+000 | |
| 3-Methyl-1-butanol | NE<br>NE | NE<br>NE | NE<br>NE | NE<br>NE | NE | NE | AVRG | | 0.000e+000 | | 0.000e+000 | * |
| Butyl acrylate | NE<br>562929 | 5050<br>1404394 | 9090<br>2571857 | 17459<br>4194332 | 43284 | 183149 | QUAD | 0.03352 | 1.77384 | -0.17247 | 0.99886 | |

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# Initial Calibration Data

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**Project** GROUNDWATER TREATMENT PLANT BI-WEEKLY SAMPLES

**Workorder** HS23091194

**RunID** VOA9_446513

## Volatiles by EPA Volatiles Organics by Method 8260C

**ICAL Start Date** 24-AUG-2023 1226 **ICAL End Date** 14-SEP-2023 2035



| Compound | 50.00 Level 7 0.250 Level 1 | 100.00 Level 8 0.500 Level 2 | 150.00 Level 9 1.00 Level 3 | 200.00 Level 10 2.00 Level 4 | 5.00 Level 5 | 20.00 Level 6 | Curve | b | m1 | m2 | %RSD or R2 | Q |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Butyl methacrylate | NE<br>397835 | 3041<br>868381 | 4447<br>1540788 | 11040<br>NE | 28545 | 128376 | LINR | 0.02474 | 0.75850 | | 0.99944 | |
| Dicyclopentadiene | NE<br>1106882 | 9699<br>3293174 | 16090<br>5605401 | 38550<br>8504352 | 93143 | 439065 | QUAD | 0.03707 | 0.40356 | -0.00595 | 0.99703 | |
| 4-Vinyl-1-cyclohexene | NE<br>NE | NE<br>NE | NE<br>NE | NE<br>NE | NE | NE | AVRG | | 0.000e+000 | | 0.000e+000 | |
| 1,2,3-Trimethylbenzene | NE<br>1.76481 | 2.18615<br>2.15125 | 1.58793<br>2.06712 | 1.53675<br>2.23855 | 1.83555 | 1.93767 | AVRG | | 1.92286 | | 13.46175 | |
| Ethanol | NE<br>0.00887 | 0.01253<br>0.00934 | 0.01156<br>0.00936 | 0.01068<br>0.01039 | 0.01216 | 0.00981 | AVRG | | 0.01052 | | 12.48629 | |
| 1-Propanol | NE<br>NE | NE<br>NE | NE<br>NE | NE<br>NE | NE | NE | AVRG | | 0.000e+000 | | 0.000e+000 | |
| 1,3,5-Trichlorobenzene | NE<br>NE | NE<br>NE | NE<br>NE | NE<br>NE | NE | NE | AVRG | | 0.000e+000 | | 0.000e+000 | |
| tert-Butyl formate | NE<br>NE | NE<br>NE | NE<br>NE | NE<br>NE | NE | NE | AVRG | | 0.000e+000 | | 0.000e+000 | * |
| 3,3-Dimethyl-1-butanol | NE<br>NE | NE<br>NE | NE<br>NE | NE<br>NE | NE | NE | AVRG | | 0.000e+000 | | 0.000e+000 | * |
| tert-Amyl methyl ether | NE<br>755560 | 5959<br>1694814 | 8748<br>2759489 | 20046<br>NE | 51688 | 241640 | LINR | 0.03634 | 1.15267 | | 0.99861 | |
| tert-Butyl ethyl ether | NE<br>945112 | 9169<br>2285735 | 15060<br>3927060 | 32331<br>NE | 73009 | 318352 | LINR | 0.05551 | 1.62056 | | 0.99506 | |
| tert-Amyl alcohol | NE<br>NE | NE<br>NE | NE<br>NE | NE<br>NE | NE | NE | AVRG | | 0.000e+000 | | 0.000e+000 | * |

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# Initial Calibration Data

**Client** Bhate Environmental Associates, Inc.

**Project** GROUNDWATER TREATMENT PLANT BI-WEEKLY SAMPLES

**Workorder** HS23091194

**RunID** VOA9_446513

## Volatiles by EPA Volatiles Organics by Method 8260C

**ICAL Start Date** 24-AUG-2023 1226 **ICAL End Date** 14-SEP-2023 2035



| Compound | 50.00 Level 7 0.250 Level 1 | 100.00 Level 8 0.500 Level 2 | 150.00 Level 9 1.00 Level 3 | 200.00 Level 10 2.00 Level 4 | 5.00 Level 5 | 20.00 Level 6 | Curve | b | m1 | m2 | %RSD or R2 | Q |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Dimethyl ether | NE<br>NE | NE<br>NE | NE<br>NE | NE<br>NE | NE | NE | AVRG | | 0.000e+000 | | 0.000e+000 | * |
| Ethylene oxide | NE<br>NE | NE<br>NE | NE<br>NE | NE<br>NE | NE | NE | AVRG | | 0.000e+000 | | 0.000e+000 | |
| Hexachloroethane | NE<br>89758 | 922<br>205287 | 1951<br>332300 | 3866<br>497508 | 11282 | 42815 | LINR | -0.01440 | 0.17019 | | 0.99796 | |
| 1-Methylnaphthalene | NE<br>NE | NE<br>NE | NE<br>NE | NE<br>NE | NE | NE | AVRG | | 0.000e+000 | | 0.000e+000 | |
| 2-Furfural | NE<br>NE | NE<br>NE | NE<br>NE | NE<br>NE | NE | NE | AVRG | | 0.000e+000 | | 0.000e+000 | |
| Epichlorohydrin | NE<br>0.00375 | 0.00412<br>0.00358 | 0.00371<br>0.00365 | 0.00370<br>0.00487 | 0.00383 | 0.00404 | AVRG | | 0.00392 | | 10.15581 | |
| 2-Methylpropane(1) | NE<br>NE | NE<br>NE | NE<br>NE | NE<br>NE | NE | NE | AVRG | | 0.000e+000 | | 0.000e+000 | |
| (2) | NE<br>NE | NE<br>NE | NE<br>NE | NE<br>NE | NE | NE | AVRG | | 0.000e+000 | | 0.000e+000 | * |
| Cyclopentane | NE<br>NE | NE<br>NE | NE<br>NE | NE<br>NE | NE | NE | AVRG | | 0.000e+000 | | 0.000e+000 | |
| Isoprene | NE<br>NE | NE<br>NE | NE<br>NE | NE<br>NE | NE | NE | AVRG | | 0.000e+000 | | 0.000e+000 | * |
| Isopentane | NE<br>NE | NE<br>NE | NE<br>NE | NE<br>NE | NE | NE | AVRG | | 0.000e+000 | | 0.000e+000 | |
| n-Amyl acetate | NE<br>NE | NE<br>NE | NE<br>NE | NE<br>NE | NE | NE | AVRG | | 0.000e+000 | | 0.000e+000 | * |

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# Initial Calibration Data

**Client** Bhate Environmental Associates, Inc.

**Project** GROUNDWATER TREATMENT PLANT BI-WEEKLY SAMPLES

**Workorder** HS23091194

**RunID** VOA9_446513

## Volatiles by EPA Volatiles Organics by Method 8260C

**ICAL Start Date** 24-AUG-2023 1226 **ICAL End Date** 14-SEP-2023 2035



| Compound | 50.00 Level 7 0.250 Level 1 | 100.00 Level 8 0.500 Level 2 | 150.00 Level 9 1.00 Level 3 | 200.00 Level 10 2.00 Level 4 | 5.00 Level 5 | 20.00 Level 6 | Curve | b | m1 | m2 | %RSD or R2 | Q |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Isopropyl acetate | NE<br>0.87221 | 0.96616<br>0.98368 | 0.73129<br>0.99770 | 0.85589<br>1.09873 | 0.84865 | 0.80880 | AVRG | | 0.90701 | | 12.45603 | |
| n-Butyl acetate | NE<br>574264 | 4460<br>1317192 | 7154<br>2291727 | 16908<br>NE | 47093 | 186665 | LINR | 0.05035 | 0.63216 | | 0.99642 | |
| Propanal | NE<br>NE | NE<br>NE | NE<br>NE | NE<br>NE | NE | NE | AVRG | | 0.000e+000 | | 0.000e+000 | |
| n-Buteraldehyde | NE<br>NE | NE<br>NE | NE<br>NE | NE<br>NE | NE | NE | AVRG | | 0.000e+000 | | 0.000e+000 | |
| Isobuteraldehyde | NE<br>NE | NE<br>NE | NE<br>NE | NE<br>NE | NE | NE | AVRG | | 0.000e+000 | | 0.000e+000 | |
| 2-Ethyl-1-hexanol | NE<br>NE | NE<br>NE | NE<br>NE | NE<br>NE | NE | NE | AVRG | | 0.000e+000 | | 0.000e+000 | * |
| Acetaldehyde | NE<br>311342 | NE<br>541574 | NE<br>885769 | 9425<br>1211017 | 48054 | 122532 | LINR | -0.16114 | 0.09498 | | 0.99574 | |
| Methyl Amyl Ketone | NE<br>NE | NE<br>NE | NE<br>NE | NE<br>NE | NE | NE | AVRG | | 0.000e+000 | | 0.000e+000 | * |
| 2-Methylpentane | NE<br>NE | NE<br>NE | NE<br>NE | NE<br>NE | NE | NE | AVRG | | 0.000e+000 | | 0.000e+000 | |
| 3-Methylpentane | NE<br>NE | NE<br>NE | NE<br>NE | NE<br>NE | NE | NE | AVRG | | 0.000e+000 | | 0.000e+000 | |
| Methylcyclopentane | NE<br>NE | NE<br>NE | NE<br>NE | NE<br>NE | NE | NE | AVRG | | 0.000e+000 | | 0.000e+000 | |
| 1-Hexene | NE<br>NE | NE<br>NE | NE<br>NE | NE<br>NE | NE | NE | AVRG | | 0.000e+000 | | 0.000e+000 | |

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# Initial Calibration Data

**Client** Bhate Environmental Associates, Inc.

**Project** GROUNDWATER TREATMENT PLANT BI-WEEKLY SAMPLES

**Workorder** HS23091194

**RunID** VOA9_446513

## Volatiles by EPA Volatiles Organics by Method 8260C

**ICAL Start Date** 24-AUG-2023 1226 **ICAL End Date** 14-SEP-2023 2035



| Compound | 50.00 Level 7 0.250 Level 1 | 100.00 Level 8 0.500 Level 2 | 150.00 Level 9 1.00 Level 3 | 200.00 Level 10 2.00 Level 4 | 5.00 Level 5 | 20.00 Level 6 | Curve | b | m1 | m2 | %RSD or R2 | Q |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Dimethyl Disulfide | NE<br>337308 | NE<br>1019789 | 900<br>1911544 | 3526<br>2897727 | 12037 | 88155 | QUAD | 0.11368 | 2.29247 | -0.26107 | 0.99489 | * |
| 1-Butene(1) | NE<br>NE | NE<br>NE | NE<br>NE | NE<br>NE | NE | NE | AVRG | | 0.000e+000 | | 0.000e+000 | |
| (2) | NE<br>NE | NE<br>NE | NE<br>NE | NE<br>NE | NE | NE | AVRG | | 0.000e+000 | | 0.000e+000 | * |
| Isobutylene | NE<br>NE | NE<br>NE | NE<br>NE | NE<br>NE | NE | NE | AVRG | | 0.000e+000 | | 0.000e+000 | * |
| 2-Ethylhexyl Acrylate | NE<br>201286 | 1841<br>600525 | 3245<br>1150692 | 7443<br>2059168 | 20556 | 79669 | QUAD | 0.03210 | 2.30600 | -0.32334 | 0.99803 | |
| 94 1,2-Dichloroethylene (total) | NE<br>0.51490 | 0.57767<br>0.56474 | 0.46274<br>0.57698 | 0.55237<br>0.63651 | 0.56780 | 0.55378 | AVRG | | 0.55639 | | 8.52781 | |
| 95 Xylenes (total) | NE<br>0.48676 | 0.50065<br>0.59521 | 0.46742<br>0.62382 | 0.51887<br>0.71283 | 0.49289 | 0.52687 | AVRG | | 0.54726 | | 14.72625 | |
| 30 Dibromofluoromethane | NE<br>328369 | 3104<br>685902 | 5321<br>1058564 | 11893<br>1427589 | 30159 | 129138 | LINR | 0.00417 | 0.45811 | | 0.99875 | |
| 35 1,2-Dichloroethane-d4 | NE<br>379658 | 4043<br>775916 | 8172<br>1180336 | 13220<br>1605933 | 35545 | 147451 | LINR | -0.00299 | 0.51376 | | 0.99837 | |
| 48 Toluene-d8 | NE<br>1.12164 | 1.28011<br>1.16465 | 1.05099<br>1.07459 | 0.98642<br>1.04543 | 1.04873 | 1.14834 | AVRG | | 1.10232 | | 7.91712 | |
| 69 4-Bromofluorobenzene | NE<br>520817 | 4793<br>1113602 | 7585<br>NE | 14167<br>NE | 43329 | 208648 | QUAD | -0.00276 | 2.18031 | -0.21402 | 0.99937 | |

NE - Not Evaluated, AVRG - Averaged, LINR - Linear Regression, WLIN - Weighted Linear, QUAD - Quadratic, * - Curve Fit Outside Limits

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Form 6I

# Initial Calibration Verification (ICV)

# Volatiles by EPA Volatiles Organics by Method 8260C

Workorder

HS23091194

Client

Bhate Environmental Associates, Inc.

Project

GROUNDWATER TREATMENT PLANT
BI-WEEKLY SAMPLES

09/26/2023

ALS Environmental–Houston Laboratory
10450 Stancliff Road, Suite 210, Houston, TX 77099
Phone (281) 530-5656 Fax (281) 530-5887
www.alsglobal.com

# Initial Calibration Verification (ICV)

**Client** Bhate Environmental Associates, Inc.
**Project** GROUNDWATER TREATMENT PLANT BI-WEEKLY SAMPLES

**Workorder** HS23091194

**RunID** VOA9_446513

## Volatiles by EPA Volatiles Organics by Method 8260C

**Sample Matrix** LIQUID
**Lab Smp Id** CCV
**Data Type** MS DATA
**File ID** U091413.D

**Fraction** VOA
**Client Smp ID** CCV
**SampleType** METHSPIKE
**Inj Date** 14-SEP-2023 2013

| Compound | Conc Added | Conc Recovered | % Recovered | Limits | Q |
|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | 50.00 | 47.99 | 96.00 | 80-120 | |
| 1,1,1-Trichloroethane | 50.00 | 47.25 | 94.50 | 80-120 | |
| 1,1,2,2-Tetrachloroethane | 50.00 | 47.50 | 95.00 | 80-120 | |
| Freon TF | 50.00 | 49.35 | 98.71 | 80-120 | |
| Methyl Acetate | 50.00 | 47.59 | 95.19 | 80-120 | |
| Cyclohexane | 50.00 | 47.41 | 94.82 | 80-120 | |
| Methylcyclohexane | 50.00 | 49.99 | 99.98 | 80-120 | |
| Carbon Disulfide | 100.00 | 97.82 | 97.83 | 80-120 | |
| 2-Hexanone | 100.00 | 105.97 | 105.98 | 80-120 | |
| 1,1,2-Trichloroethane | 50.00 | 46.75 | 93.50 | 80-120 | |
| 1,1-Dichloroethane | 50.00 | 47.21 | 94.42 | 80-120 | |
| 1,1-Dichloroethene | 50.00 | 45.28 | 90.57 | 80-120 | |
| 1,1-Dichloropropene | 50.00 | 46.39 | 92.78 | 80-120 | |
| 1,2,3-Trichlorobenzene | 50.00 | 57.66 | 115.34 | 80-120 | |
| 1,2,3-Trichloropropane | 50.00 | 49.22 | 98.45 | 80-120 | |
| 1,2,4-Trichlorobenzene | 50.00 | 55.15 | 110.30 | 80-120 | |
| 1,2,4-Trimethylbenzene | 50.00 | 53.34 | 106.69 | 80-120 | |
| 1,2-Dibromo-3-Chloropropane | 50.00 | 51.66 | 103.32 | 80-120 | |
| 1,2-Dibromoethane | 50.00 | 48.44 | 96.89 | 80-120 | |
| Acrolein | 100.00 | 85.70 | 85.70 | 80-120 | |
| Acrylonitrile | 100.00 | 97.11 | 97.12 | 80-120 | |
| 1,2-Dichlorobenzene | 50.00 | 48.42 | 96.86 | 80-120 | |
| 1,2-Dichloroethane | 50.00 | 45.84 | 91.68 | 80-120 | |
| 1,2-Dichloropropane | 50.00 | 50.02 | 100.04 | 80-120 | |
| 1,3,5-Trimethylbenzene | 50.00 | 52.87 | 105.76 | 80-120 | |
| 1,3-Dichlorobenzene | 50.00 | 48.36 | 96.73 | 80-120 | |
| 1,3-Dichloropropane | 50.00 | 48.21 | 96.43 | 80-120 | |
| 1,4-Dichlorobenzene | 50.00 | 46.21 | 92.43 | 80-120 | |
| 1-Chlorohexane | 50.00 | 41.48 | 82.96 | 80-120 | |
| 2,2-Dichloropropane | 50.00 | 47.90 | 95.81 | 80-120 | |
| 2-Butanone | 100.00 | 97.60 | 97.61 | 80-120 | |
| 2-Chloroethylvinyl ether | 100.00 | 89.77 | 89.77 | 80-120 | |
| 2-Chlorotoluene | 50.00 | 51.43 | 102.88 | 80-120 | |
| 4-Chlorotoluene | 50.00 | 51.38 | 102.76 | 80-120 | |

# Initial Calibration Verification (ICV)

**Client** Bhate Environmental Associates, Inc.
**Project** GROUNDWATER TREATMENT PLANT BI-WEEKLY SAMPLES

**Workorder** HS23091194

**RunID** VOA9_446513

## Volatiles by EPA Volatiles Organics by Method 8260C

**Sample Matrix** LIQUID
**Lab Smp Id** CCV
**Data Type** MS DATA
**File ID** U091413.D

**Fraction** VOA
**Client Smp ID** CCV
**SampleType** METHSPIKE
**Inj Date** 14-SEP-2023 2013

| Compound | Conc Added | Conc Recovered | % Recovered | Limits | Q |
|---|---|---|---|---|---|
| p-Isopropyltoluene | 50.00 | 50.39 | 100.79 | 80-120 | |
| 4-Methyl-2-Pentanone | 100.00 | 97.61 | 97.62 | 80-120 | |
| Acetone | 100.00 | 96.59 | 96.60 | 80-120 | |
| Acetonitrile | 500.00 | 487.04 | 97.41 | 80-120 | |
| Allyl Chloride | 50.00 | 47.43 | 94.87 | 80-120 | |
| Benzene | 50.00 | 47.38 | 94.76 | 80-120 | |
| Bromobenzene | 50.00 | 50.39 | 100.80 | 80-120 | |
| Bromochloromethane | 50.00 | 46.77 | 93.55 | 80-120 | |
| Bromodichloromethane | 50.00 | 47.33 | 94.66 | 80-120 | |
| Bromoform | 50.00 | 42.70 | 85.40 | 80-120 | |
| Bromomethane | 50.00 | 53.93 | 107.87 | 80-120 | |
| Carbon Tetrachloride | 50.00 | 45.49 | 90.99 | 80-120 | |
| Chlorobenzene | 50.00 | 46.03 | 92.07 | 80-120 | |
| Chloroethane | 50.00 | 45.82 | 91.65 | 80-120 | |
| Chloroform | 50.00 | 47.38 | 94.77 | 80-120 | |
| Chloromethane | 50.00 | 43.46 | 86.93 | 80-120 | |
| Chloroprene | 50.00 | 50.87 | 101.75 | 80-120 | |
| cis-1,2-Dichloroethene | 50.00 | 49.09 | 98.19 | 80-120 | |
| cis-1,3-Dichloropropene | 50.00 | 44.97 | 89.95 | 80-120 | |
| Dibromochloromethane | 50.00 | 50.42 | 100.85 | 80-120 | |
| Dibromomethane | 50.00 | 45.82 | 91.65 | 80-120 | |
| Dichlorodifluoromethane | 50.00 | 44.80 | 89.61 | 80-120 | |
| Ethylbenzene | 50.00 | 50.54 | 101.08 | 80-120 | |
| Ethyl Methacrylate | 50.00 | 50.05 | 100.11 | 80-120 | |
| Iodomethane | 100.00 | 107.26 | 107.27 | 80-120 | |
| Isobutyl Alcohol | 1000.00 | 972.55 | 97.26 | 70-130 | |
| Propionitrile | 500.00 | 486.02 | 97.20 | 70-130 | |
| Hexachlorobutadiene | 50.00 | 48.09 | 96.18 | 80-120 | |
| Isopropylbenzene | 50.00 | 47.73 | 95.48 | 80-120 | |
| m,p-Xylenes | 100.00 | 100.08 | 100.08 | 80-120 | |
| Methyl tert-butyl ether | 50.00 | 53.06 | 106.13 | 80-120 | |
| Methylene Chloride | 50.00 | 46.45 | 92.91 | 80-120 | |
| Methacrylonitrile | 50.00 | 53.89 | 107.80 | 80-120 | |
| Methyl Methacrylate | 50.00 | 53.99 | 107.99 | 80-120 | |

# Initial Calibration Verification (ICV)

**Client** Bhate Environmental Associates, Inc.
**Project** GROUNDWATER TREATMENT PLANT BI-WEEKLY SAMPLES

**Workorder** HS23091194

**RunID** VOA9_446513

## Volatiles by EPA Volatiles Organics by Method 8260C

**Sample Matrix** LIQUID
**Lab Smp Id** CCV
**Data Type** MS DATA
**File ID** U091413.D

**Fraction** VOA
**Client Smp ID** CCV
**SampleType** METHSPIKE
**Inj Date** 14-SEP-2023 2013

| Compound | Conc Added | Conc Recovered | % Recovered | Limits | Q |
|---|---|---|---|---|---|
| n-Butylbenzene | 50.00 | 48.76 | 97.53 | 80-120 | |
| n-Propylbenzene | 50.00 | 47.24 | 94.49 | 80-120 | |
| Naphthalene | 50.00 | 51.24 | 102.49 | 80-120 | |
| o-Xylene | 50.00 | 47.71 | 95.42 | 80-120 | |
| sec-Butylbenzene | 50.00 | 48.74 | 97.50 | 80-120 | |
| Styrene | 50.00 | 49.97 | 99.95 | 80-120 | |
| tert-Butylbenzene | 50.00 | 50.96 | 101.93 | 80-120 | |
| Tetrachloroethene | 50.00 | 48.62 | 97.25 | 80-120 | |
| Toluene | 50.00 | 50.12 | 100.24 | 80-120 | |
| trans-1,2-Dichloroethene | 50.00 | 48.37 | 96.76 | 80-120 | |
| trans-1,3-Dichloropropene | 50.00 | 45.35 | 90.70 | 80-120 | |
| trans-1,4-Dichloro-2-butene | 50.00 | 43.65 | 87.30 | 80-120 | |
| Trichloroethene | 50.00 | 44.64 | 89.29 | 80-120 | |
| Trichlorofluoromethane | 50.00 | 46.40 | 92.81 | 80-120 | |
| Vinyl Acetate | 100.00 | 101.26 | 101.27 | 80-120 | |
| Vinyl Chloride | 50.00 | 47.16 | 94.34 | 80-120 | |
| Ethyl Acrylate | 50.00 | 49.92 | 99.86 | 80-120 | |
| Butyl acrylate | 50.00 | 51.85 | 103.72 | 80-120 | |
| 2-Ethylhexyl Acrylate | 50.00 | 53.04 | 106.08 | 80-120 | |
| 1,2-Dichloroethylene (total) | 100.00 | 97.52 | 97.52 | 80-120 | |
| Xylenes (total) | 150.00 | 142.61 | 95.08 | 80-120 | |
| 1,4-Dioxane | 1000.00 | 914.45 | 91.45 | 80-120 | |
| Dibromofluoromethane | 50.00 | 52.67 | 105.35 | 71-125 | |
| 1,2-Dichloroethane-d4 | 50.00 | 52.52 | 105.04 | 70-125 | |
| Toluene-d8 | 50.00 | 54.23 | 108.48 | 75-125 | |
| 4-Bromofluorobenzene | 50.00 | 52.95 | 105.92 | 72-125 | |

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Form 7

# Continuing Calibration Verification (CCV)

# Volatiles by EPA Volatiles Organics by Method 8260C

Workorder

HS23091194

Client

Bhate Environmental Associates, Inc.

Project

GROUNDWATER TREATMENT PLANT
BI-WEEKLY SAMPLES

09/26/2023

ALS Environmental–Houston Laboratory
10450 Stancliff Road, Suite 210, Houston, TX 77099
Phone (281) 530-5656 Fax (281) 530-5887
www.alsglobal.com

# Continuing Calibration Verification (CCV)

**Client** Bhate Environmental Associates, Inc. **Workorder**

**Project** GROUNDWATER TREATMENT PLANT BI-WEEKLY SAMPLES **HS23091194**

RunID

## Volatiles by EPA Volatiles Organics by Method 8260C VOA9_447039

**Instrument ID** VOA9.i
**Lab File ID** U092103.D
**Analysis Type** WATER
**Lab Sample ID** CCV

**Injection Date** 21-SEP-2023 1128
**ICAL Date(s)** 24-AUG-2023, 14-SEP-2023
**ICAL Times** 12:26, 20:35
**Quant Type** ISTD

| Compound | $\overline{RRF}$ / Conc | RF50 / Conc | CCV RRF50 | Min RRF | %D / %Drift | Max %D / %Drift | Curve Type | Q |
|---|---|---|---|---|---|---|---|---|
| Dichlorodifluoromethane | 50.0 | 43.93199 | 0.47994 | 0.100 | 12.13602 | 20.0 | Linear | |
| Chloromethane | 50.0 | 51.42515 | 0.94882 | 0.100 | -2.85029 | 20.0 | Linear | |
| Vinyl Chloride | 0.63471 | 0.69622 | 0.69622 | 0.100 | -9.69178 | 20.0 | Averaged | |
| Bromomethane | 50.0 | 57.66357 | 0.35750 | 0.100 | -15.32713 | 20.0 | Linear | |
| Chloroethane | 0.46679 | 0.49714 | 0.49714 | 0.100 | -6.50067 | 20.0 | Averaged | |
| Trichlorofluoromethane | 0.81432 | 0.87547 | 0.87547 | 0.100 | -7.50909 | 20.0 | Averaged | |
| Acrolein | 0.04290 | 0.04081 | 0.04081 | 0.010 | 4.87143 | 20.0 | Averaged | |
| Acetone | 100 | 120 | 0.30300 | 0.100 | -19.89446 | 20.0 | Linear | |
| 1,1-Dichloroethene | 0.49490 | 0.50368 | 0.50368 | 0.100 | -1.77328 | 20.0 | Averaged | |
| Iodomethane | 100 | 106 | 0.30876 | 0.100 | -6.04222 | 20.0 | Quadratic | |
| Acrylonitrile | 0.29166 | 0.31731 | 0.31731 | 0.050 | -8.79320 | 20.0 | Averaged | |
| Methylene Chloride | 50.0 | 51.62514 | 0.64907 | 0.100 | -3.25028 | 20.0 | Linear | |
| Methyl tert-butyl ether | 1.40514 | 1.57260 | 1.57260 | 0.100 | -11.91788 | 20.0 | Averaged | |
| Carbon Disulfide | 1.33684 | 1.46818 | 1.46818 | 0.100 | -9.82432 | 20.0 | Averaged | |
| trans-1,2-Dichloroethene | 0.51917 | 0.55545 | 0.55545 | 0.100 | -6.98840 | 20.0 | Averaged | |
| Vinyl Acetate | 1.83679 | 2.09967 | 2.09967 | 0.010 | -14.31226 | 20.0 | Averaged | |
| 1,1-Dichloroethane | 1.04121 | 1.10429 | 1.10429 | 0.200 | -6.05847 | 20.0 | Averaged | |
| 2-Butanone | 0.30306 | 0.33881 | 0.33881 | 0.100 | -11.79576 | 20.0 | Averaged | |
| 2,2-Dichloropropane | 0.63046 | 0.70252 | 0.70252 | 0.100 | -11.42905 | 20.0 | Averaged | |
| cis-1,2-Dichloroethene | 0.59360 | 0.62766 | 0.62766 | 0.100 | -5.73787 | 20.0 | Averaged | |
| Chloroform | 1.01100 | 1.07002 | 1.07002 | 0.200 | -5.83834 | 20.0 | Averaged | |
| Bromochloromethane | 0.31108 | 0.31718 | 0.31718 | 0.100 | -1.96192 | 20.0 | Averaged | |
| 30 Dibromofluoromethane | 50.0 | 51.15790 | 0.46681 | 0.100 | -2.31581 | 20.0 | Linear | |
| 1,1,1-Trichloroethane | 0.68656 | 0.70402 | 0.70402 | 0.100 | -2.54280 | 20.0 | Averaged | |
| 1,1-Dichloropropene | 0.39692 | 0.39054 | 0.39054 | 0.100 | 1.60872 | 20.0 | Averaged | |
| 1,2-Dichloroethane | 0.48331 | 0.47103 | 0.47103 | 0.100 | 2.54127 | 20.0 | Averaged | |
| Carbon Tetrachloride | 0.35511 | 0.34870 | 0.34870 | 0.100 | 1.80299 | 20.0 | Averaged | |
| 35 1,2-Dichloroethane-d4 | 50.0 | 51.13114 | 0.52692 | 0.100 | -2.26229 | 20.0 | Linear | |
| Benzene | 1.25585 | 1.25256 | 1.25256 | 0.500 | 0.26166 | 20.0 | Averaged | |
| Trichloroethene | 0.36527 | 0.32198 | 0.32198 | 0.200 | 11.85172 | 20.0 | Averaged | |
| Bromodichloromethane | 0.40732 | 0.40442 | 0.40442 | 0.200 | 0.71104 | 20.0 | Averaged | |
| 2-Chloroethylvinyl ether | 100 | 83.53805 | 0.00151 | 0.001 | 16.46195 | 20.0 | Linear | |
| 1,2-Dichloropropane | 0.33163 | 0.35494 | 0.35494 | 0.100 | -7.02733 | 20.0 | Averaged | |
| Dibromomethane | 0.22834 | 0.21214 | 0.21214 | 0.100 | 7.09425 | 20.0 | Averaged | |

# Continuing Calibration Verification (CCV)

**Client** Bhate Environmental Associates, Inc.
**Project** GROUNDWATER TREATMENT PLANT BI-WEEKLY SAMPLES

**Workorder** HS23091194

**RunID** VOA9_447039

## Volatiles by EPA Volatiles Organics by Method 8260C

**Instrument ID** VOA9.i
**Lab File ID** U092103.D
**Analysis Type** WATER
**Lab Sample ID** CCV

**Injection Date** 21-SEP-2023 1128
**ICAL Date(s)** 24-AUG-2023, 14-SEP-2023
**ICAL Times** 12:26, 20:35
**Quant Type** ISTD

| Compound | $\overline{RRF}$ / Conc | RF50 / Conc | CCV RRF50 | Min RRF | %D / %Drift | Max %D / %Drift | Curve Type | Q |
|---|---|---|---|---|---|---|---|---|
| 4-Methyl-2-Pentanone | 100 | 106 | 0.39224 | 0.100 | -5.59285 | 20.0 | Linear | |
| cis-1,3-Dichloropropene | 50.0 | 46.88380 | 0.47159 | 0.200 | 6.23241 | 20.0 | Linear | |
| 48 Toluene-d8 | 1.10232 | 1.12299 | 1.12299 | 0.100 | -1.87473 | 20.0 | Averaged | |
| Toluene | 1.34259 | 1.40514 | 1.40514 | 0.400 | -4.65925 | 20.0 | Averaged | |
| trans-1,3-Dichloropropene | 50.0 | 47.37229 | 0.38988 | 0.100 | 5.25542 | 20.0 | Linear | |
| 2-Hexanone | 0.22667 | 0.26618 | 0.26618 | 0.100 | -17.42817 | 20.0 | Averaged | |
| 1,1,2-Trichloroethane | 0.29276 | 0.28129 | 0.28129 | 0.100 | 3.91716 | 20.0 | Averaged | |
| 1,3-Dichloropropane | 0.58886 | 0.59502 | 0.59502 | 0.100 | -1.04516 | 20.0 | Averaged | |
| Dibromochloromethane | 0.34847 | 0.35236 | 0.35236 | 0.100 | -1.11737 | 20.0 | Averaged | |
| Tetrachloroethene | 0.31283 | 0.28950 | 0.28950 | 0.200 | 7.45662 | 20.0 | Averaged | |
| 1,2-Dibromoethane | 0.35185 | 0.34262 | 0.34262 | 0.100 | 2.62338 | 20.0 | Averaged | |
| 1-Chlorohexane | 0.30207 | 0.29254 | 0.29254 | 0.100 | 3.15499 | 20.0 | Averaged | |
| Chlorobenzene | 0.99302 | 0.94654 | 0.94654 | 0.500 | 4.68039 | 20.0 | Averaged | |
| 1,1,1,2-Tetrachloroethane | 0.33374 | 0.32580 | 0.32580 | 0.100 | 2.37860 | 20.0 | Averaged | |
| Ethylbenzene | 0.44464 | 0.44714 | 0.44714 | 0.100 | -0.56350 | 20.0 | Averaged | |
| m,p-Xylenes | 0.55914 | 0.56487 | 0.56487 | 0.100 | -1.02478 | 20.0 | Averaged | |
| o-Xylene | 0.58109 | 0.56120 | 0.56120 | 0.300 | 3.42450 | 20.0 | Averaged | |
| Styrene | 0.89225 | 0.90516 | 0.90516 | 0.300 | -1.44624 | 20.0 | Averaged | |
| Bromoform | 50.0 | 42.52848 | 0.22074 | 0.100 | 14.94304 | 20.0 | Linear | |
| Isopropylbenzene | 50.0 | 46.63661 | 1.29391 | 0.100 | 6.72679 | 20.0 | Quadratic | |
| 1,1,2,2-Tetrachloroethane | 0.97136 | 0.95918 | 0.95918 | 0.300 | 1.25365 | 20.0 | Averaged | |
| 69 4-Bromofluorobenzene | 50.0 | 50.17139 | 0.48454 | 0.100 | -0.34279 | 20.0 | Quadratic | |
| 1,2,3-Trichloropropane | 0.82780 | 0.85223 | 0.85223 | 0.100 | -2.95146 | 20.0 | Averaged | |
| n-Propylbenzene | 50.0 | 44.63058 | 2.74123 | 0.100 | 10.73885 | 20.0 | Linear | |
| Bromobenzene | 0.79466 | 0.76827 | 0.76827 | 0.100 | 3.32010 | 20.0 | Averaged | |
| 1,3,5-Trimethylbenzene | 1.88069 | 1.88170 | 1.88170 | 0.100 | -0.05399 | 20.0 | Averaged | |
| 2-Chlorotoluene | 1.85652 | 1.82021 | 1.82021 | 0.100 | 1.95564 | 20.0 | Averaged | |
| 4-Chlorotoluene | 2.17850 | 2.16754 | 2.16754 | 0.100 | 0.50297 | 20.0 | Averaged | |
| tert-Butylbenzene | 1.80981 | 1.69744 | 1.69744 | 0.100 | 6.20875 | 20.0 | Averaged | |
| 1,2,4-Trimethylbenzene | 1.93318 | 1.96317 | 1.96317 | 0.100 | -1.55168 | 20.0 | Averaged | |
| sec-Butylbenzene | 50.0 | 45.38097 | 2.24708 | 0.100 | 9.23805 | 20.0 | Quadratic | |
| p-Isopropyltoluene | 50.0 | 44.65599 | 1.76308 | 0.100 | 10.68801 | 20.0 | Quadratic | |
| 1,3-Dichlorobenzene | 1.40157 | 1.30790 | 1.30790 | 0.600 | 6.68351 | 20.0 | Averaged | |
| 1,4-Dichlorobenzene | 1.57472 | 1.45751 | 1.45751 | 0.400 | 7.44289 | 20.0 | Averaged | |

# Continuing Calibration Verification (CCV)

**Client** Bhate Environmental Associates, Inc.
**Project** GROUNDWATER TREATMENT PLANT BI-WEEKLY SAMPLES

**Workorder** HS23091194

**RunID** VOA9_447039

## Volatiles by EPA Volatiles Organics by Method 8260C

**Instrument ID** VOA9.i
**Lab File ID** U092103.D
**Analysis Type** WATER
**Lab Sample ID** CCV

**Injection Date** 21-SEP-2023 1128
**ICAL Date(s)** 24-AUG-2023, 14-SEP-2023
**ICAL Times** 12:26, 20:35
**Quant Type** ISTD

| Compound | $\overline{RRF}$ / Conc | RF50 / Conc | CCV RRF50 | Min RRF | %D / %Drift | Max %D / %Drift | Curve Type | Q |
|---|---|---|---|---|---|---|---|---|
| n-Butylbenzene | 50.0 | 47.07808 | 1.71075 | 0.500 | 5.84384 | 20.0 | Quadratic | |
| 1,2-Dichlorobenzene | 1.43347 | 1.35961 | 1.35961 | 0.400 | 5.15249 | 20.0 | Averaged | |
| 1,2-Dibromo-3-Chloropropane | 0.12086 | 0.11663 | 0.11663 | 0.050 | 3.49525 | 20.0 | Averaged | |
| 1,2,4-Trichlorobenzene | 0.81606 | 0.77789 | 0.77789 | 0.200 | 4.67770 | 20.0 | Averaged | |
| Hexachlorobutadiene | 0.36615 | 0.32204 | 0.32204 | 0.100 | 12.04764 | 20.0 | Averaged | |
| Naphthalene | 50.0 | 47.03918 | 2.09402 | 0.200 | 5.92164 | 20.0 | Linear | |
| 1,2,3-Trichlorobenzene | 0.77477 | 0.78761 | 0.78761 | 0.100 | -1.65696 | 20.0 | Averaged | |
| 94 1,2-Dichloroethylene (total | 0.55639 | 0.59156 | 0.59156 | 0.200 | -6.32131 | 20.0 | Averaged | |
| 95 Xylenes (total) | 0.54726 | 0.54851 | 0.54851 | 0.100 | -0.22865 | 20.0 | Averaged | |
| 1,4-Dioxane | 0.00727 | 0.00646 | 0.00646 | 0.001 | 11.18206 | 20.0 | Averaged | |
| Cyclohexane | 50.0 | 52.91969 | 0.72175 | 0.100 | -5.83939 | 20.0 | Quadratic | |
| Freon TF | 50.0 | 57.13633 | 0.47437 | 0.100 | -14.27266 | 20.0 | Quadratic | |
| 1,3-Butadiene | 0.59070 | 0.64268 | 0.64268 | 0.100 | -8.80013 | 20.0 | Averaged | |
| Methylcyclohexane | 0.73295 | 0.81923 | 0.81923 | 0.100 | -11.77173 | 20.0 | Averaged | |
| Methyl Acetate | 0.60624 | 0.62333 | 0.62333 | 0.100 | -2.81834 | 20.0 | Averaged | |
| Tert-butyl alcohol | 0.06126 | 0.06575 | 0.06575 | 0.005 | -7.31707 | 20.0 | Averaged | |
| Isopropyl alcohol | 0.04395 | 0.04862 | 0.04862 | 0.005 | -10.62154 | 20.0 | Averaged | |
| trans-1,4-Dichloro-2-butene | 50.0 | 52.47714 | 0.08046 | 0.050 | -4.95427 | 20.0 | Quadratic | |
| Isobutyl Alcohol | 1000 | 1044 | 0.07826 | 0.005 | -4.41270 | 20.0 | Linear | |
| Acetonitrile | 0.07629 | 0.08961 | 0.08961 | 0.005 | -17.46131 | 20.0 | Averaged | |
| Allyl Chloride | 1.77284 | 2.01611 | 2.01611 | 0.100 | -13.72205 | 20.0 | Averaged | |
| Methacrylonitrile | 0.39305 | 0.44752 | 0.44752 | 0.100 | -13.85736 | 20.0 | Averaged | |
| Methyl Methacrylate | 0.40944 | 0.47238 | 0.47238 | 0.100 | -15.37243 | 20.0 | Averaged | |
| Propionitrile | 0.10832 | 0.11737 | 0.11737 | 0.010 | -8.35698 | 20.0 | Averaged | |
| n-Hexane | 50.0 | 57.67742 | 0.67148 | 0.100 | -15.35483 | 20.0 | Quadratic | |
| Acetaldehyde | 200 | 205 | 0.10138 | 0.001 | -2.71346 | 20.0 | Linear | |
| Methyl Acrylate | 0.77827 | 0.87826 | 0.87826 | 0.100 | -12.84898 | 20.0 | Averaged | |
| Dimethyl Disulfide | 50.0 | 43.60983 | 0.34438 | 0.020 | 12.78034 | 20.0 | Quadratic | |
| Chloroprene | 0.20007 | 0.24927 | 0.24927 | 0.100 | -24.59157 | 20.0 | Averaged | * |
| Ethyl Methacrylate | 0.43606 | 0.46185 | 0.46185 | 0.100 | -5.91563 | 20.0 | Averaged | |
| 1,2,3-Trimethylbenzene | 1.92286 | 2.07509 | 2.07509 | 0.100 | -7.91650 | 20.0 | Averaged | |
| Ethanol | 0.01052 | 0.01072 | 0.01072 | 0.001 | -1.92087 | 20.0 | Averaged | |
| Dicyclopentadiene | 50.0 | 50.76534 | 2.51744 | 0.100 | -1.53067 | 20.0 | Quadratic | |
| alpha-Methylstyrene | 50.0 | 49.53899 | 0.74385 | 0.100 | 0.92202 | 20.0 | Quadratic | |

# Continuing Calibration Verification (CCV)

**Client** Bhate Environmental Associates, Inc. **Workorder**

**Project** GROUNDWATER TREATMENT PLANT BI-WEEKLY SAMPLES **HS23091194**

RunID

## Volatiles by EPA Volatiles Organics by Method 8260C VOA9_447039

**Instrument ID** VOA9.i
**Lab File ID** U092103.D
**Analysis Type** WATER
**Lab Sample ID** CCV

**Injection Date** 21-SEP-2023 1128
**ICAL Date(s)** 24-AUG-2023, 14-SEP-2023
**ICAL Times** 12:26, 20:35
**Quant Type** ISTD

| Compound | $\overline{RRF}$ / Conc | RF50 / Conc | CCV RRF50 | Min RRF | %D / %Drift | Max %D / %Drift | Curve Type | Q |
|---|---|---|---|---|---|---|---|---|
| Tetrahydrofuran | 0.12546 | 0.14547 | 0.14547 | 0.001 | -15.94256 | 20.0 | Averaged | |
| Diisopropyl ether | 2.16344 | 2.45062 | 2.45062 | 0.100 | -13.27443 | 20.0 | Averaged | |
| 4-Methyl-2-pentanol | 1000 | 1103 | 0.07020 | 0.005 | -10.25273 | 20.0 | Quadratic | |
| Allyl alcohol | 1000 | 1144 | 0.03357 | 0.004 | -14.44035 | 20.0 | Quadratic | |
| Benzyl Chloride | 50.0 | 55.93298 | 0.28834 | 0.010 | -11.86597 | 20.0 | Quadratic | |
| Butyl acrylate | 50.0 | 52.77683 | 0.61265 | 0.100 | -5.55366 | 20.0 | Quadratic | |
| Diethyl ether | 0.49552 | 0.55015 | 0.55015 | 0.100 | -11.02367 | 20.0 | Averaged | |
| 2-Ethylhexyl Acrylate | 50.0 | 52.81597 | 0.47591 | 0.100 | -5.63193 | 20.0 | Quadratic | |
| Cyclohexanone | 1000 | 1283 | 0.04069 | 0.005 | -28.25662 | 20.0 | Quadratic | * |
| Ethyl Acetate | 0.74374 | 0.83054 | 0.83054 | 0.100 | -11.67146 | 20.0 | Averaged | |
| n-Butyl acetate | 50.0 | 50.15124 | 0.60224 | 0.100 | -0.30249 | 20.0 | Linear | |
| Epichlorohydrin | 0.00392 | 0.00325 | 0.00325 | 0.001 | 16.93753 | 20.0 | Averaged | |
| n-Butanol | 1000 | 982 | 0.01514 | 0.005 | 1.79090 | 20.0 | Linear | |
| Ethyl Acrylate | 1.16277 | 1.26632 | 1.26632 | 0.100 | -8.90572 | 20.0 | Averaged | |
| Butyl methacrylate | 50.0 | 58.75796 | 0.87260 | 0.100 | -17.51593 | 20.0 | Linear | |
| tert-Amyl methyl ether | 50.0 | 53.62702 | 1.19440 | 0.005 | -7.25404 | 20.0 | Linear | |
| tert-Butyl ethyl ether | 50.0 | 55.03301 | 1.69372 | 0.100 | -10.06603 | 20.0 | Linear | |
| Isopropyl acetate | 0.90701 | 1.01439 | 1.01439 | 0.100 | -11.83839 | 20.0 | Averaged | |
| Hexachloroethane | 50.0 | 50.38771 | 0.17396 | 0.001 | -0.77542 | 20.0 | Linear | |

# Continuing Calibration Verification (CCV)

**Client** Bhate Environmental Associates, Inc. **Workorder**

**Project** GROUNDWATER TREATMENT PLANT BI-WEEKLY SAMPLES **HS23091194**

RunID

## Volatiles by EPA Volatiles Organics by Method 8260C VOA9_447039

**Instrument ID** VOA9.i
**Lab File ID** U092115.D
**Analysis Type** WATER
**Lab Sample ID** CCV-END

**Injection Date** 21-SEP-2023 1556
**ICAL Date(s)** 24-AUG-2023, 14-SEP-2023
**ICAL Times** 12:26, 20:35
**Quant Type** ISTD

| Compound | $\overline{RRF}$ / Conc | RF50 / Conc | CCV RRF50 | Min RRF | %D / %Drift | Max %D / %Drift | Curve Type | Q |
|---|---|---|---|---|---|---|---|---|
| Dichlorodifluoromethane | 50.0 | 40.64640 | 0.44291 | 0.100 | 18.70719 | 50.0 | Linear | |
| Chloromethane | 50.0 | 52.51915 | 0.96862 | 0.100 | -5.03831 | 50.0 | Linear | |
| Vinyl Chloride | 0.63471 | 0.72165 | 0.72165 | 0.100 | -13.69750 | 50.0 | Averaged | |
| Bromomethane | 50.0 | 58.66683 | 0.36376 | 0.100 | -17.33365 | 50.0 | Linear | |
| Chloroethane | 0.46679 | 0.59264 | 0.59264 | 0.100 | -26.95942 | 50.0 | Averaged | |
| Trichlorofluoromethane | 0.81432 | 0.94421 | 0.94421 | 0.100 | -15.95102 | 50.0 | Averaged | |
| Acrolein | 0.04290 | 0.04062 | 0.04062 | 0.010 | 5.32047 | 50.0 | Averaged | |
| Acetone | 100 | 111 | 0.28153 | 0.100 | -11.24364 | 50.0 | Linear | |
| 1,1-Dichloroethene | 0.49490 | 0.54856 | 0.54856 | 0.100 | -10.84252 | 50.0 | Averaged | |
| Iodomethane | 100 | 121 | 0.35671 | 0.100 | -20.71856 | 50.0 | Quadratic | |
| Acrylonitrile | 0.29166 | 0.33799 | 0.33799 | 0.050 | -15.88424 | 50.0 | Averaged | |
| Methylene Chloride | 50.0 | 55.77243 | 0.70298 | 0.100 | -11.54486 | 50.0 | Linear | |
| Methyl tert-butyl ether | 1.40514 | 1.66194 | 1.66194 | 0.100 | -18.27639 | 50.0 | Averaged | |
| Carbon Disulfide | 1.33684 | 1.56264 | 1.56264 | 0.100 | -16.89065 | 50.0 | Averaged | |
| trans-1,2-Dichloroethene | 0.51917 | 0.59887 | 0.59887 | 0.100 | -15.35168 | 50.0 | Averaged | |
| Vinyl Acetate | 1.83679 | 2.21939 | 2.21939 | 0.010 | -20.83024 | 50.0 | Averaged | |
| 1,1-Dichloroethane | 1.04121 | 1.21810 | 1.21810 | 0.200 | -16.98877 | 50.0 | Averaged | |
| 2-Butanone | 0.30306 | 0.34376 | 0.34376 | 0.100 | -13.43004 | 50.0 | Averaged | |
| 2,2-Dichloropropane | 0.63046 | 0.75120 | 0.75120 | 0.100 | -19.15049 | 50.0 | Averaged | |
| cis-1,2-Dichloroethene | 0.59360 | 0.68921 | 0.68921 | 0.100 | -16.10553 | 50.0 | Averaged | |
| Chloroform | 1.01100 | 1.15970 | 1.15970 | 0.200 | -14.70912 | 50.0 | Averaged | |
| Bromochloromethane | 0.31108 | 0.33915 | 0.33915 | 0.100 | -9.02406 | 50.0 | Averaged | |
| 30 Dibromofluoromethane | 50.0 | 56.07663 | 0.51187 | 0.100 | -12.15327 | 50.0 | Linear | |
| 1,1,1-Trichloroethane | 0.68656 | 0.79197 | 0.79197 | 0.100 | -15.35340 | 50.0 | Averaged | |
| 1,1-Dichloropropene | 0.39692 | 0.41520 | 0.41520 | 0.100 | -4.60440 | 50.0 | Averaged | |
| 1,2-Dichloroethane | 0.48331 | 0.49623 | 0.49623 | 0.100 | -2.67279 | 50.0 | Averaged | |
| Carbon Tetrachloride | 0.35511 | 0.26425 | 0.26425 | 0.100 | 25.58481 | 50.0 | Averaged | |
| 35 1,2-Dichloroethane-d4 | 50.0 | 53.71646 | 0.55349 | 0.100 | -7.43292 | 50.0 | Linear | |
| Benzene | 1.25585 | 1.31503 | 1.31503 | 0.500 | -4.71285 | 50.0 | Averaged | |
| Trichloroethene | 0.36527 | 0.34605 | 0.34605 | 0.200 | 5.26371 | 50.0 | Averaged | |
| Bromodichloromethane | 0.40732 | 0.41160 | 0.41160 | 0.200 | -1.05242 | 50.0 | Averaged | |
| 2-Chloroethylvinyl ether | 100 | 38.51060 | 0.00069 | 0.001 | 61.48940 | 50.0 | Linear | * |
| 1,2-Dichloropropane | 0.33163 | 0.36467 | 0.36467 | 0.100 | -9.96143 | 50.0 | Averaged | |
| Dibromomethane | 0.22834 | 0.22140 | 0.22140 | 0.100 | 3.04050 | 50.0 | Averaged | |

# Continuing Calibration Verification (CCV)

**Client** Bhate Environmental Associates, Inc. **Workorder**

**Project** GROUNDWATER TREATMENT PLANT BI-WEEKLY SAMPLES **HS23091194**

RunID

## Volatiles by EPA Volatiles Organics by Method 8260C VOA9_447039

**Instrument ID** VOA9.i
**Lab File ID** U092115.D
**Analysis Type** WATER
**Lab Sample ID** CCV-END

**Injection Date** 21-SEP-2023 1556
**ICAL Date(s)** 24-AUG-2023, 14-SEP-2023
**ICAL Times** 12:26, 20:35
**Quant Type** ISTD

| Compound | $\overline{RRF}$ / Conc | RF50 / Conc | CCV RRF50 | Min RRF | %D / %Drift | Max %D / %Drift | Curve Type | Q |
|---|---|---|---|---|---|---|---|---|
| 4-Methyl-2-Pentanone | 100 | 104 | 0.38590 | 0.100 | -3.92729 | 50.0 | Linear | |
| cis-1,3-Dichloropropene | 50.0 | 47.25931 | 0.47564 | 0.200 | 5.48139 | 50.0 | Linear | |
| 48 Toluene-d8 | 1.10232 | 1.16853 | 1.16853 | 0.100 | -6.00601 | 50.0 | Averaged | |
| Toluene | 1.34259 | 1.46043 | 1.46043 | 0.400 | -8.77760 | 50.0 | Averaged | |
| trans-1,3-Dichloropropene | 50.0 | 47.50477 | 0.39103 | 0.100 | 4.99046 | 50.0 | Linear | |
| 2-Hexanone | 0.22667 | 0.25629 | 0.25629 | 0.100 | -13.06707 | 50.0 | Averaged | |
| 1,1,2-Trichloroethane | 0.29276 | 0.27737 | 0.27737 | 0.100 | 5.25842 | 50.0 | Averaged | |
| 1,3-Dichloropropane | 0.58886 | 0.59395 | 0.59395 | 0.100 | -0.86292 | 50.0 | Averaged | |
| Dibromochloromethane | 0.34847 | 0.34053 | 0.34053 | 0.100 | 2.27784 | 50.0 | Averaged | |
| Tetrachloroethene | 0.31283 | 0.29778 | 0.29778 | 0.200 | 4.80801 | 50.0 | Averaged | |
| 1,2-Dibromoethane | 0.35185 | 0.34874 | 0.34874 | 0.100 | 0.88398 | 50.0 | Averaged | |
| 1-Chlorohexane | 0.30207 | 0.33309 | 0.33309 | 0.100 | -10.26925 | 50.0 | Averaged | |
| Chlorobenzene | 0.99302 | 0.98584 | 0.98584 | 0.500 | 0.72343 | 50.0 | Averaged | |
| 1,1,1,2-Tetrachloroethane | 0.33374 | 0.32519 | 0.32519 | 0.100 | 2.56165 | 50.0 | Averaged | |
| Ethylbenzene | 0.44464 | 0.48238 | 0.48238 | 0.100 | -8.48877 | 50.0 | Averaged | |
| m,p-Xylenes | 0.55914 | 0.62735 | 0.62735 | 0.100 | -12.20048 | 50.0 | Averaged | |
| o-Xylene | 0.58109 | 0.60985 | 0.60985 | 0.300 | -4.94771 | 50.0 | Averaged | |
| Styrene | 0.89225 | 0.97648 | 0.97648 | 0.300 | -9.44043 | 50.0 | Averaged | |
| Bromoform | 50.0 | 41.83786 | 0.21683 | 0.100 | 16.32428 | 50.0 | Linear | |
| Isopropylbenzene | 50.0 | 52.34321 | 1.46470 | 0.100 | -4.68643 | 50.0 | Quadratic | |
| 1,1,2,2-Tetrachloroethane | 0.97136 | 0.92034 | 0.92034 | 0.300 | 5.25245 | 50.0 | Averaged | |
| 69 4-Bromofluorobenzene | 50.0 | 52.71731 | 0.51042 | 0.100 | -5.43462 | 50.0 | Quadratic | |
| 1,2,3-Trichloropropane | 0.82780 | 0.82130 | 0.82130 | 0.100 | 0.78528 | 50.0 | Averaged | |
| n-Propylbenzene | 50.0 | 48.97430 | 3.02738 | 0.100 | 2.05140 | 50.0 | Linear | |
| Bromobenzene | 0.79466 | 0.76157 | 0.76157 | 0.100 | 4.16341 | 50.0 | Averaged | |
| 1,3,5-Trimethylbenzene | 1.88069 | 2.09115 | 2.09115 | 0.100 | -11.19073 | 50.0 | Averaged | |
| 2-Chlorotoluene | 1.85652 | 1.91508 | 1.91508 | 0.100 | -3.15399 | 50.0 | Averaged | |
| 4-Chlorotoluene | 2.17850 | 2.30854 | 2.30854 | 0.100 | -5.96927 | 50.0 | Averaged | |
| tert-Butylbenzene | 1.80981 | 1.94343 | 1.94343 | 0.100 | -7.38299 | 50.0 | Averaged | |
| 1,2,4-Trimethylbenzene | 1.93318 | 2.22219 | 2.22219 | 0.100 | -14.94997 | 50.0 | Averaged | |
| sec-Butylbenzene | 50.0 | 51.82199 | 2.59289 | 0.100 | -3.64398 | 50.0 | Quadratic | |
| p-Isopropyltoluene | 50.0 | 55.00597 | 2.21124 | 0.100 | -10.01194 | 50.0 | Quadratic | |
| 1,3-Dichlorobenzene | 1.40157 | 1.36447 | 1.36447 | 0.600 | 2.64684 | 50.0 | Averaged | |
| 1,4-Dichlorobenzene | 1.57472 | 1.52138 | 1.52138 | 0.400 | 3.38754 | 50.0 | Averaged | |

# Continuing Calibration Verification (CCV)

**Client** Bhate Environmental Associates, Inc.
**Project** GROUNDWATER TREATMENT PLANT BI-WEEKLY SAMPLES

**Workorder** HS23091194

**RunID** VOA9_447039

## Volatiles by EPA Volatiles Organics by Method 8260C

**Instrument ID** VOA9.i
**Lab File ID** U092115.D
**Analysis Type** WATER
**Lab Sample ID** CCV-END

**Injection Date** 21-SEP-2023 1556
**ICAL Date(s)** 24-AUG-2023, 14-SEP-2023
**ICAL Times** 12:26, 20:35
**Quant Type** ISTD

| Compound | $\overline{RRF}$ / Conc | RF50 / Conc | CCV RRF50 | Min RRF | %D / %Drift | Max %D / %Drift | Curve Type | Q |
|---|---|---|---|---|---|---|---|---|
| n-Butylbenzene | 50.0 | 54.83894 | 2.02106 | 0.500 | -9.67789 | 50.0 | Quadratic | |
| 1,2-Dichlorobenzene | 1.43347 | 1.42437 | 1.42437 | 0.400 | 0.63515 | 50.0 | Averaged | |
| 1,2-Dibromo-3-Chloropropane | 0.12086 | 0.10395 | 0.10395 | 0.050 | 13.98704 | 50.0 | Averaged | |
| 1,2,4-Trichlorobenzene | 0.81606 | 0.80953 | 0.80953 | 0.200 | 0.80113 | 50.0 | Averaged | |
| Hexachlorobutadiene | 0.36615 | 0.34106 | 0.34106 | 0.100 | 6.85340 | 50.0 | Averaged | |
| Naphthalene | 50.0 | 47.65873 | 2.12330 | 0.200 | 4.68255 | 50.0 | Linear | |
| 1,2,3-Trichlorobenzene | 0.77477 | 0.80148 | 0.80148 | 0.100 | -3.44762 | 50.0 | Averaged | |
| 94 1,2-Dichloroethylene (total | 0.55639 | 0.64404 | 0.64404 | 0.200 | -15.75389 | 50.0 | Averaged | |
| 95 Xylenes (total) | 0.54726 | 0.61507 | 0.61507 | 0.100 | -12.39089 | 50.0 | Averaged | |
| 1,4-Dioxane | 0.00727 | 0.00681 | 0.00681 | 0.001 | 6.25965 | 50.0 | Averaged | |
| Cyclohexane | 50.0 | 61.73395 | 0.84919 | 0.100 | -23.46790 | 50.0 | Quadratic | |
| Freon TF | 50.0 | 60.56112 | 0.50495 | 0.100 | -21.12225 | 50.0 | Quadratic | |
| 1,3-Butadiene | 0.59070 | 0.66867 | 0.66867 | 0.100 | -13.19887 | 50.0 | Averaged | |
| Methylcyclohexane | 0.73295 | 0.80819 | 0.80819 | 0.100 | -10.26498 | 50.0 | Averaged | |
| Methyl Acetate | 0.60624 | 0.70218 | 0.70218 | 0.100 | -15.82438 | 50.0 | Averaged | |
| Tert-butyl alcohol | 0.06126 | 0.06983 | 0.06983 | 0.005 | -13.98839 | 50.0 | Averaged | |
| Isopropyl alcohol | 0.04395 | 0.05182 | 0.05182 | 0.005 | -17.91332 | 50.0 | Averaged | |
| trans-1,4-Dichloro-2-butene | 50.0 | 50.95388 | 0.07793 | 0.050 | -1.90775 | 50.0 | Quadratic | |
| Isobutyl Alcohol | 1000 | 1094 | 0.08214 | 0.005 | -9.41015 | 50.0 | Linear | |
| Acetonitrile | 0.07629 | 0.08980 | 0.08980 | 0.005 | -17.70992 | 50.0 | Averaged | |
| Allyl Chloride | 1.77284 | 2.04288 | 2.04288 | 0.100 | -15.23164 | 50.0 | Averaged | |
| Methacrylonitrile | 0.39305 | 0.48886 | 0.48886 | 0.100 | -24.37690 | 50.0 | Averaged | |
| Methyl Methacrylate | 0.40944 | 0.51122 | 0.51122 | 0.100 | -24.85929 | 50.0 | Averaged | |
| Propionitrile | 0.10832 | 0.12194 | 0.12194 | 0.010 | -12.57275 | 50.0 | Averaged | |
| Acetaldehyde | ++++ | ++++ | 1.158e+61 | 0.001 | ++++ | 50.0 | Linear | * |
| Methyl Acrylate | 0.77827 | 0.96471 | 0.96471 | 0.100 | -23.95648 | 50.0 | Averaged | |
| Dimethyl Disulfide | 50.0 | 37.60639 | 0.28794 | 0.020 | 24.78721 | 50.0 | Quadratic | |
| Chloroprene | 0.20007 | 0.26014 | 0.26014 | 0.100 | -30.02374 | 50.0 | Averaged | |
| Ethyl Methacrylate | 0.43606 | 0.49368 | 0.49368 | 0.100 | -13.21446 | 50.0 | Averaged | |
| 1,2,3-Trimethylbenzene | 1.92286 | 2.25806 | 2.25806 | 0.100 | -17.43210 | 50.0 | Averaged | |
| Epichlorohydrin | 0.00392 | 0.00283 | 0.00283 | 0.001 | 27.83375 | 50.0 | Averaged | |

right solutions.
right partner.

Form 8

# Internal Standard Area and RT Summary

# Volatiles by EPA Volatiles Organics by Method 8260C

Workorder

HS23091194

Client

Bhate Environmental Associates, Inc.

Project

GROUNDWATER TREATMENT PLANT
BI-WEEKLY SAMPLES

09/26/2023

ALS Environmental–Houston Laboratory
10450 Stancliff Road, Suite 210, Houston, TX 77099
Phone (281) 530-5656 Fax (281) 530-5887
www.alsglobal.com

# Form 8 - Internal Standard Area and RT Summary

**Client** Bhate Environmental Associates, Inc.

**Project** GROUNDWATER TREATMENT PLANT BI-WEEKLY SAMPLES

Workorder
**HS23091194**

## Volatiles by EPA Volatiles Organics by Method 8260C

| VOA9_447039 | | Pentafluorobenzene | | | | 1,4 Difluorobenzene | | | | Chlorobenzene d5 | | | | 1,4-Dichlorobenzene d4 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | File ID | Area | # | RT | # | Area | # | RT | # | Area | # | RT | # | Area | # | RT | # |
| 12-HOUR STD (CCV) | U092103.D | 694046 | # | 4.81 | # | 1072816 | # | 5.55 | # | 1044011 | # | 8.19 | # | 550378 | # | 10.17 | # |
| HS23091194-01 | U092110.D | 708269 | | 4.81 | | 970113 | | 5.55 | | 865068 | | 8.19 | | 397287 | | 10.17 | |
| HS23091194-01MS | U092113.D | 707490 | | 4.82 | | 1022232 | | 5.55 | | 950272 | | 8.19 | | 524986 | | 10.17 | |
| HS23091194-01MSD | U092114.D | 759829 | | 4.81 | | 1112563 | | 5.55 | | 1039796 | | 8.19 | | 539286 | | 10.17 | |
| HS23091194-02 | U092109.D | 725975 | | 4.81 | | 1006415 | | 5.55 | | 898347 | | 8.19 | | 414843 | | 10.17 | |
| VBLKW-230921 | U092108.D | 746421 | | 4.82 | | 1005617 | | 5.55 | | 879991 | | 8.19 | | 411789 | | 10.17 | |
| VLCSW-230921 | U092105.D | 650405 | | 4.81 | | 1029779 | | 5.55 | | 970470 | | 8.19 | | 511515 | | 10.17 | |

AREA UPPER LIMIT = +100% of STD IS Area
AREA LOWER LIMIT = - 50% of STD IS Area
RT - Retention IS - Internal StandardTime

RT UPPER LIMIT = + 0.50 of STD IS RT
RT LOWER LIMIT = - 0.50 of STD IS RT
CCV - Continuing Calibration Verification

# - Area or RT Limit Flag
* - Value Outside Area or RT limits
H - Hour STD - Standard

right solutions.
right partner.

# Analysis Run Log

# Volatiles by EPA Volatiles Organics by Method 8260C

Workorder

HS23091194

Client

Bhate Environmental Associates, Inc.

Project

GROUNDWATER TREATMENT PLANT
BI-WEEKLY SAMPLES

09/26/2023

ALS Environmental–Houston Laboratory
10450 Stancliff Road, Suite 210, Houston, TX 77099
Phone (281) 530-5656 Fax (281) 530-5887
www.alsglobal.com

# Form 13 - Analysis Run Log

**Client** Bhate Environmental Associates, Inc.

Workorder

**Project** GROUNDWATER TREATMENT PLANT BI-WEEKLY SAMPLES

**HS23091194**

RunID

## Volatiles by EPA Volatiles Organics by Method 8260C

VOA9-446513

**Run ID** VOA9_446513 **Start Date** 09/14/23 **EndDate** 09/14/23

| Inj. Time | Client Sample ID | Type | Lab Sample ID | File ID | Analysis Date | DF |
|---|---|---|---|---|---|---|
| 14:11 | BFB | TUNE | BFB | U091401.D | 09/14/23 | 1 |
| 15:47 | VSTD000.25 | ICAL1 | VSTD000.25 | U091402.D | 09/14/23 | 1 |
| 16:09 | VSTD000.5 | ICAL2 | VSTD000.5 | U091403.D | 09/14/23 | 1 |
| 16:53 | VSTD001 | ICAL3 | VSTD001 | U091404.D | 09/14/23 | 1 |
| 17:15 | VSTD002 | ICAL4 | VSTD002 | U091405.D | 09/14/23 | 1 |
| 17:37 | VSTD005 | ICAL5 | VSTD005 | U091406.D | 09/14/23 | 1 |
| 18:00 | VSTD020 | ICAL6 | VSTD020 | U091407.D | 09/14/23 | 1 |
| 18:22 | VSTD050 | ICAL7 | VSTD050 | U091408.D | 09/14/23 | 1 |
| 18:44 | VSTD100 | ICAL8 | VSTD100 | U091409.D | 09/14/23 | 1 |
| 19:06 | VSTD150 | ICAL9 | VSTD150 | U091410.D | 09/14/23 | 1 |
| 19:28 | VSTD200 | ICAL | VSTD200 | U091411.D | 09/14/23 | 1 |
| 20:13 | CCV | ICV | CCV | U091413.D | 09/14/23 | 1 |

# Form 13 - Analysis Run Log

**Client** Bhate Environmental Associates, Inc.

Workorder

**Project** GROUNDWATER TREATMENT PLANT BI-WEEKLY SAMPLES

**HS23091194**

RunID

## Volatiles by EPA Volatiles Organics by Method 8260C

VOA9-447039

**Run ID** VOA9_447039 **Start Date** 09/21/23 **EndDate** 09/21/23

| Inj. Time | Client Sample ID | Type | Lab Sample ID | File ID | Analysis Date | DF |
|---|---|---|---|---|---|---|
| 10:44 | BFB | TUNE | BFB | U092101.D | 09/21/23 | 1 |
| 11:28 | CCV | CCV | CCV | U092103.D | 09/21/23 | 1 |
| 11:51 | CCB | CCB | CCB | U092104.D | 09/21/23 | 1 |
| 12:13 | VLCSW-230921 | LCS | VLCSW-230921 | U092105.D | 09/21/23 | 1 |
| 13:20 | VBLKW-230921 | MBLK | VBLKW-230921 | U092108.D | 09/21/23 | 1 |
| 13:42 | HS23091194-02 | SAMP | Trip Blank | U092109.D | 09/21/23 | 1 |
| 14:04 | HS23091194-01 | SAMP | LH18/24- | U092110.D | 09/21/23 | 1 |
| 15:11 | HS23091194-01MS | MS | HS23091194-01MS | U092113.D | 09/21/23 | 1 |
| 15:34 | HS23091194-01MSD | MSD | HS23091194-01MSD | U092114.D | 09/21/23 | 1 |
| 15:56 | CCV-END | CCV_END | CCV-END | U092115.D | 09/21/23 | 1 |

right solutions.
right partner.

# Raw Data VOA9 446513

# Volatiles by EPA Volatiles Organics by Method 8260C

Workorder

HS23091194

Client

Bhate Environmental Associates, Inc.

Project

GROUNDWATER TREATMENT PLANT
BI-WEEKLY SAMPLES

09/26/2023

ALS Environmental–Houston Laboratory
10450 Stancliff Road, Suite 210, Houston, TX 77099
Phone (281) 530-5656 Fax (281) 530-5887
www.alsglobal.com

Data File: \\NAHSTWS005\Target\chem\voa9.i\U230914.b\U091401.D Page 1
Report Date: 15-Sep-2023 21:29

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa9.i\U230914.b\U091401.D
Lab Smp Id: BFB Client Smp ID: BFB
Inj Date : 14-SEP-2023 14:11
Operator : PC Inst ID: VOA9.i
Smp Info : BFB;BFB;3;;;
Misc Info : V9;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa9.i\U230914.b\bfb.m
Meth Date : 27-Jan-2023 08:08 apoluri Quant Type: ISTD
Cal Date : 30-MAR-2018 18:09 Cal File: U033003.d
Als bottle: 64 QC Sample: BFB
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.14 Sample Matrix: WATER
Processing Host: NAHSTW7051

Concentration Formula: Amt * DF * Uf * Vf * Vi * CpndVariable

| Name | Value | Description |
|---|---|---|
| DF | 1.000 | Dilution Factor |
| Uf | 5.000 | ng unit correction factor |
| Vf | 1.000 | Volumetric correction factor |
| Vi | 2.000 | Injection Volume |
| Cpnd Variable | | Local Compound Variable |

| | | | | | CONCENTRATIONS ON-COL ( ug/L) | FINAL ( ug/l) | | |
|---|---|---|---|---|---|---|---|---|
| RT | EXP RT | REL RT | MASS | RESPONSE | | | TARGET RANGE | RATIO |
| 1 bfb | | | | | | | CAS #: 460-00-4 | |
| 9.193 | 9.180 | ( 0.000) | 95 | 196352 | | | 0.00- 100.00 | 100.00 |
| 9.193 | 9.180 | ( 0.000) | 50 | 36584 | | | 15.00- 40.00 | 18.63 |
| 9.193 | 9.180 | ( 0.000) | 75 | 93208 | | | 30.00- 60.00 | 47.47 |
| 9.193 | 9.180 | ( 0.000) | 96 | 11853 | | | 5.00- 9.00 | 6.04 |
| 9.193 | 9.180 | ( 0.000) | 173 | 0 | 0.0 | 0.0 | 0.00- 2.00 | 0.00 |
| 9.193 | 9.180 | ( 0.000) | 174 | 180992 | | | 50.00- 0.00 | 92.18 |
| 9.193 | 9.180 | ( 0.000) | 175 | 15049 | | | 5.00- 9.00 | 8.31 |
| 9.193 | 9.180 | ( 0.000) | 176 | 172096 | | | 95.00- 101.00 | 95.08 |
| 9.193 | 9.180 | ( 0.000) | 177 | 11259 | | | 5.00- 9.00 | 6.54 |

| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 95 | Base Peak, 100% relative abundance | 100.00 |
| 50 | 15.00 - 40.00% of mass 95 | 18.63 |
| 75 | 30.00 - 60.00% of mass 95 | 47.47 |
| 96 | 5.00 - 9.00% of mass 95 | 6.04 |
| 173 | Less than 2.00% of mass 174 | 0.00 ( 0.00) |
| 174 | Greater than 50.00% of mass 95 | 92.18 |
| 175 | 5.00 - 9.00% of mass 174 | 7.66 ( 8.31) |
| 176 | 95.00 - 101.00% of mass 174 | 87.65 ( 95.08) |
| 177 | 5.00 - 9.00% of mass 176 | 5.73 ( 6.54) |

Data File: U091401.D
Spectrum: Scan 2297 ( 9.20)
Location of Maximum: 95.05
Number of points: 218

| m/z | Y | m/z | Y | m/z | Y | m/z | Y |
|---|---|---|---|---|---|---|---|
| 35.10 | 338 | 86.90 | 9041 | 138.30 | 188 | 206.60 | 61 |
| 35.90 | 1879 | 88.00 | 7559 | 138.80 | 139 | 207.20 | 53 |
| 37.00 | 9127 | 89.20 | 244 | 139.70 | 502 | 208.20 | 66 |
| 38.10 | 8259 | 91.00 | 1042 | 140.90 | 1886 | 208.80 | 64 |
| 39.10 | 4027 | 92.00 | 5247 | 142.00 | 526 | 211.10 | 108 |
| 40.00 | 818 | 93.00 | 9446 | 142.90 | 3162 | 211.80 | 69 |
| 41.00 | 420 | 94.00 | 24176 | 143.80 | 300 | 212.90 | 70 |
| 41.90 | 376 | 95.00 | 196352 | 144.90 | 1178 | 215.70 | 145 |
| 43.20 | 497 | 96.00 | 11853 | 146.00 | 452 | 218.30 | 168 |
| 44.10 | 2434 | 96.90 | 386 | 147.00 | 251 | 225.00 | 55 |
| 45.00 | 2046 | 97.40 | 447 | 147.90 | 677 | 228.20 | 62 |
| 46.30 | 459 | 98.10 | 179 | 148.80 | 237 | 228.60 | 83 |
| 47.00 | 2906 | 99.00 | 188 | 149.80 | 243 | 230.50 | 65 |
| 48.00 | 1615 | 100.00 | 249 | 152.00 | 287 | 234.40 | 63 |
| 49.00 | 8000 | 100.90 | 208 | 153.00 | 217 | 238.10 | 112 |
| 50.00 | 36584 | 101.70 | 167 | 153.60 | 167 | 239.90 | 60 |
| 51.00 | 10681 | 102.60 | 118 | 154.00 | 178 | 240.80 | 70 |
| 52.00 | 662 | 103.00 | 105 | 154.90 | 460 | 243.00 | 62 |
| 53.00 | 488 | 103.80 | 1048 | 155.90 | 234 | 243.70 | 63 |
| 53.70 | 317 | 104.60 | 258 | 157.00 | 527 | 245.60 | 74 |
| 54.10 | 347 | 105.90 | 942 | 158.10 | 181 | 250.70 | 66 |
| 55.00 | 770 | 106.60 | 274 | 158.80 | 355 | 256.90 | 65 |
| 56.00 | 3221 | 108.10 | 310 | 160.20 | 138 | 257.90 | 72 |
| 57.00 | 5330 | 109.90 | 258 | 161.00 | 280 | 258.70 | 64 |
| 58.00 | 518 | 111.00 | 542 | 161.90 | 227 | 267.60 | 53 |
| 59.00 | 237 | 112.10 | 258 | 162.50 | 84 | 268.70 | 74 |
| 60.00 | 2012 | 112.60 | 204 | 164.50 | 162 | 269.30 | 62 |
| 61.00 | 9606 | 113.40 | 85 | 165.20 | 165 | 275.30 | 85 |
| 62.00 | 9229 | 114.00 | 158 | 166.20 | 131 | 276.30 | 56 |
| 63.00 | 7568 | 114.80 | 324 | 167.10 | 74 | 279.30 | 53 |
| 64.00 | 1491 | 115.90 | 892 | 168.50 | 162 | 280.90 | 113 |
| 65.00 | 1328 | 116.90 | 1588 | 169.30 | 253 | 282.30 | 61 |
| 66.10 | 341 | 117.90 | 1185 | 169.90 | 185 | 286.30 | 55 |
| 66.90 | 716 | 119.00 | 1168 | 170.30 | 223 | 291.30 | 116 |
| 67.20 | 785 | 120.10 | 122 | 171.10 | 662 | 292.50 | 56 |
| 68.00 | 18336 | 121.00 | 110 | 171.90 | 2940 | 296.30 | 51 |
| 69.00 | 17200 | 121.60 | 67 | 173.90 | 180992 | 307.50 | 70 |
| 70.00 | 1353 | 122.60 | 259 | 175.00 | 15049 | 308.60 | 88 |
| 72.00 | 1009 | 123.20 | 367 | 175.90 | 172096 | 312.00 | 59 |
| 73.00 | 8530 | 123.80 | 303 | 177.00 | 11259 | 317.00 | 58 |
| 74.00 | 32336 | 124.90 | 97 | 178.00 | 251 | 317.80 | 52 |
| 75.00 | 93208 | 125.50 | 236 | 179.20 | 162 | 318.10 | 53 |
| 76.00 | 7896 | 126.60 | 148 | 180.90 | 99 | 318.90 | 152 |
| 77.00 | 1458 | 127.90 | 660 | 182.20 | 85 | 321.80 | 115 |
| 77.70 | 1123 | 129.00 | 310 | 187.00 | 100 | 323.10 | 69 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 78.90 | 6903 | 129.90 | 862 | 188.70 | 63 | 330.30 | 81 |
| 80.00 | 2305 | 130.90 | 523 | 191.60 | 140 | 332.30 | 53 |
| 80.90 | 7871 | 131.80 | 200 | 193.40 | 104 | 333.70 | 79 |
| 82.00 | 2213 | 133.00 | 58 | 195.10 | 120 | 343.40 | 81 |
| 82.80 | 270 | 133.90 | 237 | 195.60 | 75 | 344.50 | 66 |
| 83.30 | 198 | 134.80 | 467 | 197.30 | 70 | 345.60 | 69 |
| 84.00 | 274 | 135.90 | 209 | 198.30 | 228 | 347.10 | 77 |
| 84.50 | 197 | 136.70 | 404 | 201.10 | 77 | 347.50 | 73 |
| 85.40 | 209 | 137.10 | 362 | 203.20 | 68 | | |
| 86.10 | 524 | 137.80 | 93 | 205.80 | 57 | | |

Data File: \\nahstws005\target\chem\voa9.i\u230914.b\u091401.d Page 1

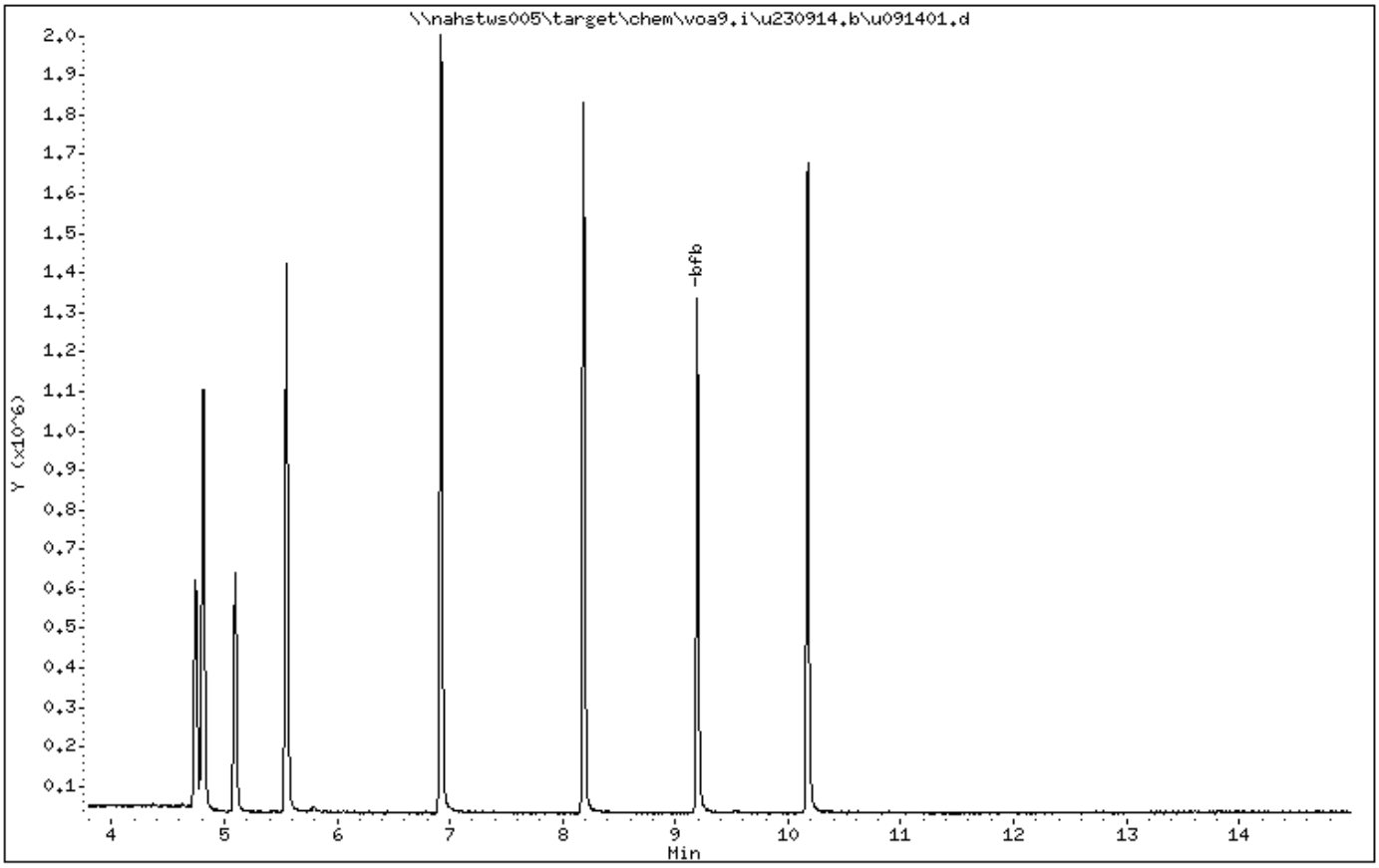
Date : 14-SEP-2023 14:11

Client ID: BFB Instrument: VOA9.i

Sample Info: BFB;BFB;3;;;

Volume Injected (uL): 2.0 Operator: PC

Column phase: DB624 Column diameter: 0.25



Data File : \\nahstws005\target\chem\voa9.i\u230914.b\u091401.d
Inj Date  : 14-SEP-2023 14:11
InstruID  : VOA9.i
LabSampID : BFB

NO MANUAL INTEGRATIONS

Data File: \\NAHSTWS005\Target\chem\voa9.i\U230914.b\U091402.D  Page 1
Report Date: 18-Sep-2023 12:31

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa9.i\U230914.b\U091402.D
Lab Smp Id: VSTD000.25  Client Smp ID: VSTD000.25
Inj Date  : 14-SEP-2023 15:47
Operator  : PC  Inst ID: VOA9.i
Smp Info  : VSTD000.25;VSTD000.25;1;1;
Misc Info : V9;WATER;0;1;
Comment   :
Method    : \\NAHSTWS005\Target\chem\voa9.i\U230914.b\8260C.m
Meth Date : 18-Sep-2023 12:31 VOA9.i  Quant Type: ISTD
Cal Date  : 14-SEP-2023 20:35  Cal File: U091414.D
Als bottle: 2  Calibration Sample, Level: 1
Dil Factor: 1.00000
Integrator: HP RTE  Compound Sublist: 08260V9.sub
Target Version:  4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

| Name | Value | Description |
|---|---|---|
| DF | 1.000 | Dilution Factor |
| Uf | 5.000 | ng unit correction factor |
| Vo | 5.000 | sample purged |
| Cpnd Variable | | Local Compound Variable |

| | Compounds | QUANT SIG MASS | RT | EXP RT | REL RT | RESPONSE | AMOUNTS CAL-AMT ( ug/l) | ON-COL ( ug/l) |
|---|---|---|---|---|---|---|---|---|
| * 1 | Pentafluorobenzene | 168 | 4.808 | 4.808 | (1.000) | 748271 | 50.0000 | |
| 2 | Dichlorodifluoromethane | 85 | 1.153 | 1.153 | (0.240) | 1252 | 0.25000 | 1.48 |
| 3 | Chloromethane | 50 | 1.288 | 1.288 | (0.268) | 5836 | 0.25000 | |
| 5 | Vinyl Chloride | 62 | 1.366 | 1.366 | (0.284) | 1642 | 0.25000 | 0.17 |
| 6 | Bromomethane | 94 | 1.610 | 1.610 | (0.335) | 2097 | 0.25000 | 0.89 |
| 7 | Chloroethane | 64 | 1.696 | 1.696 | (0.353) | 2268 | 0.25000 | 0.32 |
| 8 | Trichlorofluoromethane | 101 | 1.891 | 1.891 | (0.393) | 2050 | 0.25000 | 0.16 |
| 9 | Acrolein | 56 | 2.255 | 2.255 | (0.469) | 684 | 0.50000 | 1.06 |
| 10 | Acetone | 43 | 2.401 | 2.401 | (0.499) | 11222 | 0.50000 | 0.85 |
| 11 | 1,1-Dichloroethene | 96 | 2.315 | 2.315 | (0.482) | 1221 | 0.25000 | 0.16 |
| 15 | Iodomethane | 142 | 2.457 | 2.457 | (0.511) | 3284 | 0.50000 | 4.11 |
| 16 | Acrylonitrile | 53 | 3.057 | 3.057 | (0.636) | 1975 | 0.50000 | 0.45 |
| 17 | Methylene Chloride | 84 | 2.787 | 2.787 | (0.580) | 9572 | 0.25000 | 2.67 |
| 18 | Methyl tert-butyl ether | 73 | 3.076 | 3.076 | (0.640) | 5540 | 0.25000 | 0.26 |
| 19 | Carbon Disulfide | 76 | 2.514 | 2.514 | (0.523) | 8172 | 0.50000 | 0.40 |
| 20 | trans-1,2-Dichloroethene | 96 | 3.053 | 3.053 | (0.635) | 1955 | 0.25000 | 0.25 |
| 21 | Vinyl Acetate | 43 | 3.608 | 3.608 | (0.751) | 10128 | 0.50000 | 0.36 |
| 22 | 1,1-Dichloroethane | 63 | 3.503 | 3.503 | (0.729) | 4248 | 0.25000 | 0.27 |
| 24 | 2-Butanone | 43 | 4.264 | 4.264 | (0.887) | 1605 | 0.50000 | 0.35 |
| 26 | 2,2-Dichloropropane | 77 | 4.170 | 4.170 | (0.867) | 1960 | 0.25000 | 0.20 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 27 cis-1,2-Dichloroethene | 96 | 4.182 | 4.182 (0.870) | 2075 | 0.25000 | 0.23 |
| 28 Chloroform | 83 | 4.564 | 4.564 (0.949) | 4138 | 0.25000 | 0.27 |

Data File: \\NAHSTWS005\Target\chem\voa9.i\U230914.b\U091402.D Page 2
Report Date: 18-Sep-2023 12:31

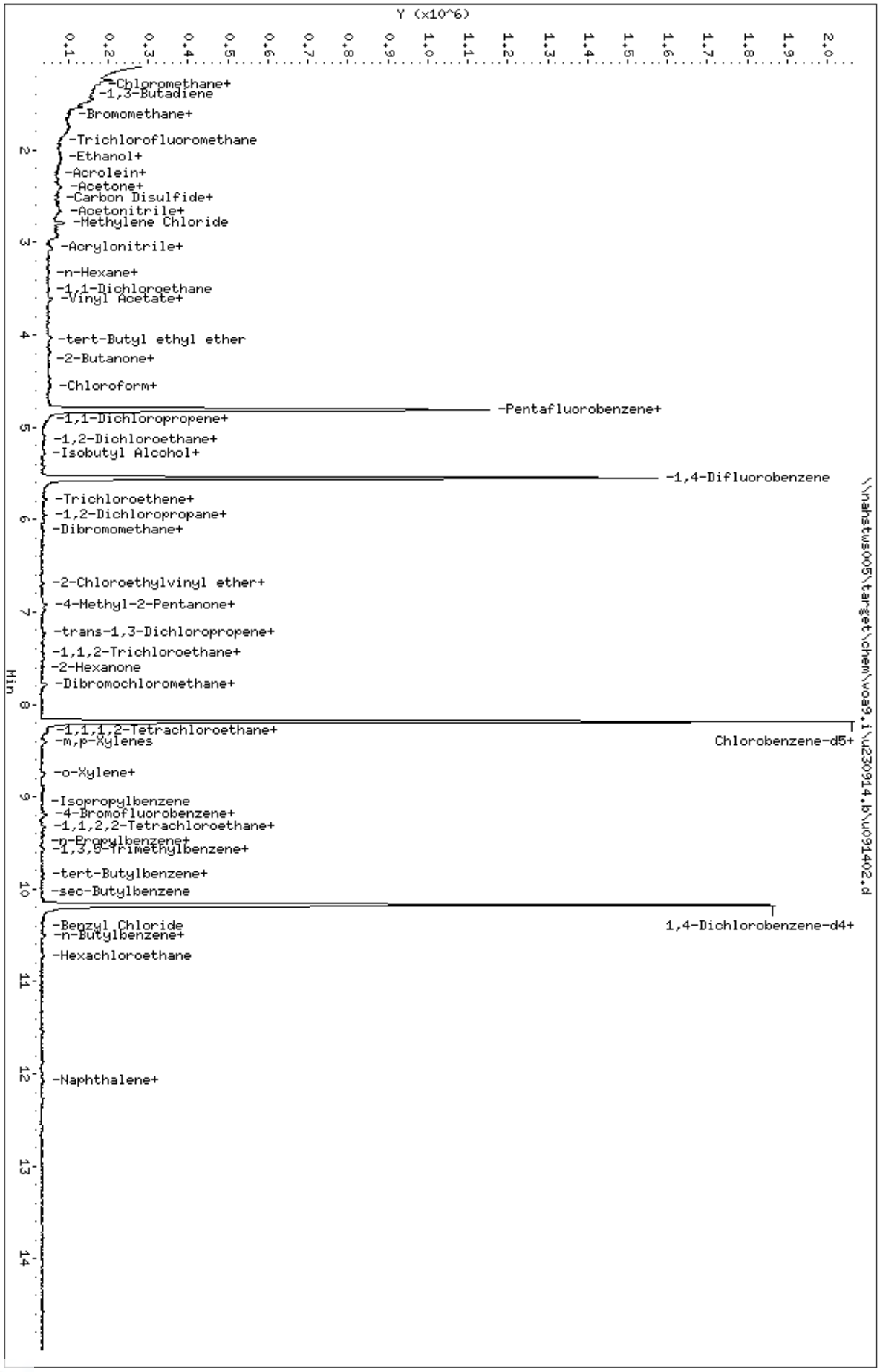
| | | | QUANT SIG MASS | RT | EXP RT | REL RT | RESPONSE | AMOUNTS CAL-AMT ( ug/l) | ON-COL ( ug/l) |
|---|---|---|---|---|---|---|---|---|---|
| | 29 | Bromochloromethane | 128 | 4.478 | 4.478 | (0.931) | 1452 | 0.25000 | 0.31 |
| $ | 30 | Dibromofluoromethane | 113 | 4.744 | 4.744 | (0.987) | 2743 | 0.25000 | 0.60 |
| | 31 | 1,1,1-Trichloroethane | 97 | 4.736 | 4.736 | (0.985) | 2559 | 0.25000 | 0.24 |
| | 32 | 1,1-Dichloropropene | 75 | 4.909 | 4.909 | (0.885) | 2443 | 0.25000 | 0.26 |
| | 33 | 1,2-Dichloroethane | 62 | 5.171 | 5.171 | (0.932) | 2347 | 0.25000 | 0.20 |
| | 34 | Carbon Tetrachloride | 117 | 4.901 | 4.901 | (0.883) | 1512 | 0.25000 | 0.18 |
| $ | 35 | 1,2-Dichloroethane-d4 | 65 | 5.093 | 5.093 | (1.059) | 2797 | 0.25000 | 0.21 |
| * | 36 | 1,4-Difluorobenzene | 114 | 5.550 | 5.550 | (1.000) | 1177001 | 50.0000 | |
| | 37 | Benzene | 78 | 5.134 | 5.134 | (0.925) | 5679 | 0.25000 | 0.19 |
| | 38 | Trichloroethene | 130 | 5.782 | 5.782 | (1.042) | 3364 | 0.25000 | 0.39 |
| | 41 | 2-Chloroethylvinyl ether | 63 | 6.735 | 6.735 | (1.213) | 885 | 0.50000 | 21.23 |
| | 42 | 1,2-Dichloropropane | 63 | 6.015 | 6.015 | (1.084) | 3155 | 0.25000 | 0.40 |
| | 44 | Dibromomethane | 93 | 6.116 | 6.116 | (1.102) | 1176 | 0.25000 | 0.21 |
| | 45 | 4-Methyl-2-Pentanone | 43 | 6.862 | 6.862 | (0.838) | 3325 | 0.50000 | 2.94 |
| | 46 | cis-1,3-Dichloropropene | 75 | 6.693 | 6.693 | (1.206) | 1689 | 0.25000 | 3.28 |
| * | 47 | Chlorobenzene-d5 | 117 | 8.185 | 8.185 | (1.000) | 1066883 | 50.0000 | |
| $ | 48 | Toluene-d8 | 98 | 6.922 | 6.922 | (0.846) | 8336 | 0.25000 | 0.35 |
| | 50 | Toluene | 91 | 6.982 | 6.982 | (0.853) | 4621 | 0.25000 | 0.16 |
| | 51 | trans-1,3-Dichloropropene | 75 | 7.199 | 7.199 | (1.297) | 1636 | 0.25000 | 2.55 |
| | 52 | 2-Hexanone | 43 | 7.600 | 7.600 | (0.929) | 1577 | 0.50000 | 0.32 |
| | 53 | 1,1,2-Trichloroethane | 83 | 7.353 | 7.353 | (0.898) | 1758 | 0.25000 | 0.28 |
| | 54 | 1,3-Dichloropropane | 76 | 7.499 | 7.499 | (0.916) | 3756 | 0.25000 | 0.29 |
| | 55 | Dibromochloromethane | 129 | 7.690 | 7.690 | (0.940) | 1267 | 0.25000 | 0.17 |
| | 56 | Tetrachloroethene | 164 | 7.454 | 7.454 | (0.911) | 1717 | 0.25000 | 0.25 |
| | 57 | 1,2-Dibromoethane | 107 | 7.788 | 7.788 | (0.951) | 2046 | 0.25000 | 0.27 |
| | 58 | 1-Chlorohexane | 55 | 8.182 | 8.182 | (1.474) | 11449 | 0.25000 | 1.61 |
| | 59 | Chlorobenzene | 112 | 8.208 | 8.208 | (1.003) | 4876 | 0.25000 | 0.23 |
| | 60 | 1,1,1,2-Tetrachloroethane | 131 | 8.286 | 8.286 | (1.012) | 1675 | 0.25000 | 0.23 |
| | 61 | Ethylbenzene | 106 | 8.309 | 8.309 | (1.015) | 1685 | 0.25000 | 0.17 |
| | 62 | m,p-Xylenes | 106 | 8.410 | 8.410 | (1.027) | 3241 | 0.50000 | 0.27 |
| | 63 | o-Xylene | 106 | 8.744 | 8.744 | (1.068) | 1589 | 0.25000 | 0.12 |
| | 64 | Styrene | 104 | 8.763 | 8.763 | (1.071) | 2629 | 0.25000 | 0.13 |
| | 67 | Isopropylbenzene | 105 | 9.062 | 9.062 | (1.107) | 3737 | 0.25000 | 1.60 |
| | 68 | 1,1,2,2-Tetrachloroethane | 83 | 9.329 | 9.329 | (0.917) | 2546 | 0.25000 | 0.26 |
| $ | 69 | 4-Bromofluorobenzene | 95 | 9.197 | 9.197 | (1.124) | 4117 | 0.25000 | 0.28 |
| * | 70 | 1,4-Dichlorobenzene-d4 | 152 | 10.172 | 10.172 | (1.000) | 492391 | 50.0000 | |
| | 71 | 1,2,3-Trichloropropane | 75 | 9.366 | 9.366 | (0.921) | 2245 | 0.25000 | 0.27 |
| | 73 | n-Propylbenzene | 91 | 9.415 | 9.415 | (0.926) | 3500 | 0.25000 | 3.12 |
| | 74 | Bromobenzene | 156 | 9.317 | 9.317 | (0.916) | 1599 | 0.25000 | 0.20 |
| | 75 | 1,3,5-Trimethylbenzene | 105 | 9.565 | 9.565 | (0.940) | 3420 | 0.25000 | 0.18 |
| | 76 | 2-Chlorotoluene | 91 | 9.486 | 9.486 | (0.933) | 3449 | 0.25000 | 0.18 |
| | 77 | 4-Chlorotoluene | 91 | 9.580 | 9.580 | (0.942) | 2806 | 0.25000 | 0.13 |
| | 78 | tert-Butylbenzene | 119 | 9.835 | 9.835 | (0.967) | 2327 | 0.25000 | 0.13 |
| | 79 | 1,2,4-Trimethylbenzene | 105 | 9.883 | 9.883 | (0.972) | 2697 | 0.25000 | 0.14 |
| | 81 | sec-Butylbenzene | 105 | 10.026 | 10.026 | (0.986) | 2617 | 0.25000 | 1.88 |
| | 82 | p-Isopropyltoluene | 119 | 10.150 | 10.150 | (0.998) | 2450 | 0.25000 | 1.90 |
| | 83 | 1,3-Dichlorobenzene | 146 | 10.116 | 10.116 | (0.994) | 2184 | 0.25000 | 0.15 |
| | 84 | 1,4-Dichlorobenzene | 146 | 10.191 | 10.191 | (1.002) | 4567 | 0.25000 | 0.29 |
| | 87 | n-Butylbenzene | 91 | 10.491 | 10.491 | (1.031) | 2414 | 0.25000 | 2.19 |
| | 88 | 1,2-Dichlorobenzene | 146 | 10.509 | 10.509 | (1.033) | 3430 | 0.25000 | 0.24 |
| | 92 | Naphthalene | 128 | 12.080 | 12.080 | (1.188) | 2827 | 0.25000 | 2.85 |
| M | 94 | 1,2-Dichloroethylene (total) | 96 | | | | 4030 | 0.50000 | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| M | 95 | Xylenes (total) | 106 | | | | 4830 | 0.75000 | |
| | 135 | 1,4-Dioxane | 88 | 6.187 | 6.187 (1.287) | | 604 | 5.00000 | 5.55(M) |

| Compounds | QUANT SIG MASS | RT | EXP RT | REL RT | RESPONSE | AMOUNTS CAL-AMT ( ug/l) | AMOUNTS ON-COL ( ug/l) |
|---|---|---|---|---|---|---|---|
| 141 Cyclohexane | 56 | 4.804 | 4.804 | (0.999) | 21349 | 0.25000 | 2.67 |
| 140 1,3-Butadiene | 54 | 1.389 | 1.389 | (0.289) | 1355 | 0.25000 | 0.15 |
| 147 Methylcyclohexane | 55 | 5.947 | 5.947 | (1.072) | 3460 | 0.25000 | 0.20 |

QC Flag Legend

M - Compound response manually integrated.




Data File: \\nahstws005\target\chem\voa9.i\u230914.b\u091402.d
Date : 14-SEP-2023 15:47
Client ID: VSTD000.25
Sample Info: VSTD000.25;VSTD000.25;1;1;
Purge Volume: 5.0
Column phase: DB624

Instrument: VOA9.i
Operator: PC
Column diameter: 0.18

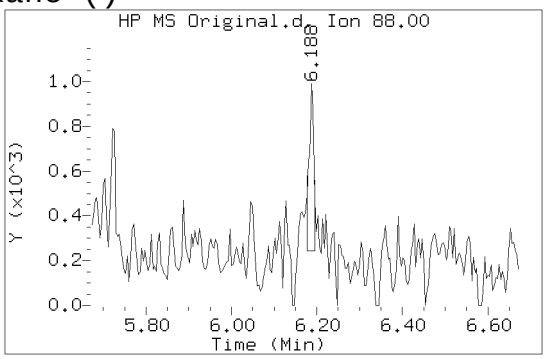
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Inj Date : 14-SEP-2023 15:47
InstruID : VOA9.i
LabSampID : VSTD000.25

1,4-Dioxane ()

Reason Code:

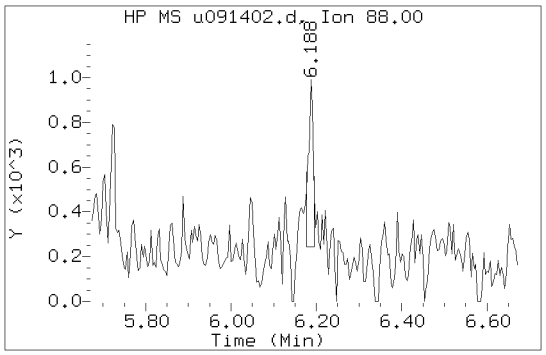
BEFORE

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88
AREA
604
HEIGHT
748
18-Sep-2023
12:30
linh
pham



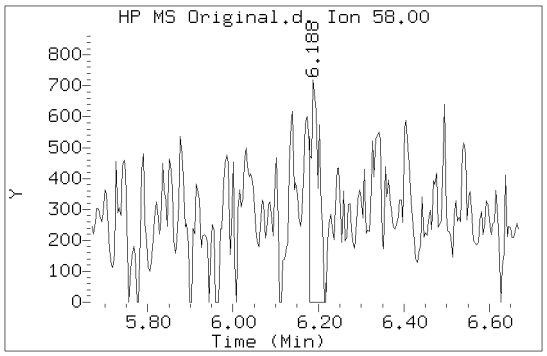

AFTER

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604
HEIGHT
748
18-Sep-2023
12:30
linh
pham



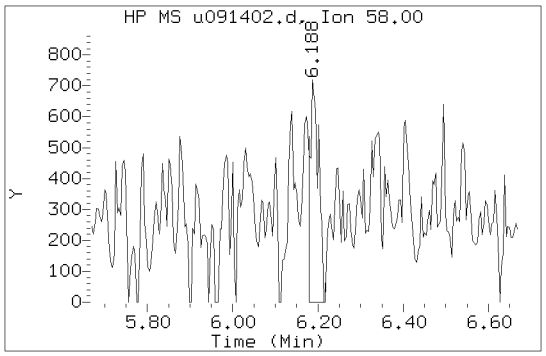

BEFORE

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996
HEIGHT
719
18-Sep-2023
12:30
linh
pham




AFTER

MASS
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AREA
996
HEIGHT
719
18-Sep-2023
12:30
linh
pham



Data File: \\NAHSTWS005\Target\chem\voa9.i\U230914.b\U091403.D  Page 1
Report Date: 18-Sep-2023 12:31

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa9.i\U230914.b\U091403.D
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Inj Date  : 14-SEP-2023 16:09
Operator  : PC  Inst ID: VOA9.i
Smp Info  : VSTD000.5;VSTD000.5;1;2;
Misc Info : V9;WATER;0;1;
Comment   :
Method    : \\NAHSTWS005\Target\chem\voa9.i\U230914.b\8260C.m
Meth Date : 18-Sep-2023 12:31 VOA9.i  Quant Type: ISTD
Cal Date  : 14-SEP-2023 20:35  Cal File: U091414.D
Als bottle: 3  Calibration Sample, Level: 2
Dil Factor: 1.00000
Integrator: HP RTE  Compound Sublist: 08260V9.sub
Target Version:  4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

| Name | Value | Description |
|---|---|---|
| DF | 1.000 | Dilution Factor |
| Uf | 5.000 | ng unit correction factor |
| Vo | 5.000 | sample purged |
| Cpnd Variable | | Local Compound Variable |

| | Compounds | QUANT SIG MASS | RT | EXP RT | REL RT | RESPONSE | AMOUNTS CAL-AMT ( ug/l) | ON-COL ( ug/l) |
|---|---|---|---|---|---|---|---|---|
| * 1 | Pentafluorobenzene | 168 | 4.811 | 4.811 | (1.000) | 639208 | 50.0000 | |
| 2 | Dichlorodifluoromethane | 85 | 1.156 | 1.156 | (0.240) | 3707 | 0.50000 | 1.85(M) |
| 3 | Chloromethane | 50 | 1.291 | 1.291 | (0.268) | 8313 | 0.50000 | (M) |
| 5 | Vinyl Chloride | 62 | 1.370 | 1.370 | (0.285) | 4059 | 0.50000 | 0.50(M) |
| 6 | Bromomethane | 94 | 1.618 | 1.618 | (0.336) | 2668 | 0.50000 | 1.11(M) |
| 7 | Chloroethane | 64 | 1.692 | 1.692 | (0.352) | 3286 | 0.50000 | 0.55 |
| 8 | Trichlorofluoromethane | 101 | 1.887 | 1.887 | (0.392) | 5389 | 0.50000 | 0.51 |
| 9 | Acrolein | 56 | 2.259 | 2.259 | (0.469) | 643 | 1.00000 | 1.17(M) |
| 10 | Acetone | 43 | 2.408 | 2.408 | (0.501) | 7172 | 1.00000 | 0.09(M) |
| 11 | 1,1-Dichloroethene | 96 | 2.330 | 2.330 | (0.484) | 3071 | 0.50000 | 0.48(M) |
| 15 | Iodomethane | 142 | 2.461 | 2.461 | (0.512) | 3691 | 1.00000 | 4.36(M) |
| 16 | Acrylonitrile | 53 | 3.068 | 3.068 | (0.638) | 4051 | 1.00000 | 1.08(M) |
| 17 | Methylene Chloride | 84 | 2.787 | 2.787 | (0.579) | 5165 | 0.50000 | 2.31(M) |
| 18 | Methyl tert-butyl ether | 73 | 3.072 | 3.072 | (0.639) | 10417 | 0.50000 | 0.57 |
| 19 | Carbon Disulfide | 76 | 2.513 | 2.513 | (0.522) | 16157 | 1.00000 | 0.94 |
| 20 | trans-1,2-Dichloroethene | 96 | 3.050 | 3.050 | (0.634) | 3543 | 0.50000 | 0.53(M) |
| 21 | Vinyl Acetate | 43 | 3.604 | 3.604 | (0.749) | 24399 | 1.00000 | 1.03 |
| 22 | 1,1-Dichloroethane | 63 | 3.511 | 3.511 | (0.730) | 6864 | 0.50000 | 0.51(T) |
| 24 | 2-Butanone | 43 | 4.272 | 4.272 | (0.888) | 4163 | 1.00000 | 1.07(M) |
| 26 | 2,2-Dichloropropane | 77 | 4.170 | 4.170 | (0.867) | 4335 | 0.50000 | 0.53(M) |

| | | | | | | |
|---|---|---|---|---|---|---|
| 27 cis-1,2-Dichloroethene | 96 | 4.197 | 4.197 (0.872) | 3842 | 0.50000 | 0.50(M) |
| 28 Chloroform | 83 | 4.571 | 4.571 (0.950) | 6484 | 0.50000 | 0.50(M) |

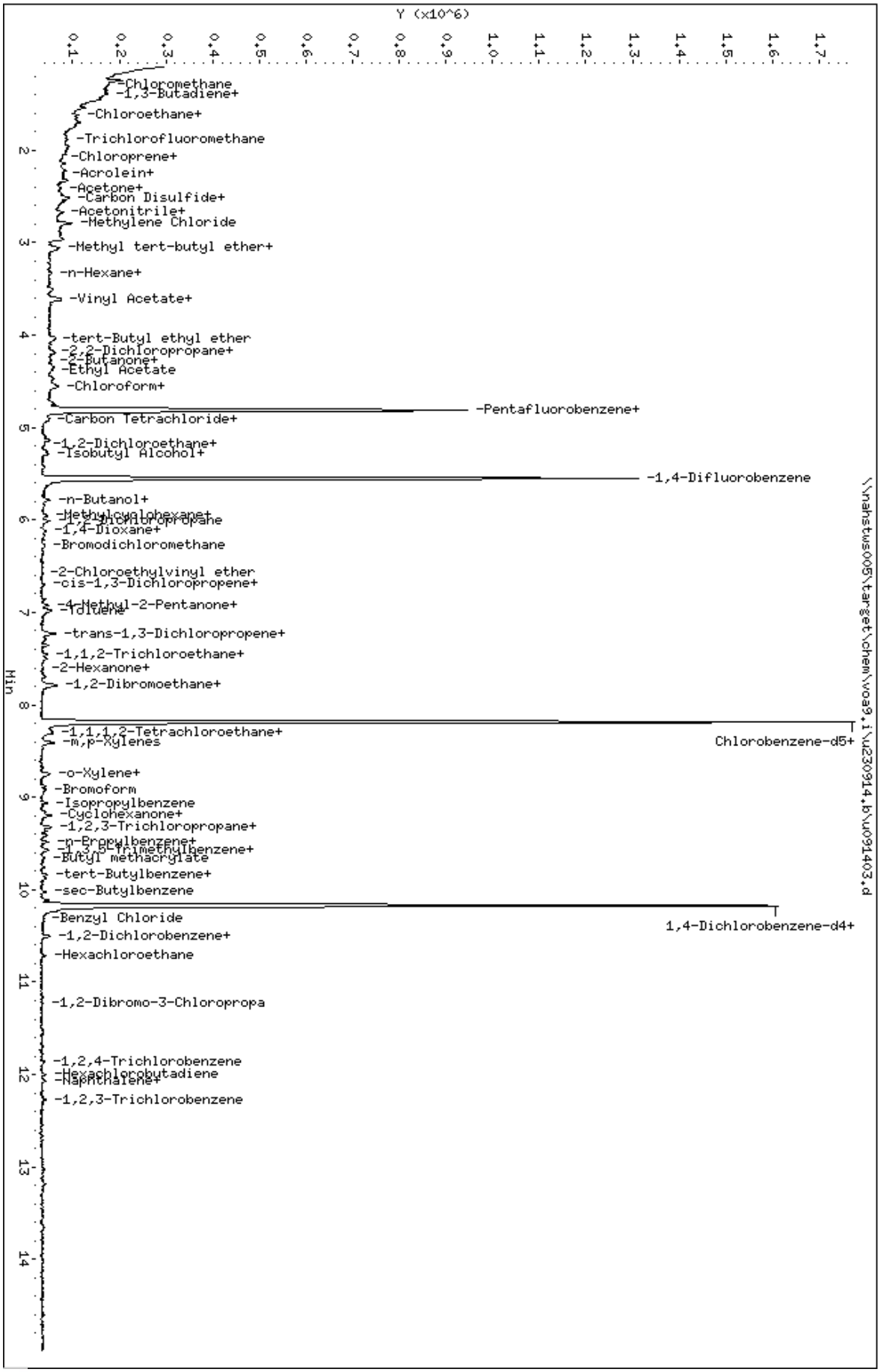
| | Compounds | QUANT SIG MASS | RT | EXP RT | REL RT | RESPONSE | AMOUNTS CAL-AMT ( ug/l) | ON-COL ( ug/l) |
|---|---|---|---|---|---|---|---|---|
| | 29 Bromochloromethane | 128 | 4.467 | 4.467 | (0.928) | 2041 | 0.50000 | 0.51(M) |
| $ | 30 Dibromofluoromethane | 113 | 4.744 | 4.744 | (0.986) | 3104 | 0.50000 | 0.73 |
| | 31 1,1,1-Trichloroethane | 97 | 4.733 | 4.733 | (0.984) | 4582 | 0.50000 | 0.52(M) |
| | 32 1,1-Dichloropropene | 75 | 4.916 | 4.916 | (0.886) | 4020 | 0.50000 | 0.50(M) |
| | 33 1,2-Dichloroethane | 62 | 5.175 | 5.175 | (0.932) | 5380 | 0.50000 | 0.55 |
| | 34 Carbon Tetrachloride | 117 | 4.905 | 4.905 | (0.884) | 3572 | 0.50000 | 0.50 |
| $ | 35 1,2-Dichloroethane-d4 | 65 | 5.096 | 5.096 | (1.059) | 4043 | 0.50000 | 0.46 |
| * | 36 1,4-Difluorobenzene | 114 | 5.550 | 5.550 | (1.000) | 994968 | 50.0000 | |
| | 37 Benzene | 78 | 5.138 | 5.138 | (0.926) | 14292 | 0.50000 | 0.57 |
| | 38 Trichloroethene | 130 | 5.782 | 5.782 | (1.042) | 3872 | 0.50000 | 0.53(M) |
| | 39 Bromodichloromethane | 83 | 6.277 | 6.277 | (1.131) | 4490 | 0.50000 | 0.55(M) |
| | 41 2-Chloroethylvinyl ether | 63 | 6.562 | 6.562 | (1.182) | 53 | 1.00000 | 1.98(M) |
| | 42 1,2-Dichloropropane | 63 | 6.011 | 6.011 | (1.083) | 3309 | 0.50000 | 0.50(M) |
| | 44 Dibromomethane | 93 | 6.120 | 6.120 | (1.103) | 2627 | 0.50000 | 0.57(M) |
| | 45 4-Methyl-2-Pentanone | 43 | 6.858 | 6.858 | (0.838) | 6101 | 1.00000 | 3.41 |
| | 46 cis-1,3-Dichloropropene | 75 | 6.693 | 6.693 | (1.206) | 4418 | 0.50000 | 3.56(M) |
| * | 47 Chlorobenzene-d5 | 117 | 8.185 | 8.185 | (1.000) | 913278 | 50.0000 | |
| $ | 48 Toluene-d8 | 98 | 6.922 | 6.922 | (0.846) | 11691 | 0.50000 | 0.58(M) |
| | 50 Toluene | 91 | 6.982 | 6.982 | (0.853) | 13250 | 0.50000 | 0.54(M) |
| | 51 trans-1,3-Dichloropropene | 75 | 7.203 | 7.203 | (1.298) | 3003 | 0.50000 | 2.74(M) |
| | 52 2-Hexanone | 43 | 7.600 | 7.600 | (0.929) | 3781 | 1.00000 | 0.91 |
| | 53 1,1,2-Trichloroethane | 83 | 7.357 | 7.357 | (0.899) | 3146 | 0.50000 | 0.58 |
| | 54 1,3-Dichloropropane | 76 | 7.499 | 7.499 | (0.916) | 5881 | 0.50000 | 0.54(M) |
| | 55 Dibromochloromethane | 129 | 7.687 | 7.687 | (0.939) | 3623 | 0.50000 | 0.56 |
| | 56 Tetrachloroethene | 164 | 7.458 | 7.458 | (0.911) | 3084 | 0.50000 | 0.53(M) |
| | 57 1,2-Dibromoethane | 107 | 7.792 | 7.792 | (0.952) | 3288 | 0.50000 | 0.51 |
| | 58 1-Chlorohexane | 55 | 8.193 | 8.193 | (1.476) | 3356 | 0.50000 | 0.55(M) |
| | 59 Chlorobenzene | 112 | 8.211 | 8.211 | (1.003) | 9716 | 0.50000 | 0.53 |
| | 60 1,1,1,2-Tetrachloroethane | 131 | 8.283 | 8.283 | (1.012) | 3364 | 0.50000 | 0.55 |
| | 61 Ethylbenzene | 106 | 8.309 | 8.309 | (1.015) | 4115 | 0.50000 | 0.50(M) |
| | 62 m,p-Xylenes | 106 | 8.410 | 8.410 | (1.027) | 9427 | 1.00000 | 0.92(M) |
| | 63 o-Xylene | 106 | 8.748 | 8.748 | (1.069) | 5517 | 0.50000 | 0.51(M) |
| | 64 Styrene | 104 | 8.766 | 8.766 | (1.071) | 8005 | 0.50000 | 0.49(M) |
| | 66 Bromoform | 173 | 8.916 | 8.916 | (1.089) | 2213 | 0.50000 | 3.99(T) |
| | 67 Isopropylbenzene | 105 | 9.062 | 9.062 | (1.107) | 12158 | 0.50000 | 1.95(M) |
| | 68 1,1,2,2-Tetrachloroethane | 83 | 9.329 | 9.329 | (0.917) | 4530 | 0.50000 | 0.55(M) |
| $ | 69 4-Bromofluorobenzene | 95 | 9.197 | 9.197 | (1.124) | 4793 | 0.50000 | 0.43(M) |
| * | 70 1,4-Dichlorobenzene-d4 | 152 | 10.172 | 10.172 | (1.000) | 420648 | 50.0000 | |
| | 71 1,2,3-Trichloropropane | 75 | 9.362 | 9.362 | (0.920) | 3897 | 0.50000 | 0.55 |
| | 73 n-Propylbenzene | 91 | 9.411 | 9.411 | (0.925) | 9893 | 0.50000 | 3.37(M) |
| | 74 Bromobenzene | 156 | 9.321 | 9.321 | (0.916) | 3486 | 0.50000 | 0.52(M) |
| | 75 1,3,5-Trimethylbenzene | 105 | 9.565 | 9.565 | (0.940) | 7718 | 0.50000 | 0.48(M) |
| | 76 2-Chlorotoluene | 91 | 9.486 | 9.486 | (0.933) | 7768 | 0.50000 | 0.49(M) |
| | 77 4-Chlorotoluene | 91 | 9.580 | 9.580 | (0.942) | 10329 | 0.50000 | 0.56(M) |
| | 78 tert-Butylbenzene | 119 | 9.838 | 9.838 | (0.967) | 7286 | 0.50000 | 0.47(M) |
| | 79 1,2,4-Trimethylbenzene | 105 | 9.880 | 9.880 | (0.971) | 8406 | 0.50000 | 0.51(M) |
| | 81 sec-Butylbenzene | 105 | 10.022 | 10.022 | (0.985) | 9443 | 0.50000 | 2.22(M) |
| | 82 p-Isopropyltoluene | 119 | 10.146 | 10.146 | (0.997) | 7845 | 0.50000 | 2.24(M) |
| | 83 1,3-Dichlorobenzene | 146 | 10.116 | 10.116 | (0.994) | 6938 | 0.50000 | 0.58 |
| | 84 1,4-Dichlorobenzene | 146 | 10.191 | 10.191 | (1.002) | 7315 | 0.50000 | 0.55(M) |
| | 87 n-Butylbenzene | 91 | 10.494 | 10.494 | (1.032) | 6875 | 0.50000 | 2.50(M) |
| | 88 1,2-Dichlorobenzene | 146 | 10.506 | 10.506 | (1.033) | 6709 | 0.50000 | 0.55 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 89 | 1,2-Dibromo-3-Chloropropane | 155 | 11.165 | 11.165 (1.098) | 527 | 0.50000 | 0.51(M) |
| 90 | 1,2,4-Trichlorobenzene | 180 | 11.863 | 11.863 (1.166) | 3346 | 0.50000 | 0.48(M) |

| | Compounds | QUANT SIG MASS | RT | EXP RT | REL RT | RESPONSE | AMOUNTS CAL-AMT ( ug/l) | ON-COL ( ug/l) |
|---|---|---|---|---|---|---|---|---|
| | 91 Hexachlorobutadiene | 225 | 12.001 | 12.001 | (1.180) | 1680 | 0.50000 | 0.54 |
| | 92 Naphthalene | 128 | 12.069 | 12.069 | (1.186) | 8877 | 0.50000 | 3.17(M) |
| | 93 1,2,3-Trichlorobenzene | 180 | 12.275 | 12.275 | (1.207) | 3377 | 0.50000 | 0.51 |
| M | 94 1,2-Dichloroethylene (total) | 96 | | | | 7385 | 1.00000 | |
| M | 95 Xylenes (total) | 106 | | | | 14944 | 1.50000 | |
| | 135 1,4-Dioxane | 88 | 6.176 | 6.176 | (1.284) | 1082 | 10.0000 | 11.64(M) |
| | 141 Cyclohexane | 56 | 4.785 | 4.785 | (0.995) | 4570 | 0.50000 | 1.06(M) |
| | 138 Freon TF | 101 | 2.334 | 2.334 | (0.485) | 3073 | 0.50000 | 0.75(M) |
| | 140 1,3-Butadiene | 54 | 1.396 | 1.396 | (0.290) | 3698 | 0.50000 | 0.48 |
| | 147 Methylcyclohexane | 55 | 5.951 | 5.951 | (1.072) | 7709 | 0.50000 | 0.52(M) |
| | 146 Methyl Acetate | 43 | 2.716 | 2.716 | (0.565) | 4575 | 0.50000 | 0.59(M) |

QC Flag Legend

T - Target compound detected outside RT window.
M - Compound response manually integrated.



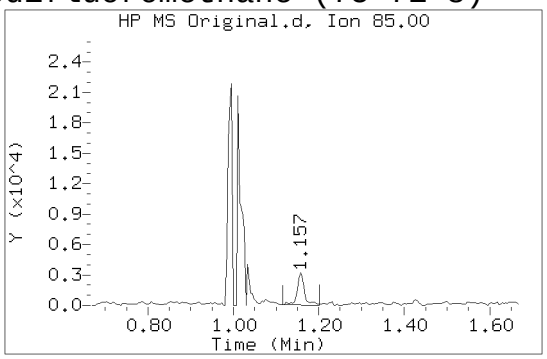

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Client ID: VSTD000.5
Sample Info: VSTD000,5;VSTD000,5;1;2;
Purge Volume: 5.0
Column phase: DB624

Instrument: VOA9,i
Operator: PC
Column diameter: 0.18

Data File : \\nahstws005\target\chem\voa9.i\u230914.b\u091403.d
Inj Date : 14-SEP-2023 16:09
InstruID : VOA9.i
LabSampID : VSTD000.5

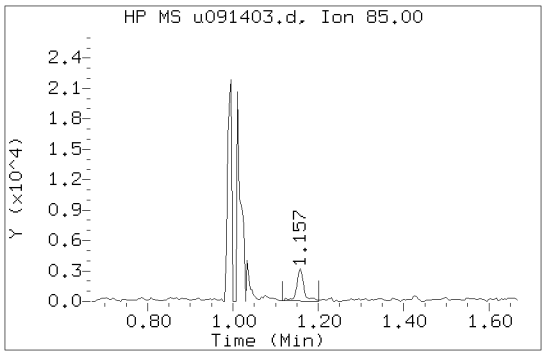
## Dichlorodifluoromethane (75-71-8)

BEFORE
MASS
85
AREA
3707
HEIGHT
3190
18-Sep-2023
12:30
linh
pham

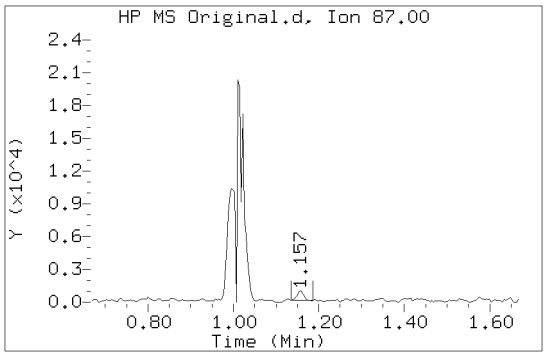



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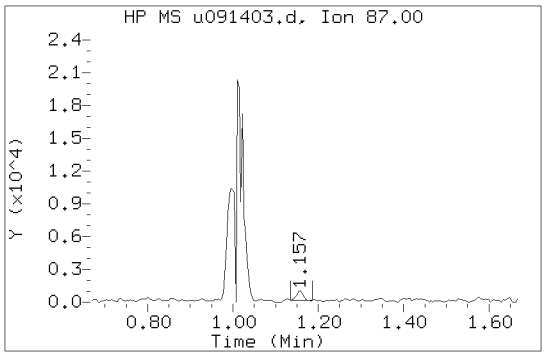
AFTER
MASS
85
AREA
3707
HEIGHT
3190
18-Sep-2023
12:30
linh
pham




BEFORE
MASS
87
AREA
975
HEIGHT
873
18-Sep-2023
12:30
linh
pham

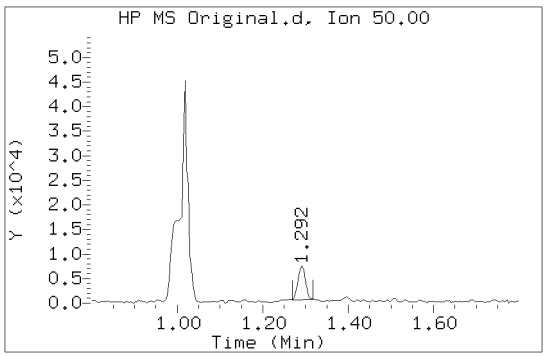



AFTER
MASS
87
AREA
975
HEIGHT
873
18-Sep-2023
12:30
linh
pham



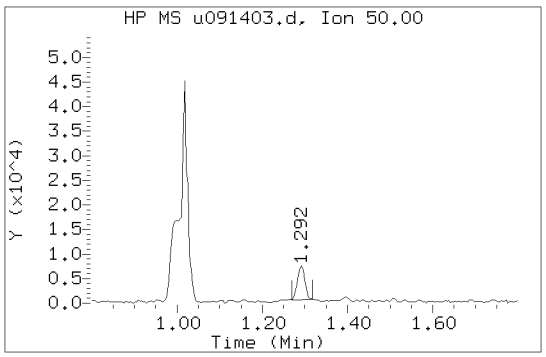

## Chloromethane (74-87-3)

BEFORE
MASS
50
AREA
8313
HEIGHT
6896
18-Sep-2023
12:30
linh
pham

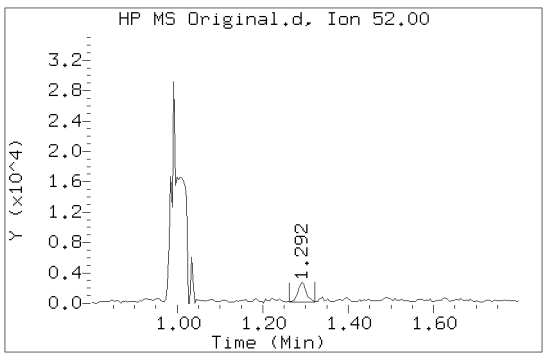



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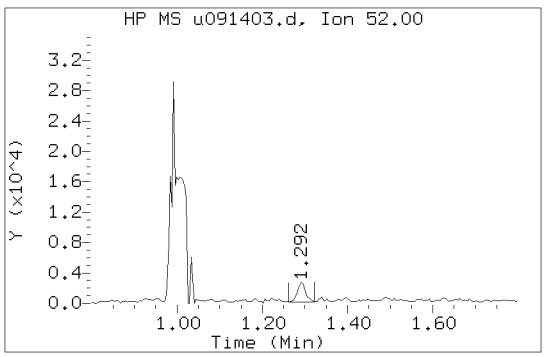
AFTER
MASS
50
AREA
8313
HEIGHT
6896
18-Sep-2023
12:30
linh
pham




BEFORE
MASS
52
AREA
3458
HEIGHT
2579
18-Sep-2023
12:30
linh
pham




AFTER
MASS
52
AREA
3458
HEIGHT
2579
18-Sep-2023
12:30
linh
pham



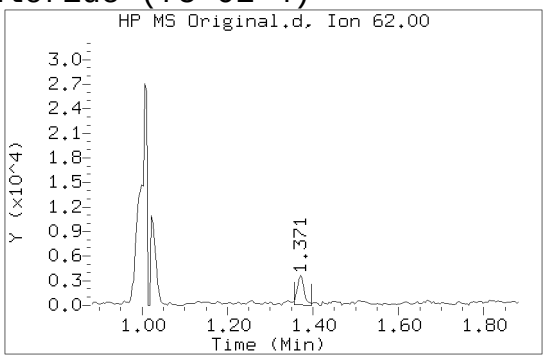
Data File : \\nahstws005\target\chem\voa9.i\u230914.b\u091403.d
Inj Date : 14-SEP-2023 16:09
InstruID : VOA9.i
LabSampID : VSTD000.5

## Vinyl Chloride (75-01-4)

Reason Code:

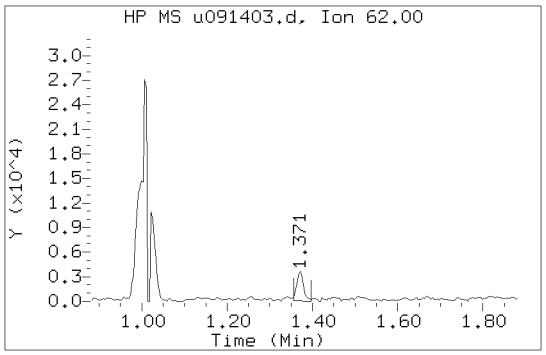
BEFORE

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62
AREA
4059
HEIGHT
3663
18-Sep-2023
12:30
linh
pham



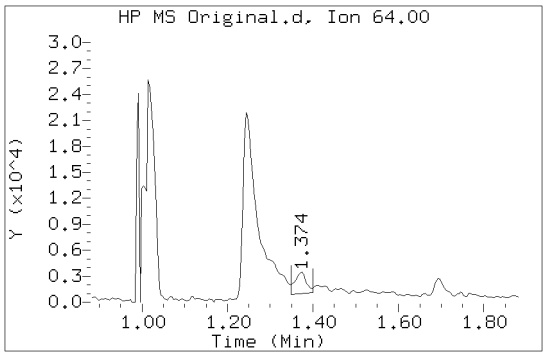

AFTER

MASS
62
AREA
4059
HEIGHT
3663
18-Sep-2023
12:30
linh
pham



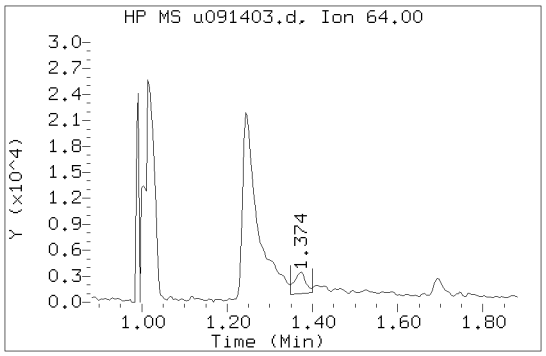

BEFORE

MASS
64
AREA
4882
HEIGHT
2472
18-Sep-2023
12:30
linh
pham




AFTER

MASS
64
AREA
4882
HEIGHT
2472
18-Sep-2023
12:30
linh
pham

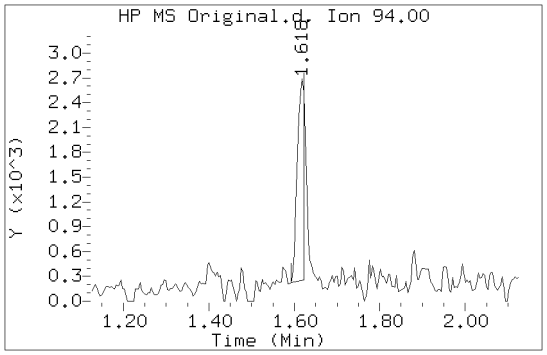



## Bromomethane (74-83-9)

Reason Code:

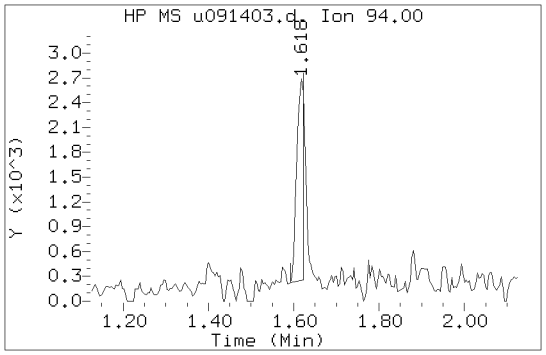
BEFORE

MASS
94
AREA
2668
HEIGHT
2436
18-Sep-2023
12:30
linh
pham



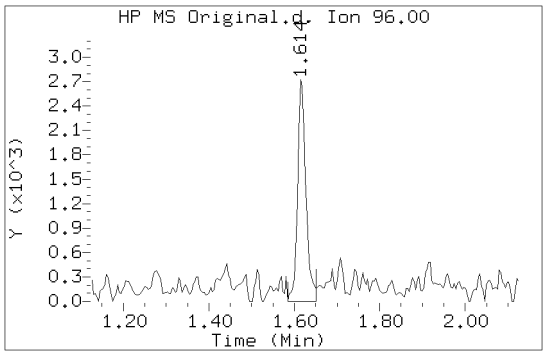

AFTER

MASS
94
AREA
2668
HEIGHT
2436
18-Sep-2023
12:30
linh
pham



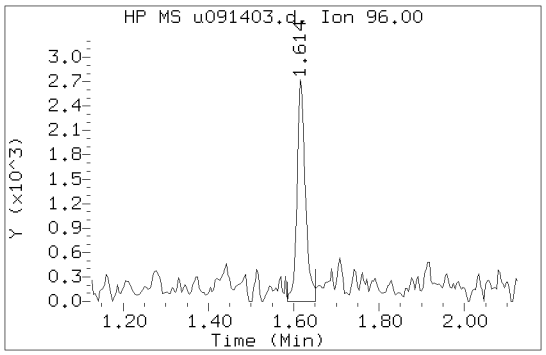

BEFORE

MASS
96
AREA
3711
HEIGHT
2724
18-Sep-2023
12:30
linh
pham




AFTER

MASS
96
AREA
3711
HEIGHT
2724
18-Sep-2023
12:30
linh
pham



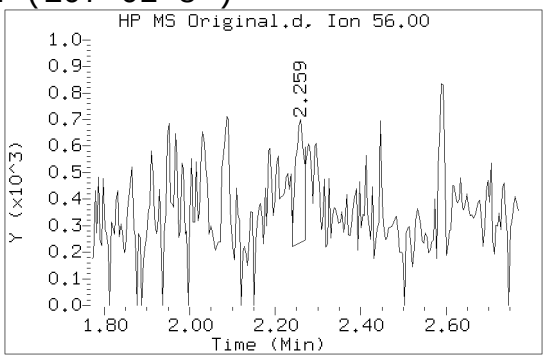
Data File : \\nahstws005\target\chem\voa9.i\u230914.b\u091403.d
Inj Date : 14-SEP-2023 16:09
InstruID : VOA9.i
LabSampID : VSTD000.5

## Acrolein (107-02-8 )

Reason Code:

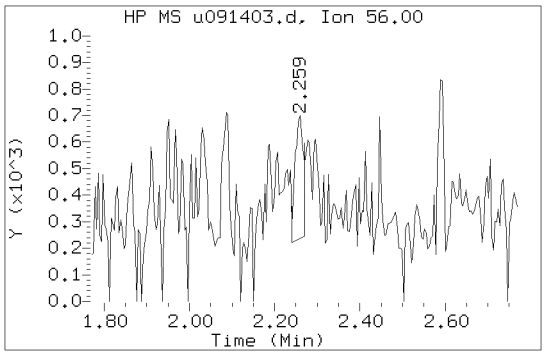
BEFORE

MASS
56
AREA
643
HEIGHT
463
18-Sep-2023
12:30
linh
pham



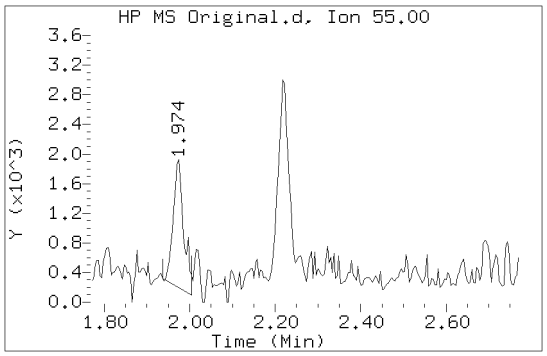

AFTER

MASS
56
AREA
643
HEIGHT
463
18-Sep-2023
12:30
linh
pham



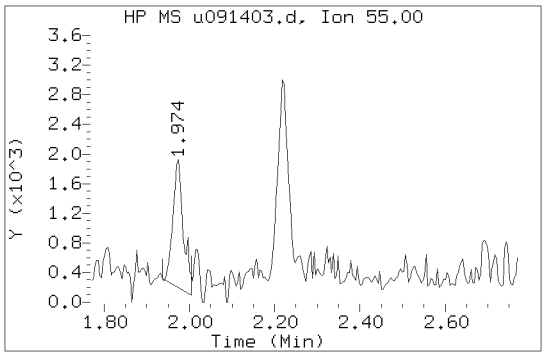

BEFORE

MASS
55
AREA
2936
HEIGHT
1730
18-Sep-2023
12:30
linh
pham




AFTER

MASS
55
AREA
2936
HEIGHT
1730
18-Sep-2023
12:30
linh
pham

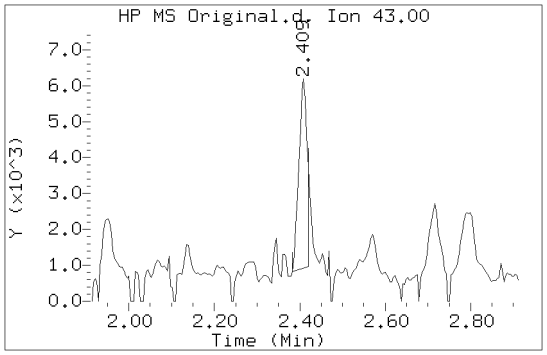



## Acetone (67-64-1)

Reason Code:

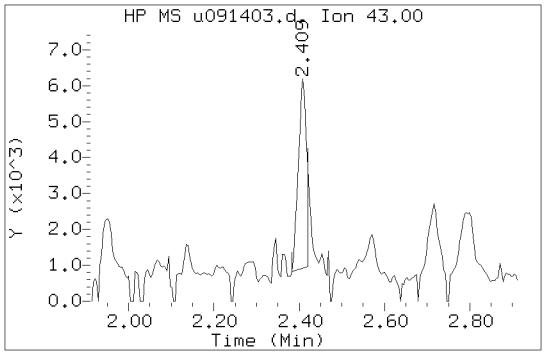
BEFORE

MASS
43
AREA
7172
HEIGHT
5265
18-Sep-2023
12:30
linh
pham



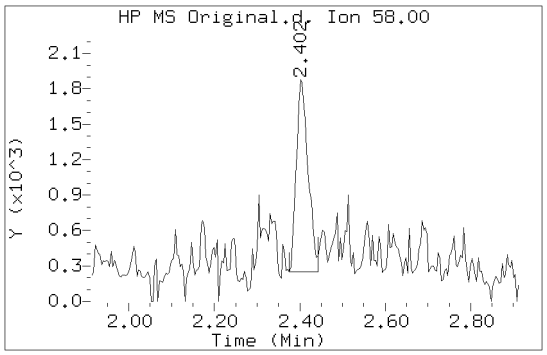

AFTER

MASS
43
AREA
7172
HEIGHT
5265
18-Sep-2023
12:30
linh
pham



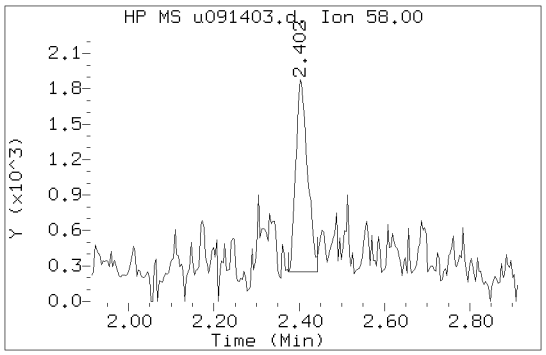

BEFORE

MASS
58
AREA
3174
HEIGHT
1628
18-Sep-2023
12:30
linh
pham




AFTER

MASS
58
AREA
3174
HEIGHT
1628
18-Sep-2023
12:30
linh
pham



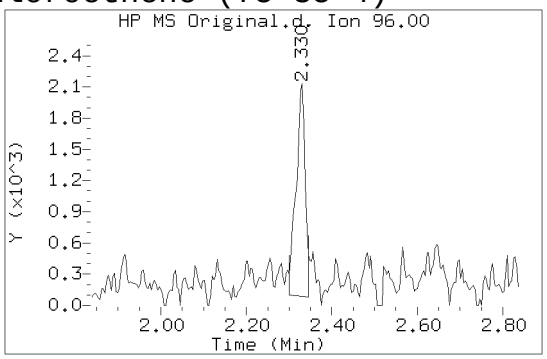
Data File : \\nahstws005\target\chem\voa9.i\u230914.b\u091403.d
Inj Date : 14-SEP-2023 16:09
InstruID : VOA9.i
LabSampID : VSTD000.5

## 1,1-Dichloroethene (75-35-4)

Reason Code:

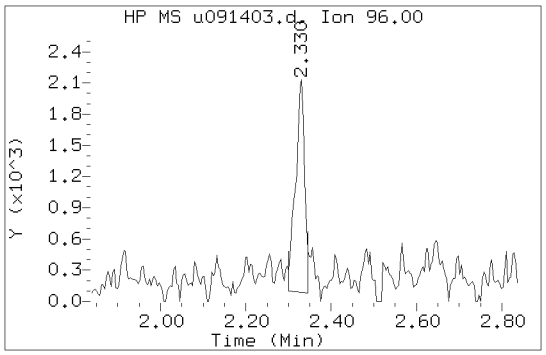
BEFORE

MASS
96
AREA
3071
HEIGHT
2046
18-Sep-2023
12:30
linh
pham



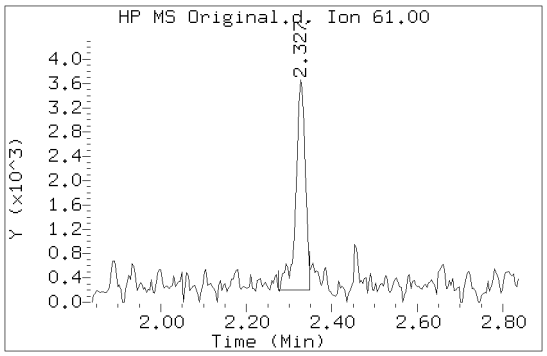

AFTER

MASS
96
AREA
3071
HEIGHT
2046
18-Sep-2023
12:30
linh
pham



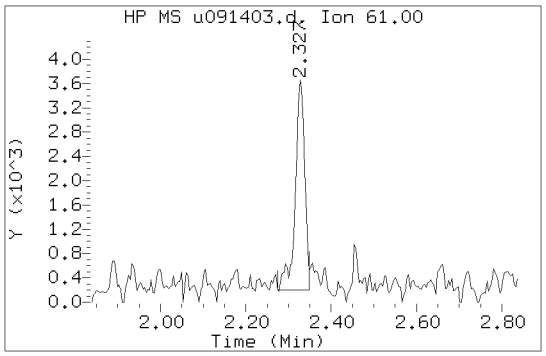

BEFORE

MASS
61
AREA
5392
HEIGHT
3461
18-Sep-2023
12:30
linh
pham



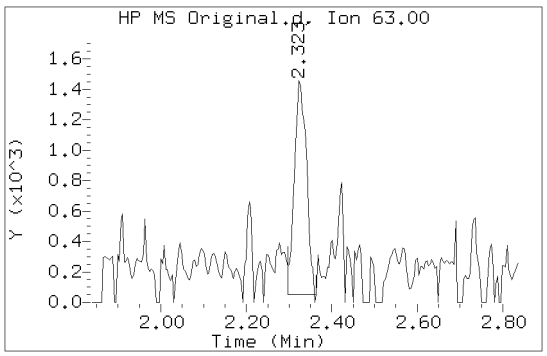

AFTER

MASS
61
AREA
5392
HEIGHT
3461
18-Sep-2023
12:30
linh
pham



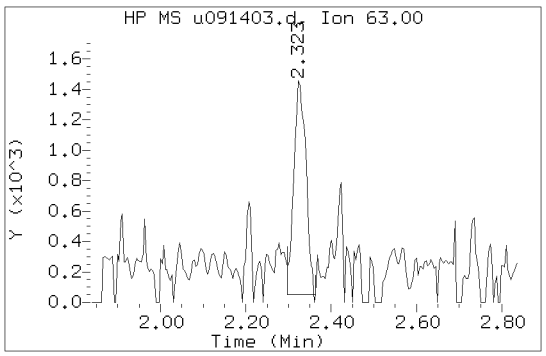

BEFORE

MASS
63
AREA
2803
HEIGHT
1406
18-Sep-2023
12:30
linh
pham




AFTER

MASS
63
AREA
2803
HEIGHT
1406
18-Sep-2023
12:30
linh
pham

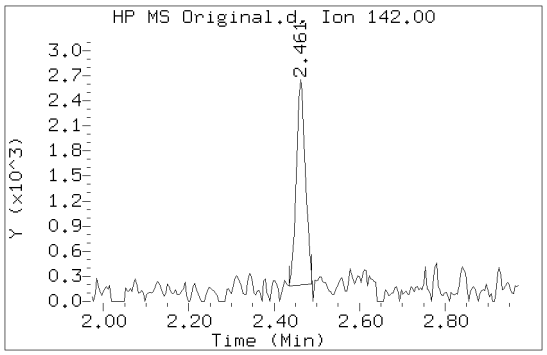



## Iodomethane (74-88-4)

Reason Code:

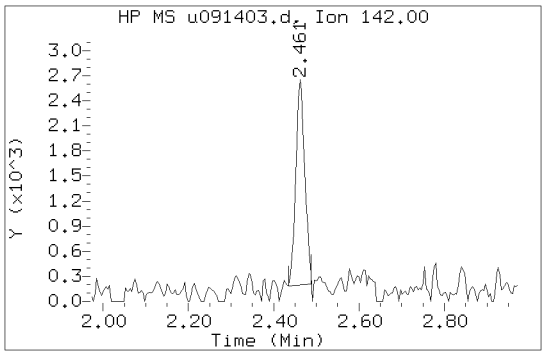
BEFORE

MASS
142
AREA
3691
HEIGHT
2458
18-Sep-2023
12:30
linh
pham




AFTER

MASS
142
AREA
3691
HEIGHT
2458
18-Sep-2023
12:30
linh
pham



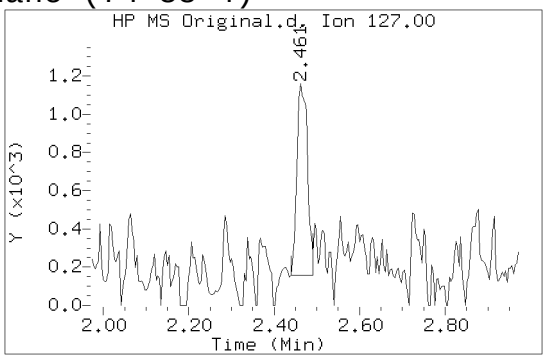
Data File : \\nahstws005\target\chem\voa9.i\u230914.b\u091403.d
Inj Date : 14-SEP-2023 16:09
InstruID : VOA9.i
LabSampID : VSTD000.5

## Iodomethane (74-88-4)

Reason Code:

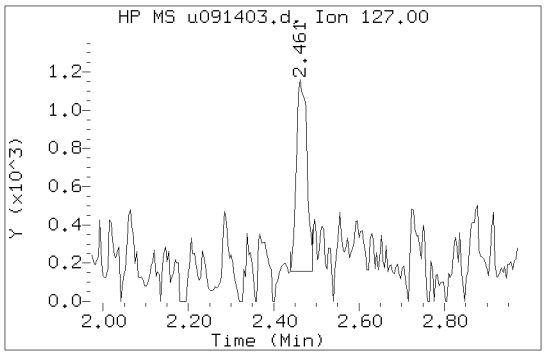
BEFORE

MASS
127
AREA
1758
HEIGHT
1002
18-Sep-2023
12:30
linh
pham



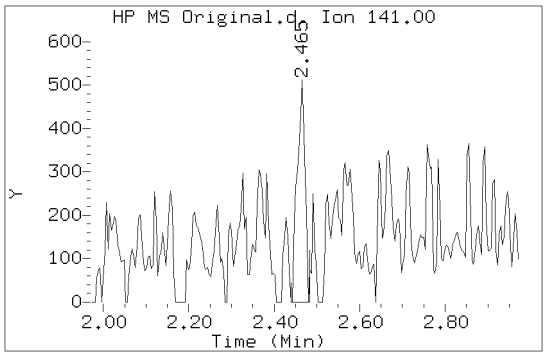

AFTER

MASS
127
AREA
1758
HEIGHT
1002
18-Sep-2023
12:30
linh
pham



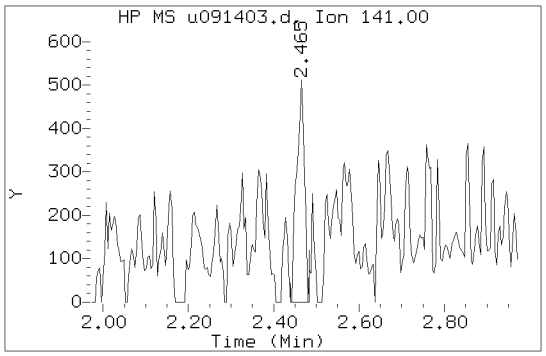

BEFORE

MASS
141
AREA
687
HEIGHT
512
18-Sep-2023
12:30
linh
pham




AFTER

MASS
141
AREA
687
HEIGHT
512
18-Sep-2023
12:30
linh
pham

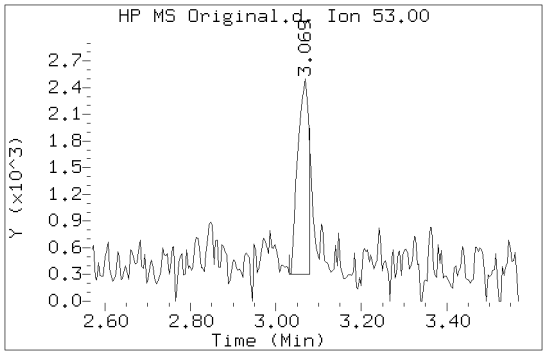



## Acrylonitrile (107-13-1)

Reason Code:

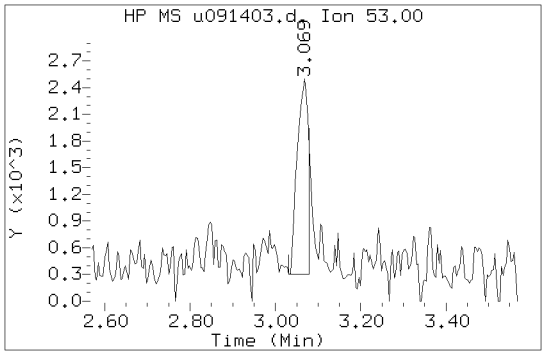
BEFORE

MASS
53
AREA
4051
HEIGHT
2195
18-Sep-2023
12:30
linh
pham



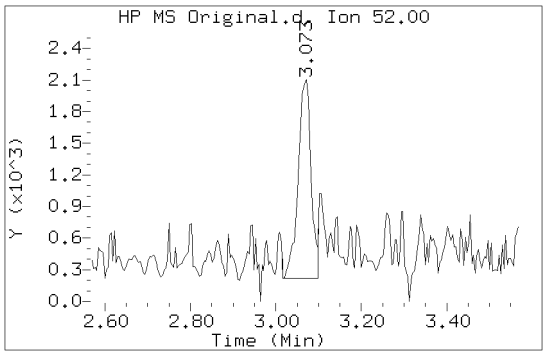

AFTER

MASS
53
AREA
4051
HEIGHT
2195
18-Sep-2023
12:30
linh
pham



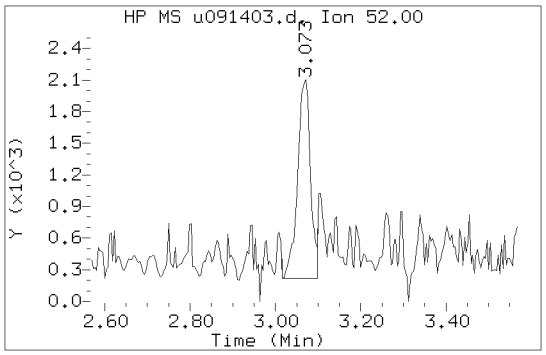

BEFORE

MASS
52
AREA
4049
HEIGHT
1884
18-Sep-2023
12:30
linh
pham




AFTER

MASS
52
AREA
4049
HEIGHT
1884
18-Sep-2023
12:30
linh
pham



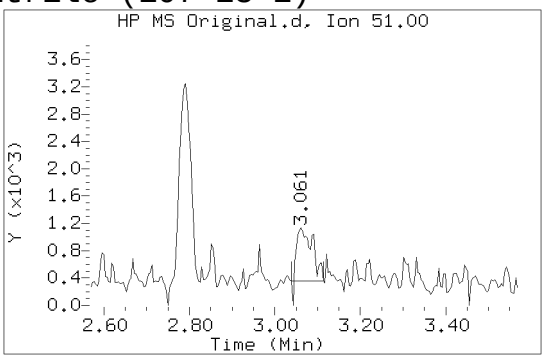
Data File : \\nahstws005\target\chem\voa9.i\u230914.b\u091403.d
Inj Date : 14-SEP-2023 16:09
InstruID : VOA9.i
LabSampID : VSTD000.5

## Acrylonitrile (107-13-1)

Reason Code:

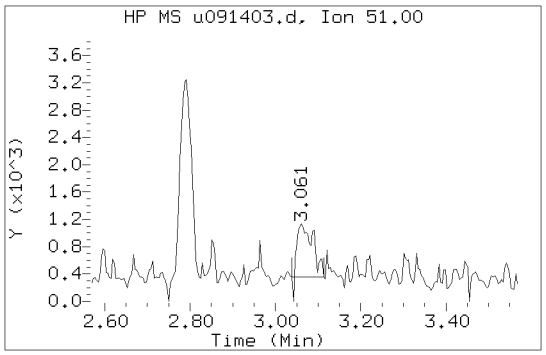
BEFORE

MASS
51
AREA
1987
HEIGHT
782
18-Sep-2023
12:30
linh
pham




AFTER

MASS
51
AREA
1987
HEIGHT
782
18-Sep-2023
12:30
linh
pham

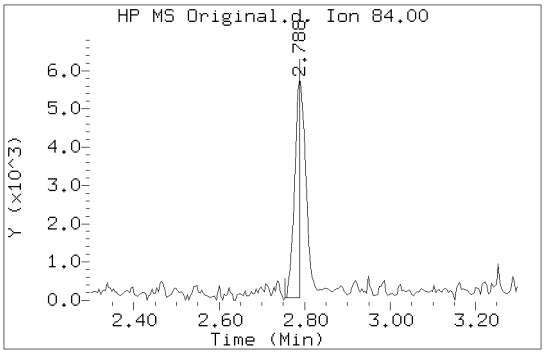



## Methylene Chloride (75-09-2)

Reason Code:

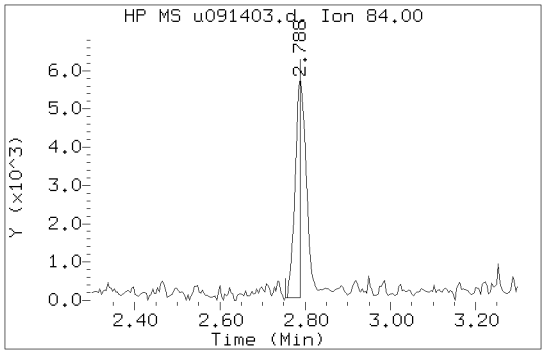
BEFORE

MASS
84
AREA
5165
HEIGHT
5730
18-Sep-2023
12:30
linh
pham



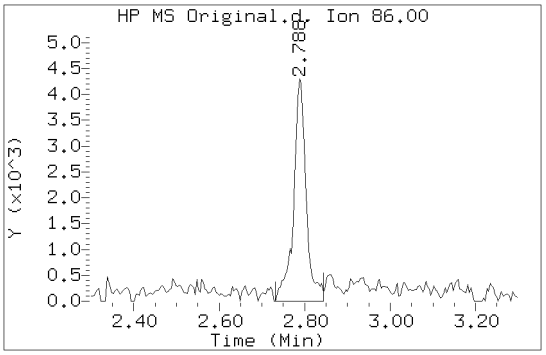

AFTER

MASS
84
AREA
5165
HEIGHT
5730
18-Sep-2023
12:30
linh
pham



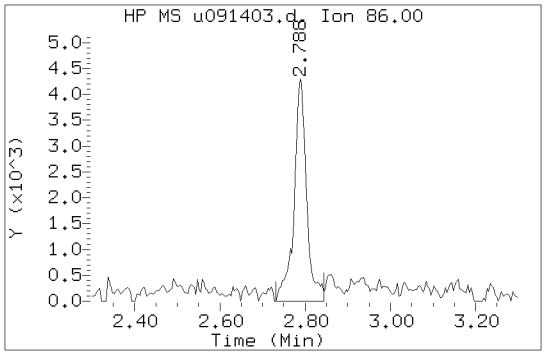

BEFORE

MASS
86
AREA
8962
HEIGHT
4299
18-Sep-2023
12:30
linh
pham



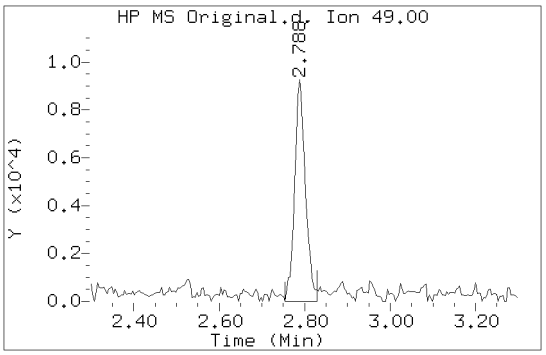

AFTER

MASS
86
AREA
8962
HEIGHT
4299
18-Sep-2023
12:30
linh
pham



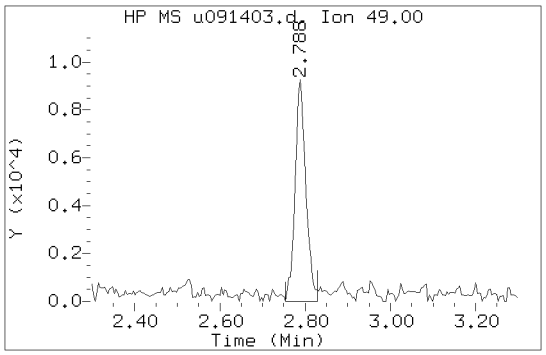

BEFORE

MASS
49
AREA
16630
HEIGHT
9267
18-Sep-2023
12:30
linh
pham




AFTER

MASS
49
AREA
16630
HEIGHT
9267
18-Sep-2023
12:30
linh
pham



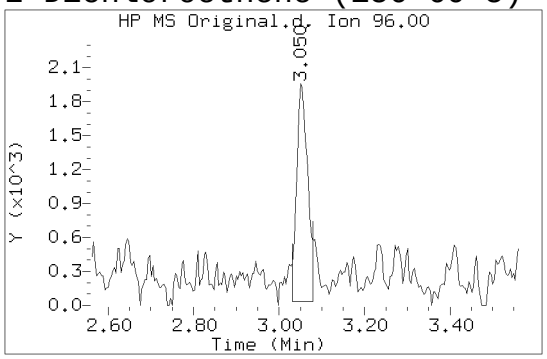
Data File : \\nahstws005\target\chem\voa9.i\u230914.b\u091403.d
Inj Date : 14-SEP-2023 16:09
InstruID : VOA9.i
LabSampID : VSTD000.5

## trans-1,2-Dichloroethene (156-60-5)

Reason Code:

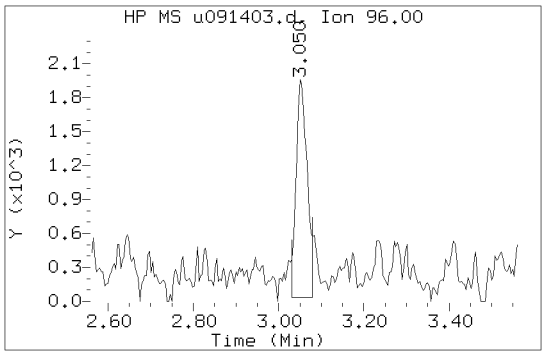
BEFORE

MASS
96
AREA
3543
HEIGHT
1925
18-Sep-2023
12:30
linh
pham



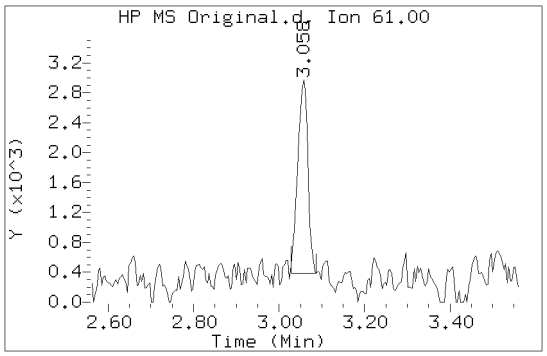

AFTER

MASS
96
AREA
3543
HEIGHT
1925
18-Sep-2023
12:30
linh
pham



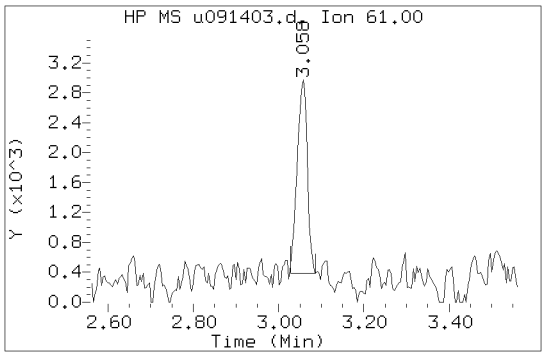

BEFORE

MASS
61
AREA
4316
HEIGHT
2583
18-Sep-2023
12:30
linh
pham



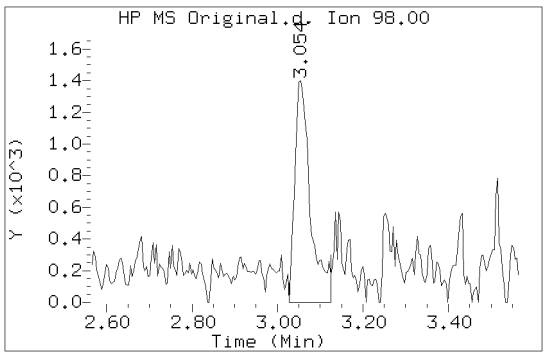

AFTER

MASS
61
AREA
4316
HEIGHT
2583
18-Sep-2023
12:30
linh
pham



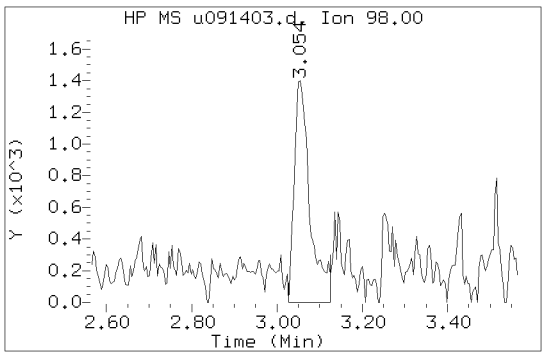

BEFORE

MASS
98
AREA
3586
HEIGHT
1400
18-Sep-2023
12:30
linh
pham




AFTER

MASS
98
AREA
3586
HEIGHT
1400
18-Sep-2023
12:30
linh
pham

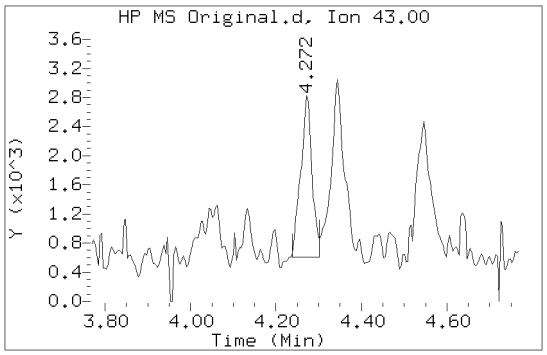



## 2-Butanone (78-93-3)

Reason Code:

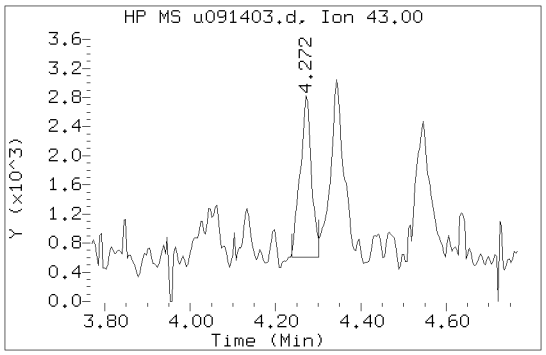
BEFORE

MASS
43
AREA
4163
HEIGHT
2215
18-Sep-2023
12:30
linh
pham




AFTER

MASS
43
AREA
4163
HEIGHT
2215
18-Sep-2023
12:30
linh
pham



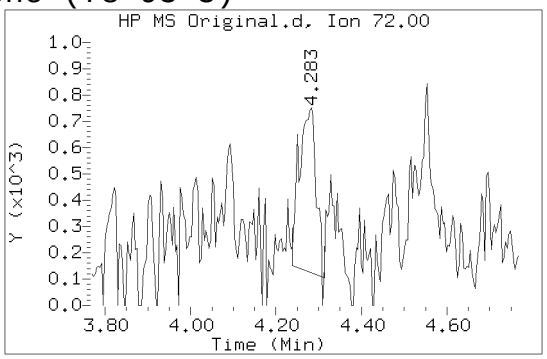
Data File : \\nahstws005\target\chem\voa9.i\u230914.b\u091403.d
Inj Date : 14-SEP-2023 16:09
InstruID : VOA9.i
LabSampID : VSTD000.5

## 2-Butanone (78-93-3)

Reason Code:

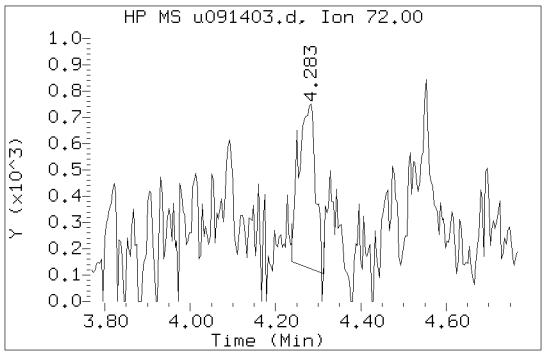
BEFORE

MASS
72
AREA
1704
HEIGHT
626
18-Sep-2023
12:30
linh
pham




AFTER

MASS
72
AREA
1704
HEIGHT
626
18-Sep-2023
12:30
linh
pham

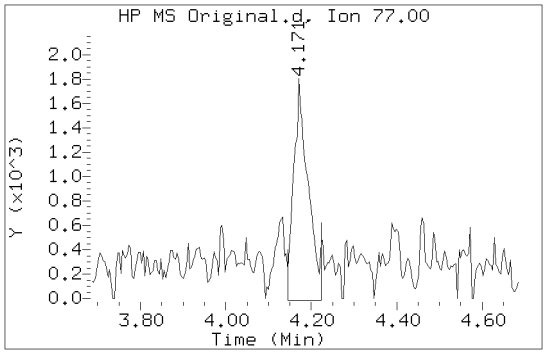



## 2,2-Dichloropropane (594-20-7)

Reason Code:

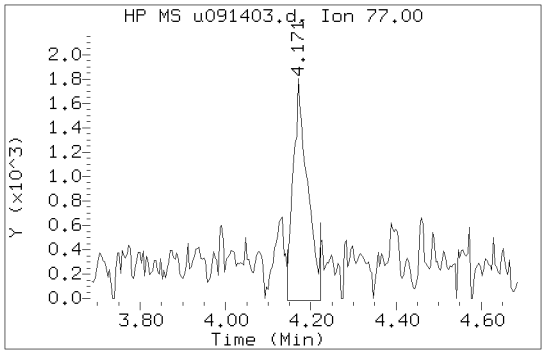
BEFORE

MASS
77
AREA
4335
HEIGHT
1818
18-Sep-2023
12:30
linh
pham



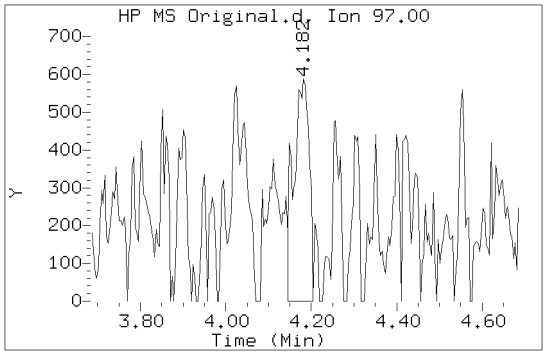

AFTER

MASS
77
AREA
4335
HEIGHT
1818
18-Sep-2023
12:30
linh
pham



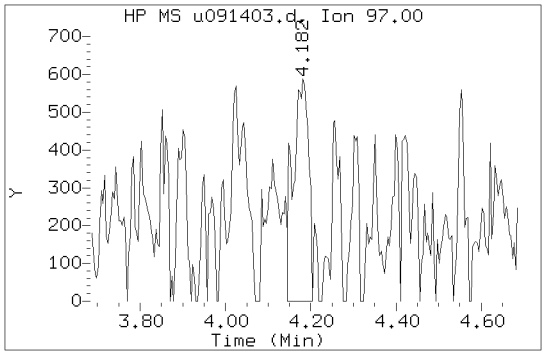

BEFORE

MASS
97
AREA
1521
HEIGHT
588
18-Sep-2023
12:30
linh
pham




AFTER

MASS
97
AREA
1521
HEIGHT
588
18-Sep-2023
12:30
linh
pham

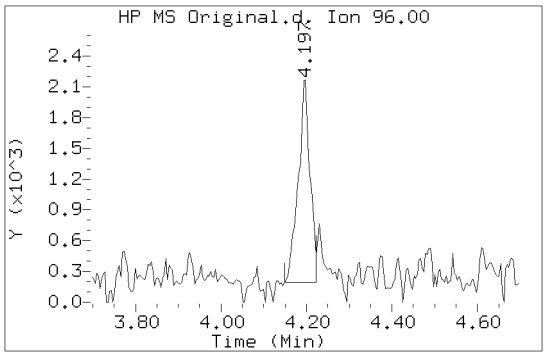



## cis-1,2-Dichloroethene (156-59-2)

Reason Code:

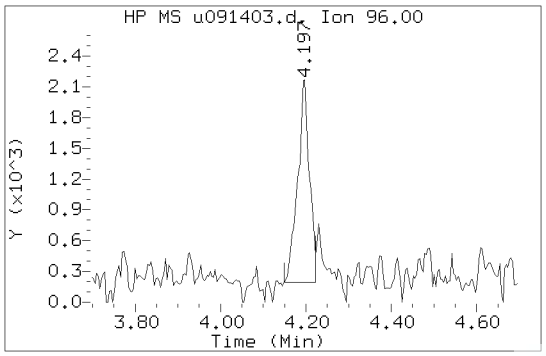
BEFORE

MASS
96
AREA
3842
HEIGHT
1975
18-Sep-2023
12:30
linh
pham




AFTER

MASS
96
AREA
3842
HEIGHT
1975
18-Sep-2023
12:30
linh
pham



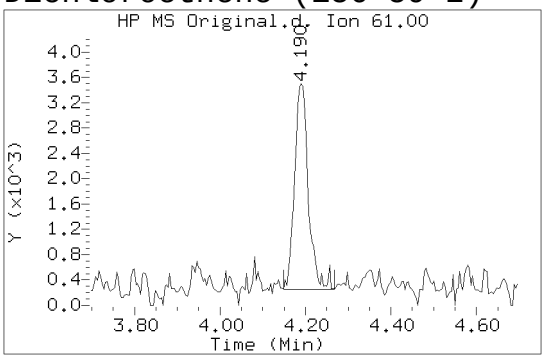
Data File : \\nahstws005\target\chem\voa9.i\u230914.b\u091403.d
Inj Date : 14-SEP-2023 16:09
InstruID : VOA9.i
LabSampID : VSTD000.5

## cis-1,2-Dichloroethene (156-59-2)

Reason Code:

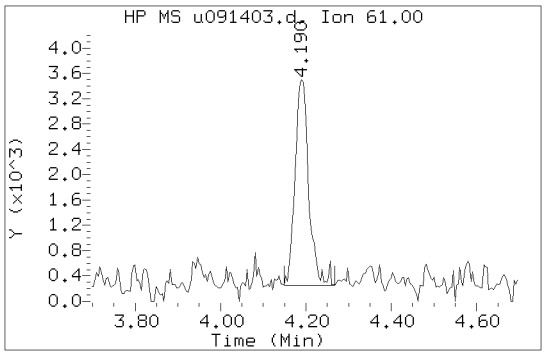
BEFORE

MASS
61
AREA
7338
HEIGHT
3252
18-Sep-2023
12:30
linh
pham



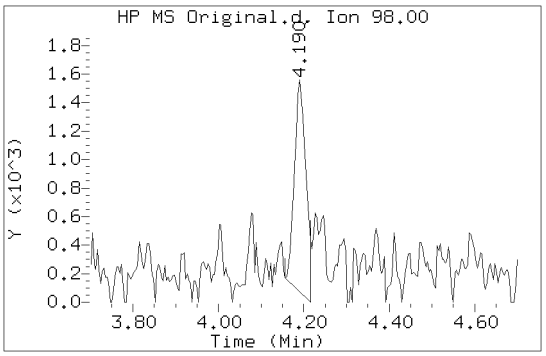

AFTER

MASS
61
AREA
7338
HEIGHT
3252
18-Sep-2023
12:30
linh
pham



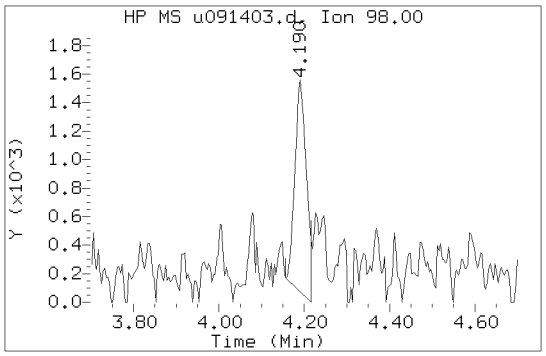

BEFORE

MASS
98
AREA
2809
HEIGHT
1484
18-Sep-2023
12:30
linh
pham




AFTER

MASS
98
AREA
2809
HEIGHT
1484
18-Sep-2023
12:30
linh
pham

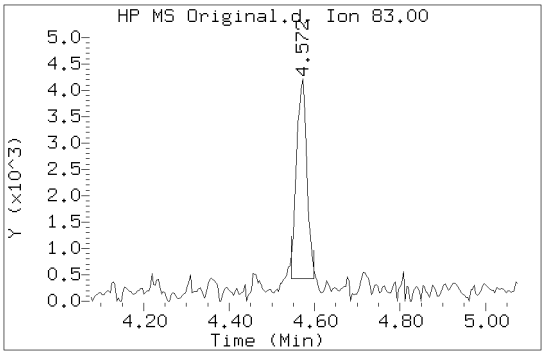



## Chloroform (67-66-3)

Reason Code:

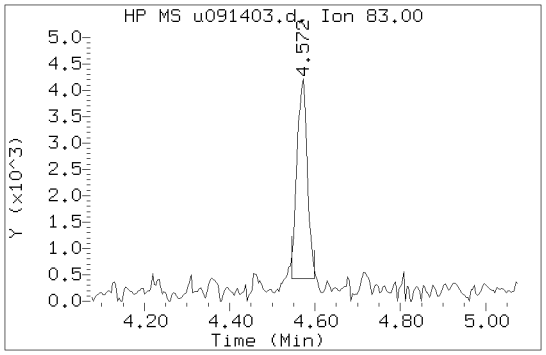
BEFORE

MASS
83
AREA
6484
HEIGHT
3793
18-Sep-2023
12:30
linh
pham



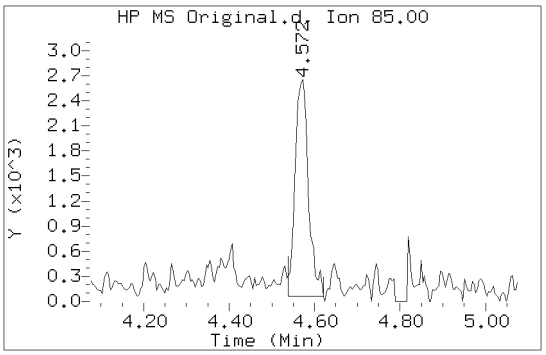

AFTER

MASS
83
AREA
6484
HEIGHT
3793
18-Sep-2023
12:30
linh
pham



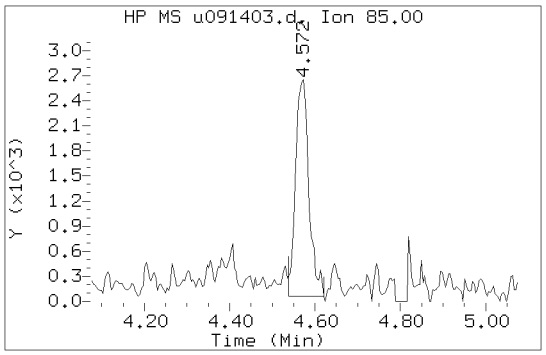

BEFORE

MASS
85
AREA
5687
HEIGHT
2588
18-Sep-2023
12:30
linh
pham




AFTER

MASS
85
AREA
5687
HEIGHT
2588
18-Sep-2023
12:30
linh
pham



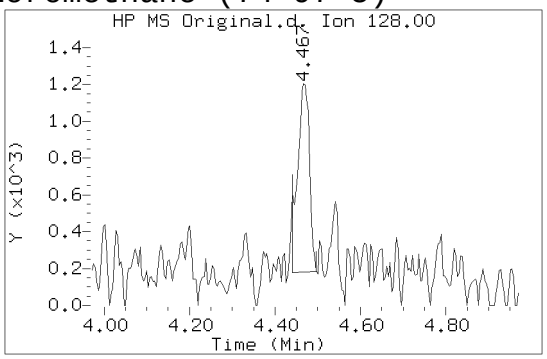
Data File : \\nahstws005\target\chem\voa9.i\u230914.b\u091403.d
Inj Date : 14-SEP-2023 16:09
InstruID : VOA9.i
LabSampID : VSTD000.5

## Bromochloromethane (74-97-5)

Reason Code:

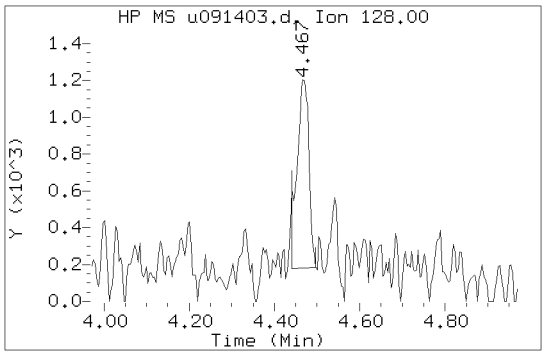
BEFORE

MASS
128
AREA
2041
HEIGHT
1023
18-Sep-2023
12:30
linh
pham



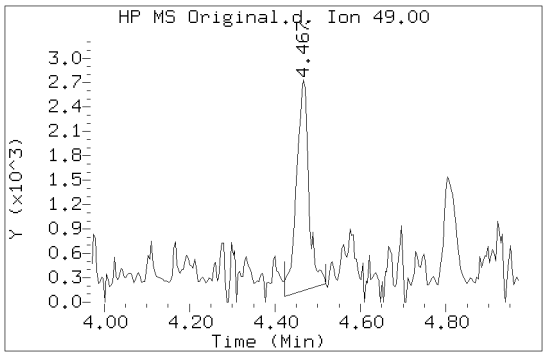

AFTER

MASS
128
AREA
2041
HEIGHT
1023
18-Sep-2023
12:30
linh
pham



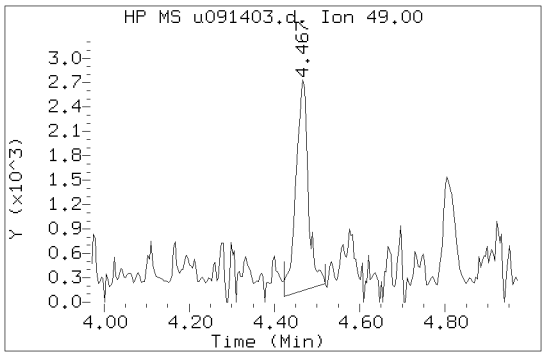

BEFORE

MASS
49
AREA
5348
HEIGHT
2591
18-Sep-2023
12:30
linh
pham



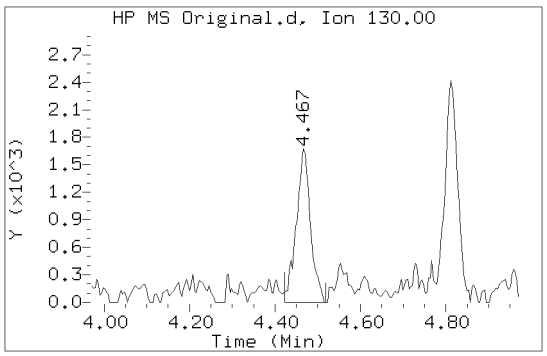

AFTER

MASS
49
AREA
5348
HEIGHT
2591
18-Sep-2023
12:30
linh
pham



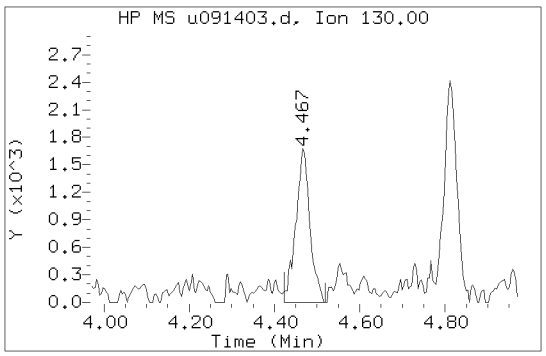

BEFORE

MASS
130
AREA
3935
HEIGHT
1676
18-Sep-2023
12:30
linh
pham




AFTER

MASS
130
AREA
3935
HEIGHT
1676
18-Sep-2023
12:30
linh
pham

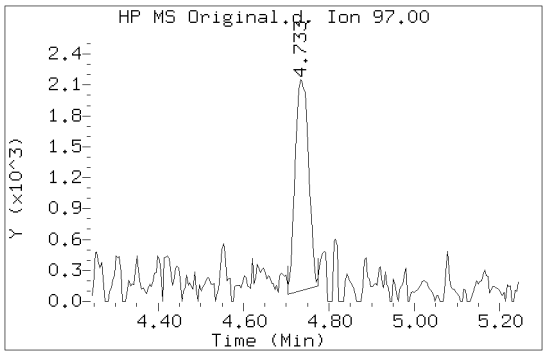



## 1,1,1-Trichloroethane (71-55-6)

Reason Code:

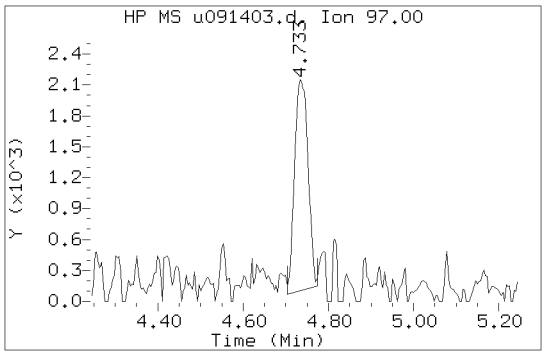
BEFORE

MASS
97
AREA
4582
HEIGHT
2046
18-Sep-2023
12:30
linh
pham




AFTER

MASS
97
AREA
4582
HEIGHT
2046
18-Sep-2023
12:30
linh
pham



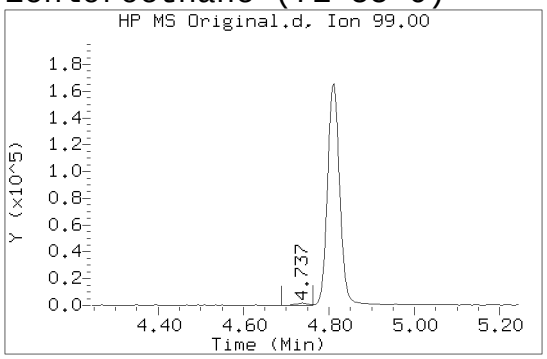
Data File : \\nahstws005\target\chem\voa9.i\u230914.b\u091403.d
Inj Date : 14-SEP-2023 16:09
InstruID : VOA9.i
LabSampID : VSTD000.5

## 1,1,1-Trichloroethane (71-55-6)

Reason Code:

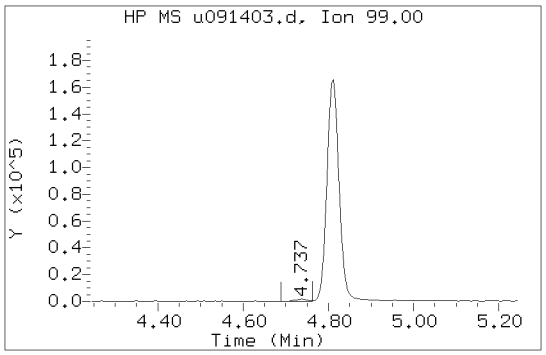
BEFORE

MASS
99
AREA
3449
HEIGHT
1683
18-Sep-2023
12:30
linh
pham



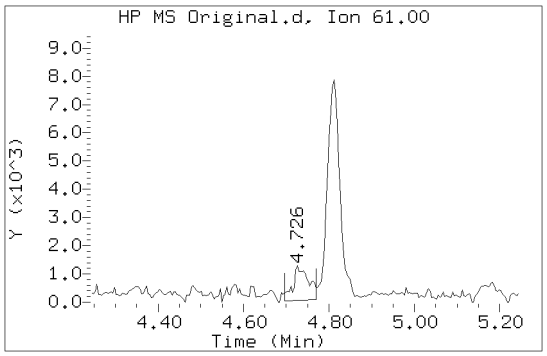

AFTER

MASS
99
AREA
3449
HEIGHT
1683
18-Sep-2023
12:30
linh
pham



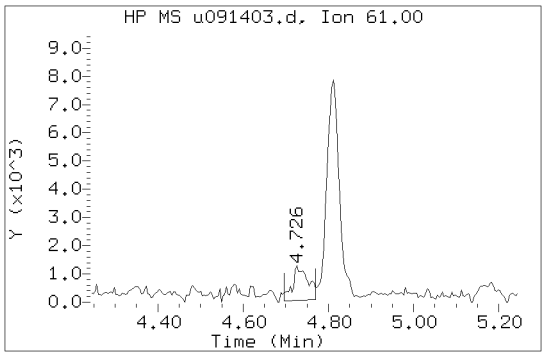

BEFORE

MASS
61
AREA
3147
HEIGHT
1220
18-Sep-2023
12:30
linh
pham




AFTER

MASS
61
AREA
3147
HEIGHT
1220
18-Sep-2023
12:30
linh
pham

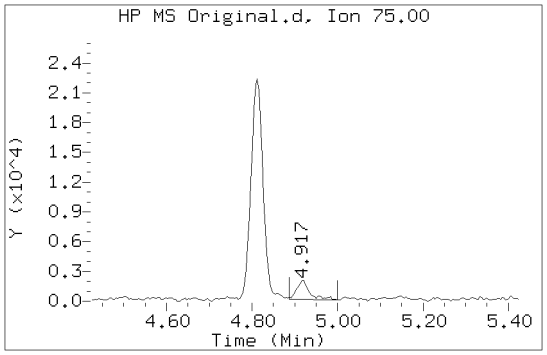



## 1,1-Dichloropropene (563-58-6)

Reason Code:

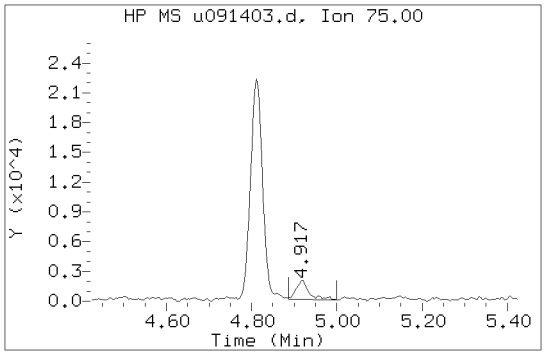
BEFORE

MASS
75
AREA
4020
HEIGHT
1887
18-Sep-2023
12:30
linh
pham



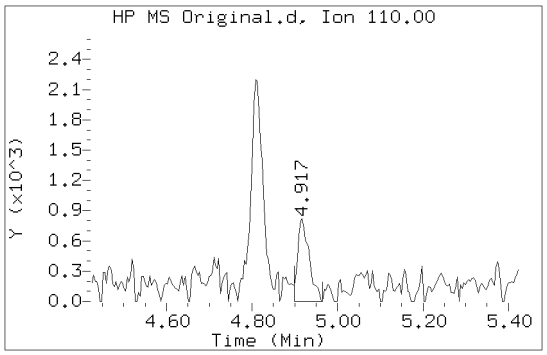

AFTER

MASS
75
AREA
4020
HEIGHT
1887
18-Sep-2023
12:30
linh
pham



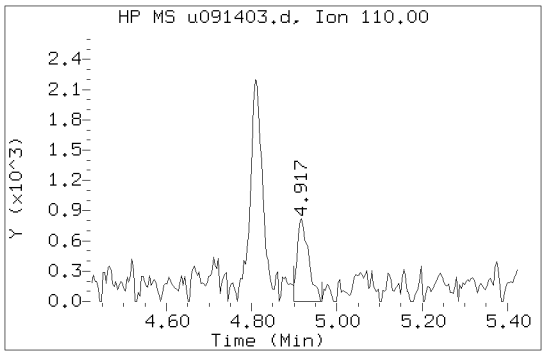

BEFORE

MASS
110
AREA
1559
HEIGHT
820
18-Sep-2023
12:30
linh
pham




AFTER

MASS
110
AREA
1559
HEIGHT
820
18-Sep-2023
12:30
linh
pham



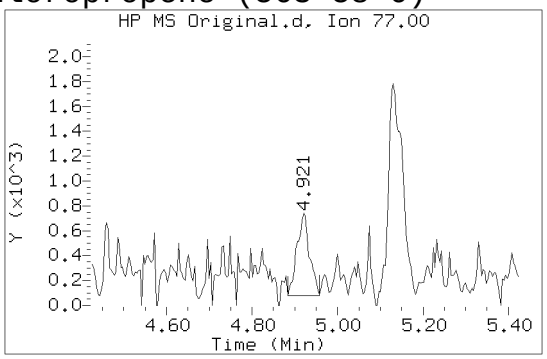
Data File : \\nahstws005\target\chem\voa9.i\u230914.b\u091403.d
Inj Date : 14-SEP-2023 16:09
InstruID : VOA9.i
LabSampID : VSTD000.5

## 1,1-Dichloropropene (563-58-6)

Reason Code:

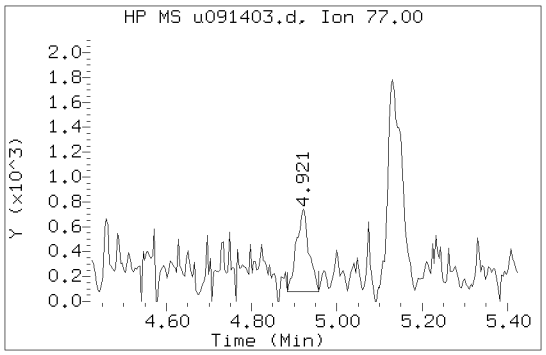
**BEFORE**

MASS
77
AREA
1366
HEIGHT
664
18-Sep-2023
12:30
linh
pham




**AFTER**

MASS
77
AREA
1366
HEIGHT
664
18-Sep-2023
12:30
linh
pham

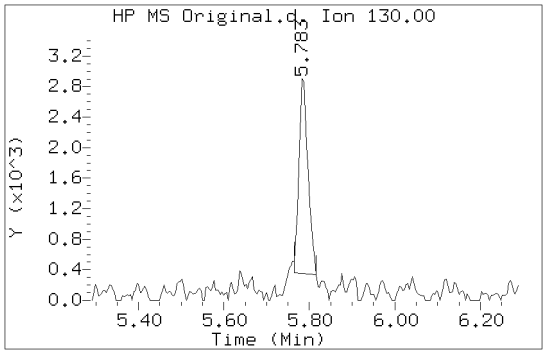



## Trichloroethene (79-01-6)

Reason Code:

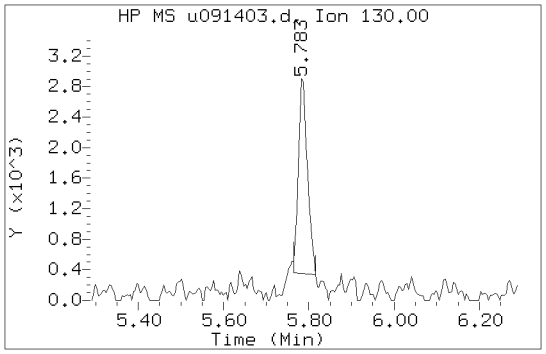
**BEFORE**

MASS
130
AREA
3872
HEIGHT
2551
18-Sep-2023
12:30
linh
pham



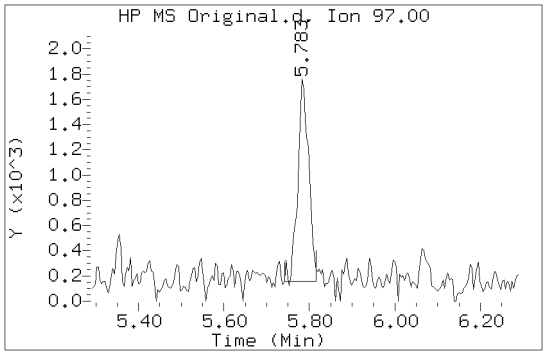

**AFTER**

MASS
130
AREA
3872
HEIGHT
2551
18-Sep-2023
12:30
linh
pham



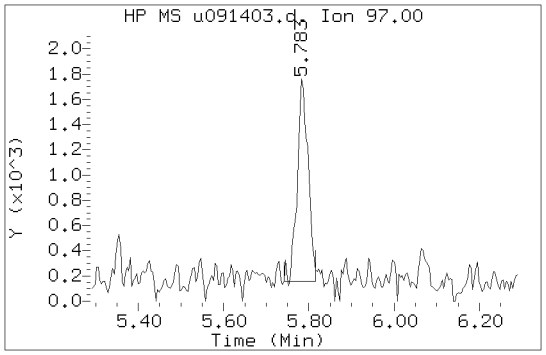

**BEFORE**

MASS
97
AREA
2892
HEIGHT
1606
18-Sep-2023
12:30
linh
pham



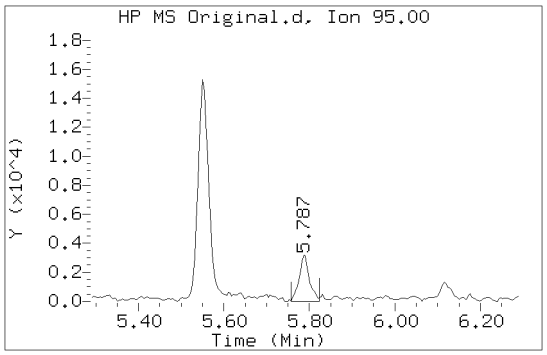

**AFTER**

MASS
97
AREA
2892
HEIGHT
1606
18-Sep-2023
12:30
linh
pham



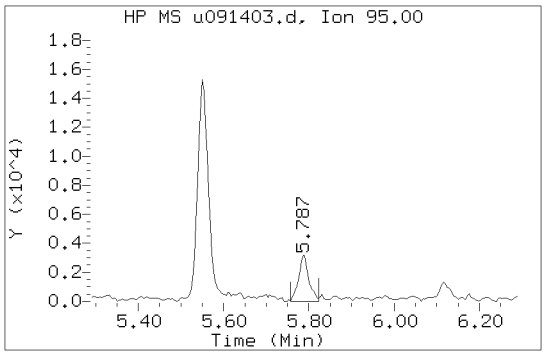

**BEFORE**

MASS
95
AREA
5465
HEIGHT
3194
18-Sep-2023
12:30
linh
pham




**AFTER**

MASS
95
AREA
5465
HEIGHT
3194
18-Sep-2023
12:30
linh
pham



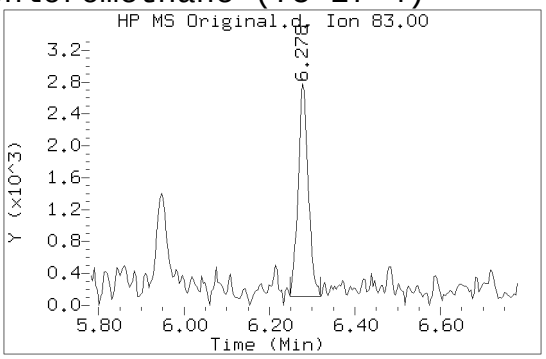
Data File : \\nahstws005\target\chem\voa9.i\u230914.b\u091403.d
Inj Date : 14-SEP-2023 16:09
InstruID : VOA9.i
LabSampID : VSTD000.5

## Bromodichloromethane (75-27-4)

Reason Code:

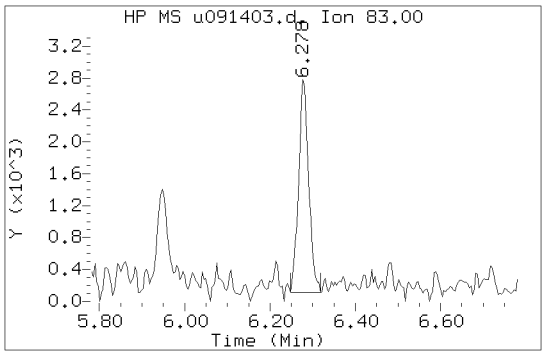
BEFORE

MASS
83
AREA
4490
HEIGHT
2669
18-Sep-2023
12:30
linh
pham



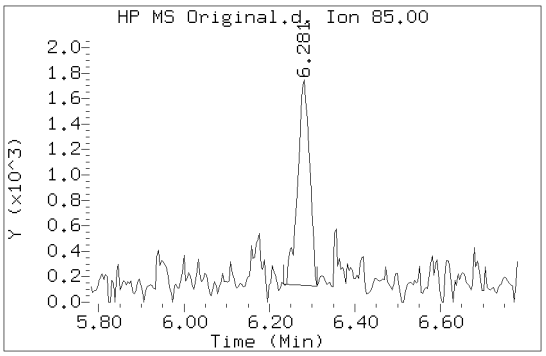

AFTER

MASS
83
AREA
4490
HEIGHT
2669
18-Sep-2023
12:30
linh
pham



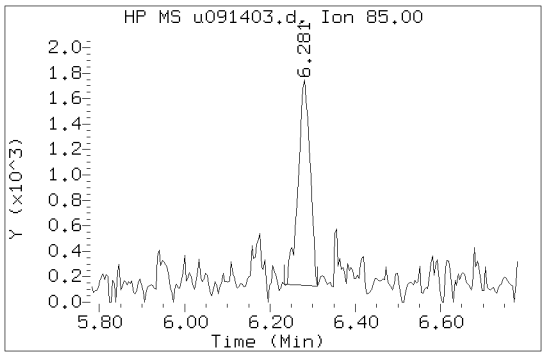

BEFORE

MASS
85
AREA
3201
HEIGHT
1615
18-Sep-2023
12:30
linh
pham



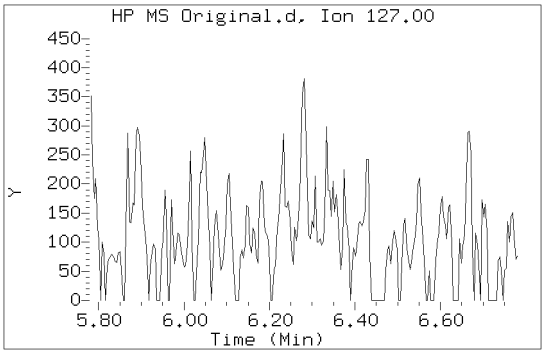

AFTER

MASS
85
AREA
3201
HEIGHT
1615
18-Sep-2023
12:30
linh
pham



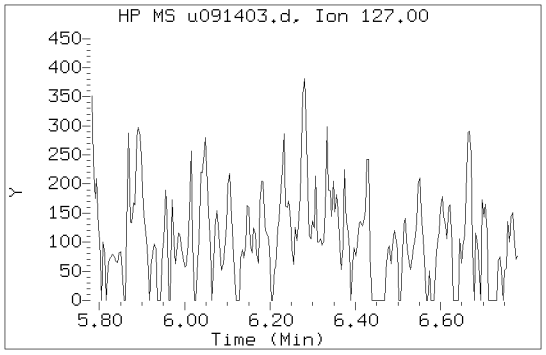

BEFORE

MASS
127
AREA
0
HEIGHT
0
18-Sep-2023
12:30
linh
pham




AFTER

MASS
127
AREA
0
HEIGHT
0
18-Sep-2023
12:30
linh
pham

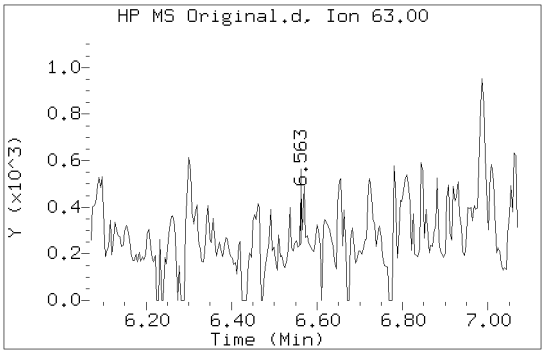



## 2-Chloroethylvinyl ether (110-75-8)

Reason Code:

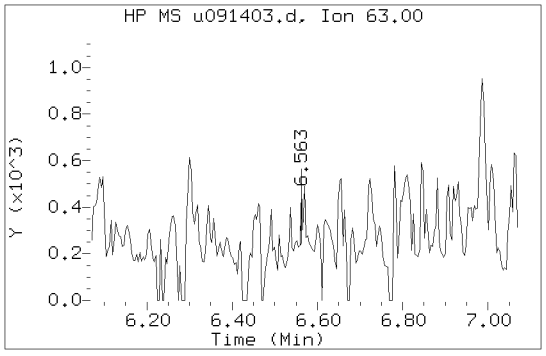
BEFORE

MASS
63
AREA
53
HEIGHT
239
18-Sep-2023
12:30
linh
pham




AFTER

MASS
63
AREA
53
HEIGHT
239
18-Sep-2023
12:30
linh
pham

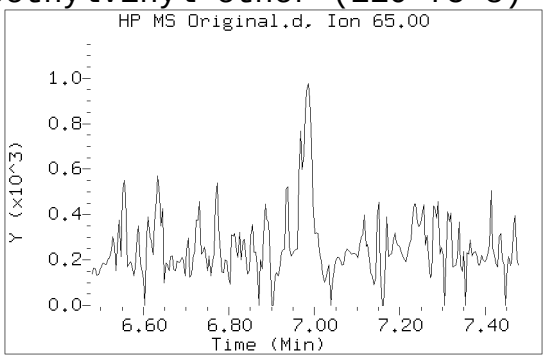


Data File : \\nahstws005\target\chem\voa9.i\u230914.b\u091403.d
Inj Date : 14-SEP-2023 16:09
InstruID : VOA9.i
LabSampID : VSTD000.5

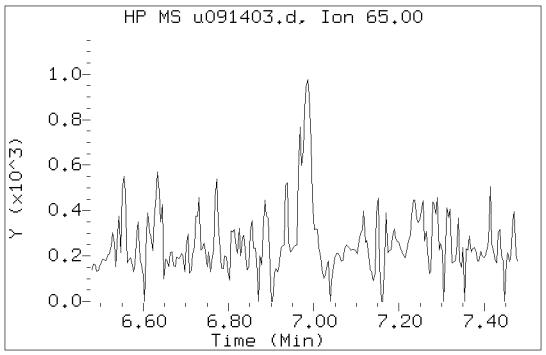
## 2-Chloroethylvinyl ether (110-75-8)

Reason Code:

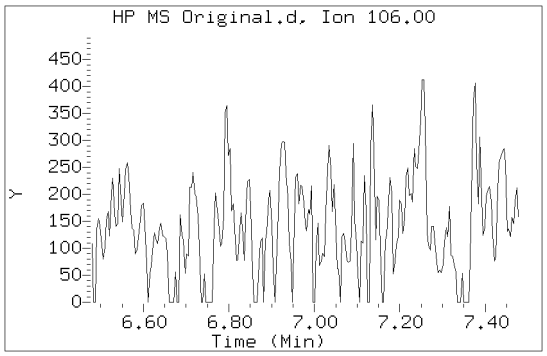
BEFORE
MASS
65
AREA
0
HEIGHT
0
18-Sep-2023
12:30
linh
pham



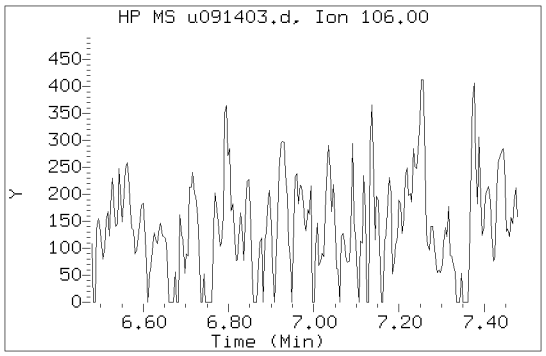

AFTER
MASS
65
AREA
0
HEIGHT
0
18-Sep-2023
12:30
linh
pham




BEFORE
MASS
106
AREA
0
HEIGHT
0
18-Sep-2023
12:30
linh
pham



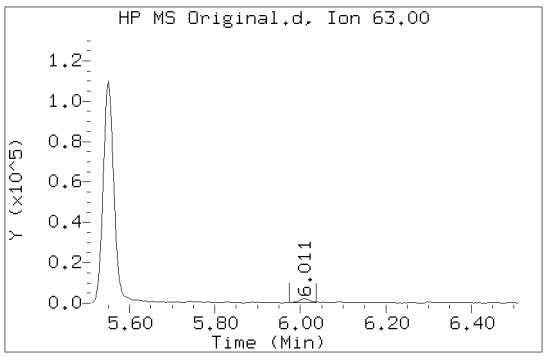

AFTER
MASS
106
AREA
0
HEIGHT
0
18-Sep-2023
12:30
linh
pham



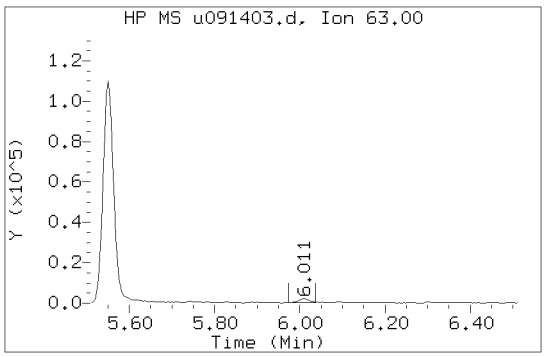

## 1,2-Dichloropropane (78-87-5)

Reason Code:

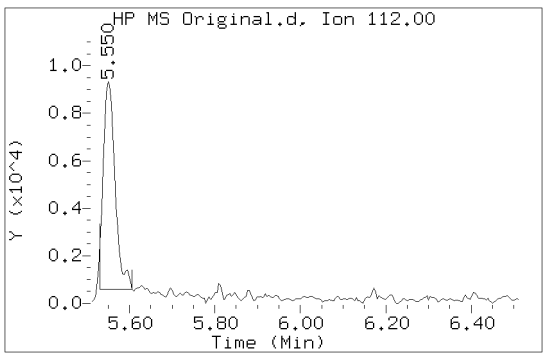
BEFORE
MASS
63
AREA
3309
HEIGHT
1990
18-Sep-2023
12:30
linh
pham



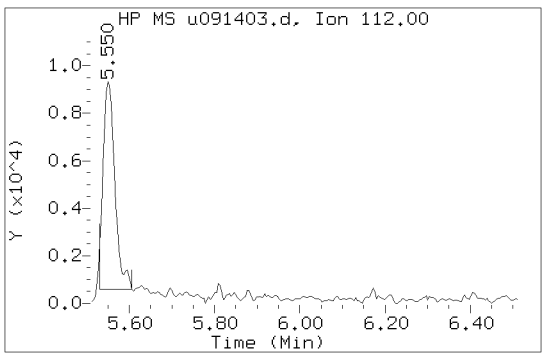

AFTER
MASS
63
AREA
3309
HEIGHT
1990
18-Sep-2023
12:30
linh
pham




BEFORE
MASS
112
AREA
16878
HEIGHT
8745
18-Sep-2023
12:30
linh
pham




AFTER
MASS
112
AREA
16878
HEIGHT
8745
18-Sep-2023
12:30
linh
pham

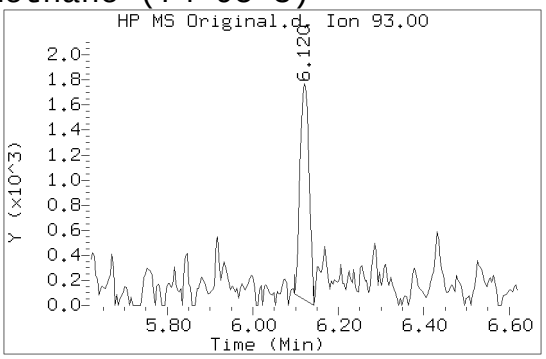


Data File : \\nahstws005\target\chem\voa9.i\u230914.b\u091403.d
Inj Date : 14-SEP-2023 16:09
InstruID : VOA9.i
LabSampID : VSTD000.5

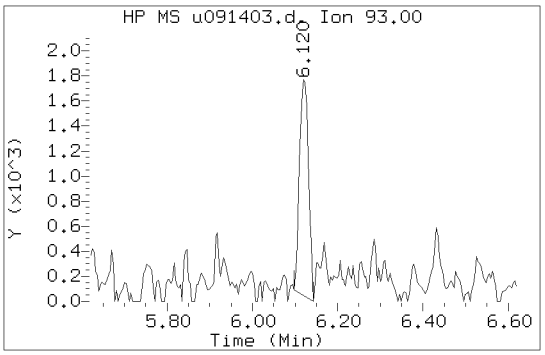
## Dibromomethane (74-95-3)

Reason Code:

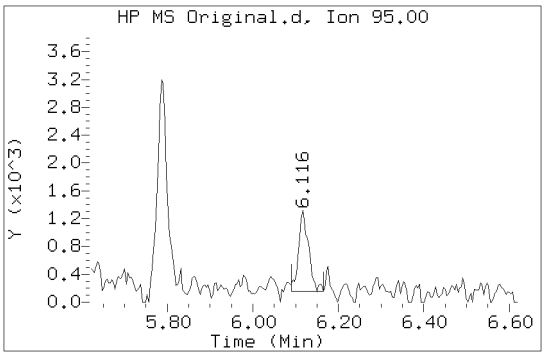
BEFORE
MASS
93
AREA
2627
HEIGHT
1725
18-Sep-2023
12:30
linh
pham



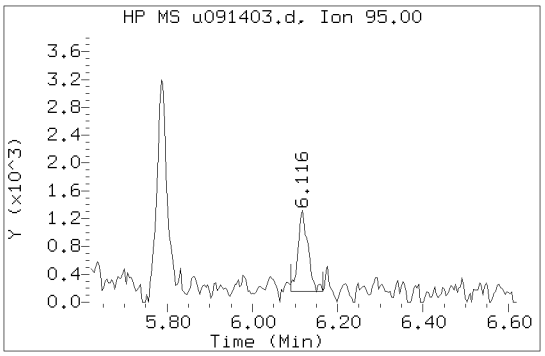

AFTER
MASS
93
AREA
2627
HEIGHT
1725
18-Sep-2023
12:30
linh
pham



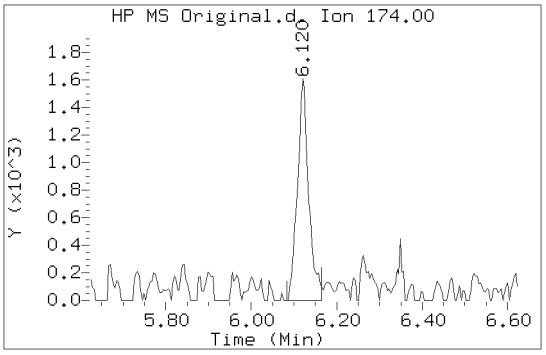

BEFORE
MASS
95
AREA
1958
HEIGHT
1167
18-Sep-2023
12:30
linh
pham



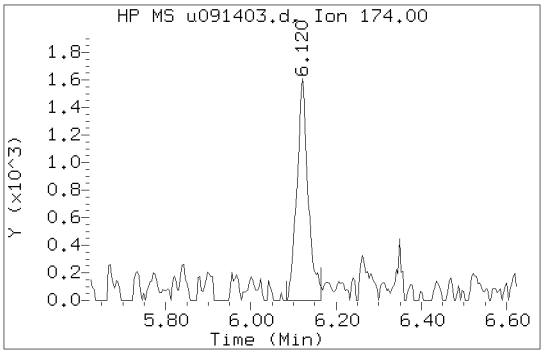

AFTER
MASS
95
AREA
1958
HEIGHT
1167
18-Sep-2023
12:30
linh
pham




BEFORE
MASS
174
AREA
3013
HEIGHT
1609
18-Sep-2023
12:30
linh
pham



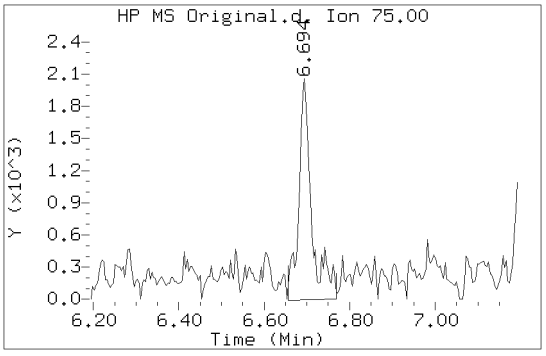

AFTER
MASS
174
AREA
3013
HEIGHT
1609
18-Sep-2023
12:30
linh
pham



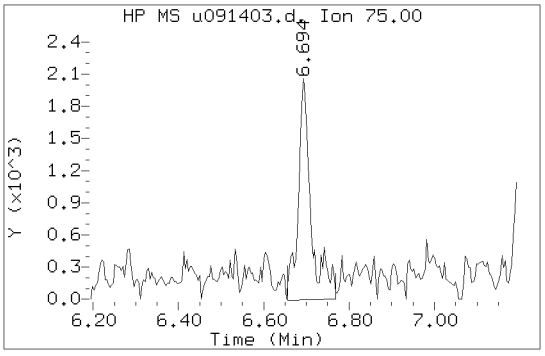

## cis-1,3-Dichloropropene (10061-01-5)

Reason Code:

BEFORE
MASS
75
AREA
4418
HEIGHT
2062
18-Sep-2023
12:30
linh
pham




AFTER
MASS
75
AREA
4418
HEIGHT
2062
18-Sep-2023
12:30
linh
pham



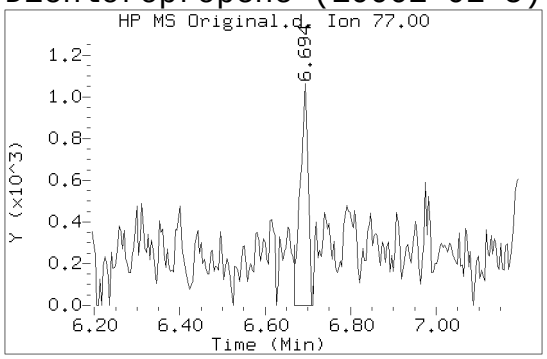
Data File : \\nahstws005\target\chem\voa9.i\u230914.b\u091403.d
Inj Date : 14-SEP-2023 16:09
InstruID : VOA9.i
LabSampID : VSTD000.5

## cis-1,3-Dichloropropene (10061-01-5)

Reason Code:

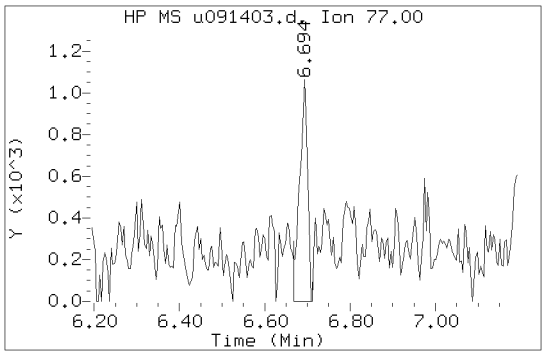
BEFORE

MASS
77
AREA
1433
HEIGHT
1063
18-Sep-2023
12:30
linh
pham



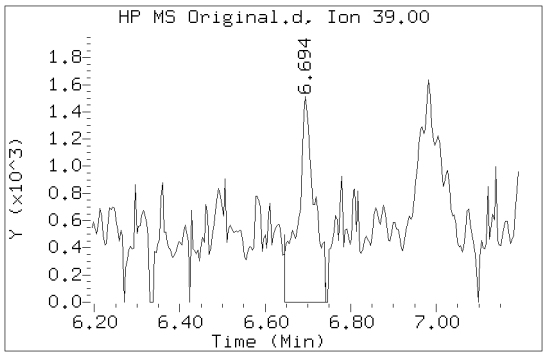

AFTER

MASS
77
AREA
1433
HEIGHT
1063
18-Sep-2023
12:30
linh
pham



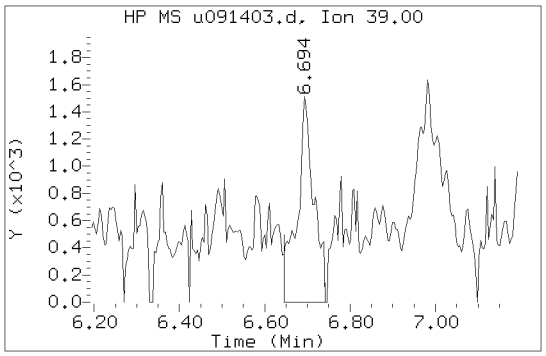

BEFORE

MASS
39
AREA
4202
HEIGHT
1514
18-Sep-2023
12:30
linh
pham




AFTER

MASS
39
AREA
4202
HEIGHT
1514
18-Sep-2023
12:30
linh
pham

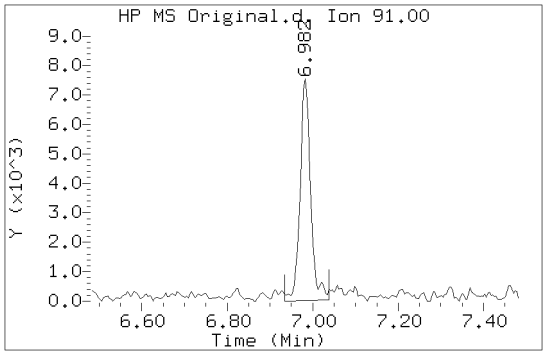



## Toluene (108-88-3)

Reason Code:

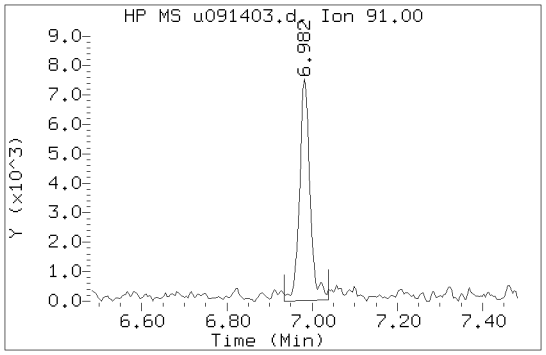
BEFORE

MASS
91
AREA
13250
HEIGHT
7524
18-Sep-2023
12:30
linh
pham



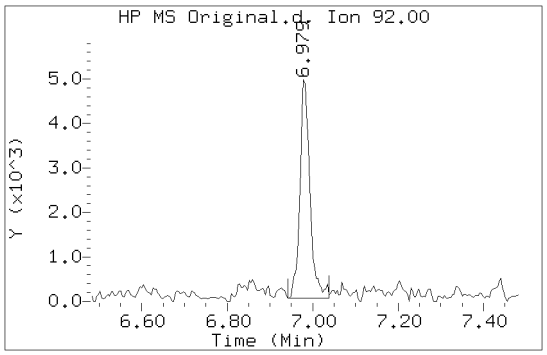

AFTER

MASS
91
AREA
13250
HEIGHT
7524
18-Sep-2023
12:30
linh
pham



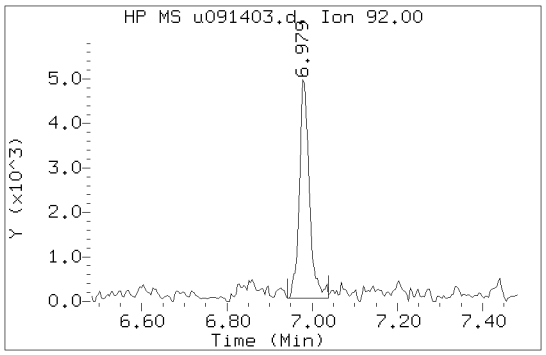

BEFORE

MASS
92
AREA
8238
HEIGHT
4915
18-Sep-2023
12:30
linh
pham




AFTER

MASS
92
AREA
8238
HEIGHT
4915
18-Sep-2023
12:30
linh
pham



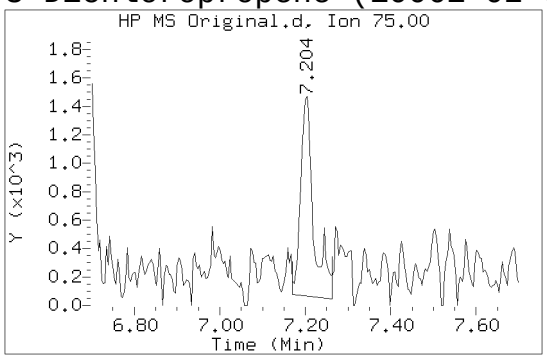
Data File : \\nahstws005\target\chem\voa9.i\u230914.b\u091403.d
Inj Date : 14-SEP-2023 16:09
InstruID : VOA9.i
LabSampID : VSTD000.5

## trans-1,3-Dichloropropene (10061-02-6)

Reason Code:

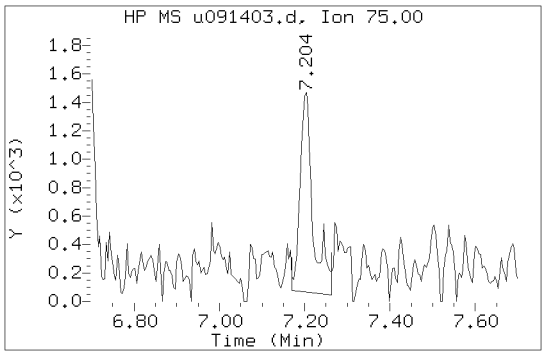
BEFORE

MASS
75
AREA
3003
HEIGHT
1406
18-Sep-2023
12:30
linh
pham



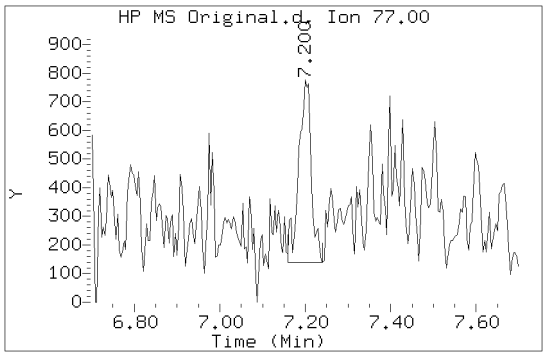

AFTER

MASS
75
AREA
3003
HEIGHT
1406
18-Sep-2023
12:30
linh
pham



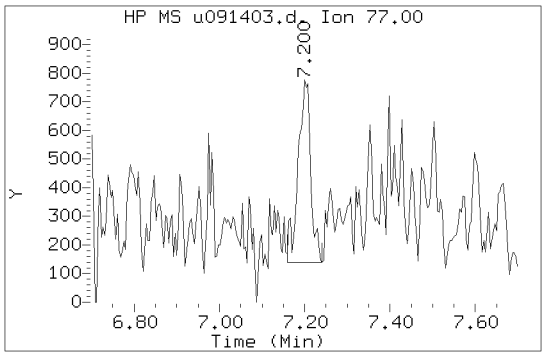

BEFORE

MASS
77
AREA
1328
HEIGHT
638
18-Sep-2023
12:30
linh
pham



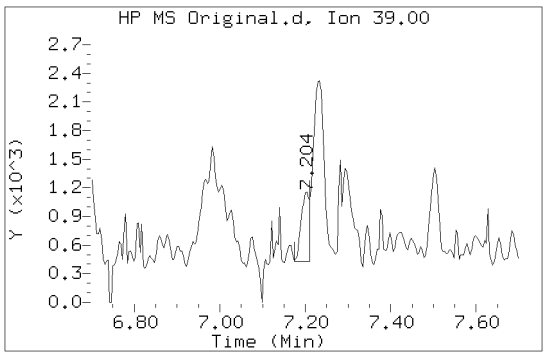

AFTER

MASS
77
AREA
1328
HEIGHT
638
18-Sep-2023
12:30
linh
pham



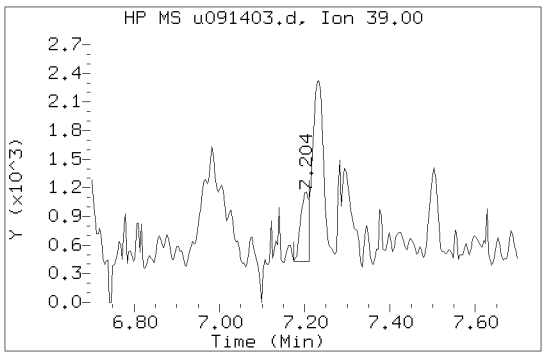

BEFORE

MASS
39
AREA
1030
HEIGHT
723
18-Sep-2023
12:30
linh
pham




AFTER

MASS
39
AREA
1030
HEIGHT
723
18-Sep-2023
12:30
linh
pham

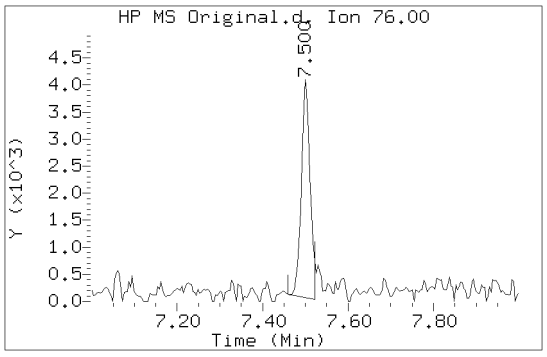



## 1,3-Dichloropropane (142-28-9)

Reason Code:

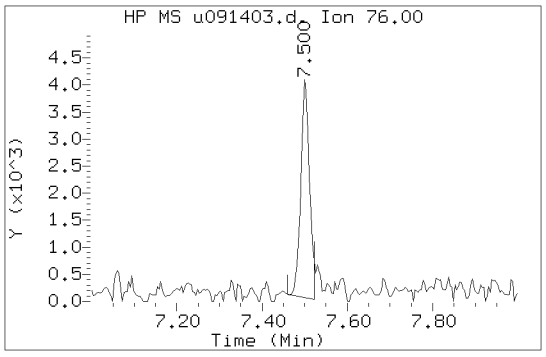
BEFORE

MASS
76
AREA
5881
HEIGHT
4027
18-Sep-2023
12:30
linh
pham




AFTER

MASS
76
AREA
5881
HEIGHT
4027
18-Sep-2023
12:30
linh
pham



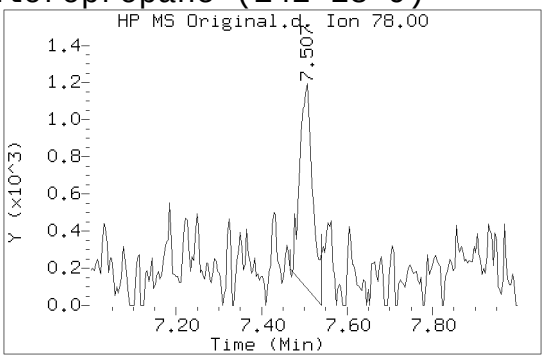
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Inj Date : 14-SEP-2023 16:09
InstruID : VOA9.i
LabSampID : VSTD000.5

## 1,3-Dichloropropane (142-28-9)

Reason Code:

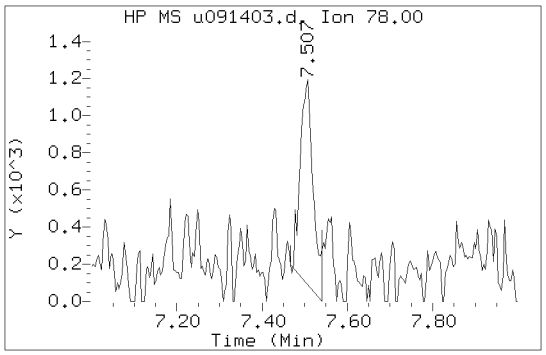
BEFORE

MASS
78
AREA
2367
HEIGHT
1105
18-Sep-2023
12:30
linh
pham




AFTER

MASS
78
AREA
2367
HEIGHT
1105
18-Sep-2023
12:30
linh
pham

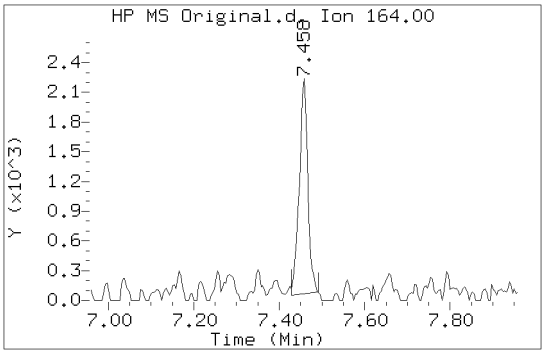



## Tetrachloroethene (127-18-4)

Reason Code:

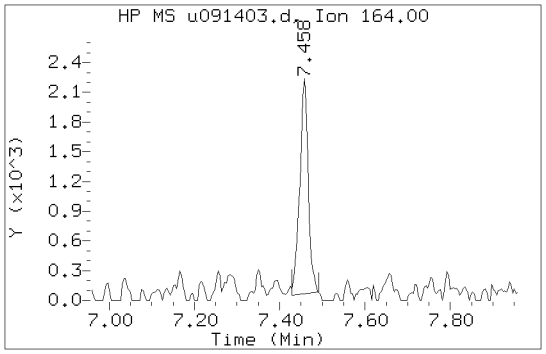
BEFORE

MASS
164
AREA
3084
HEIGHT
2170
18-Sep-2023
12:30
linh
pham



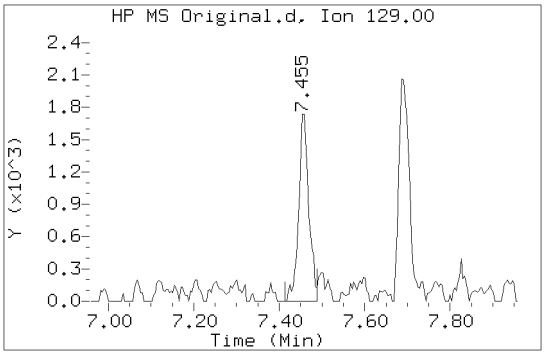

AFTER

MASS
164
AREA
3084
HEIGHT
2170
18-Sep-2023
12:30
linh
pham



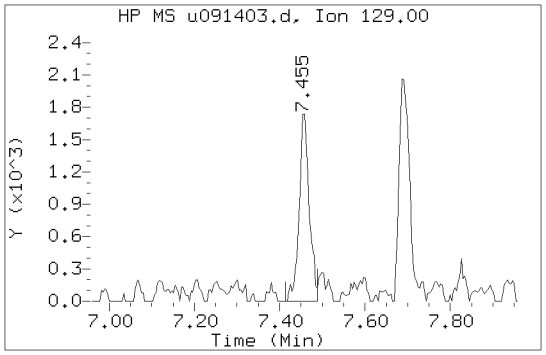

BEFORE

MASS
129
AREA
2929
HEIGHT
1733
18-Sep-2023
12:30
linh
pham



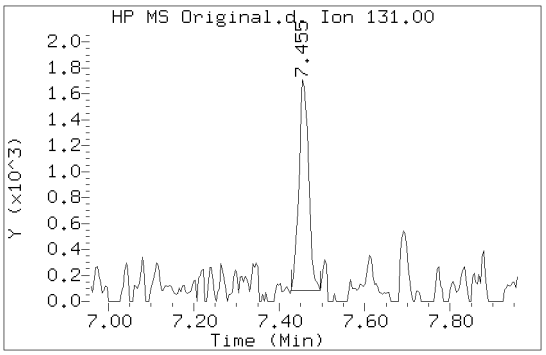

AFTER

MASS
129
AREA
2929
HEIGHT
1733
18-Sep-2023
12:30
linh
pham



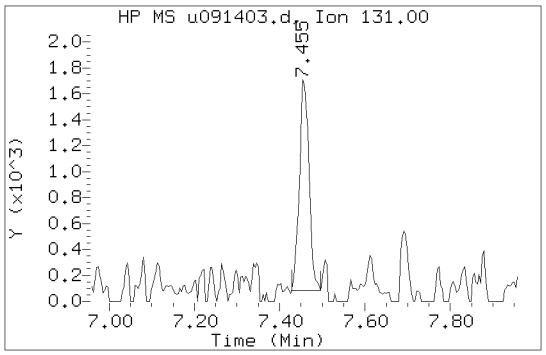

BEFORE

MASS
131
AREA
2616
HEIGHT
1625
18-Sep-2023
12:30
linh
pham




AFTER

MASS
131
AREA
2616
HEIGHT
1625
18-Sep-2023
12:30
linh
pham

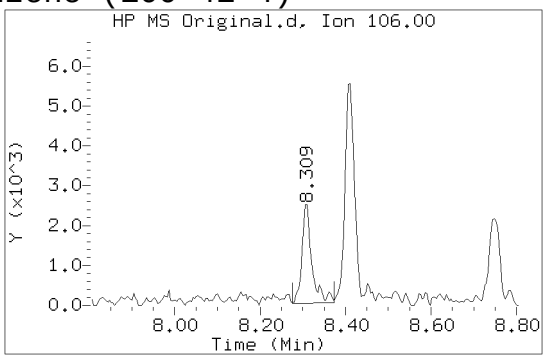


Data File : \\nahstws005\target\chem\voa9.i\u230914.b\u091403.d
Inj Date : 14-SEP-2023 16:09
InstruID : VOA9.i
LabSampID : VSTD000.5

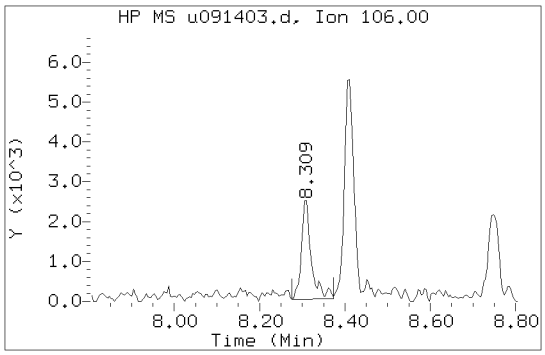
## Ethylbenzene (100-41-4)

Reason Code:

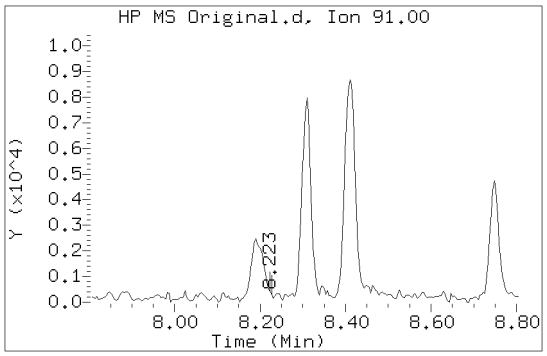
BEFORE
MASS
106
AREA
4115
HEIGHT
2465
18-Sep-2023
12:30
linh
pham



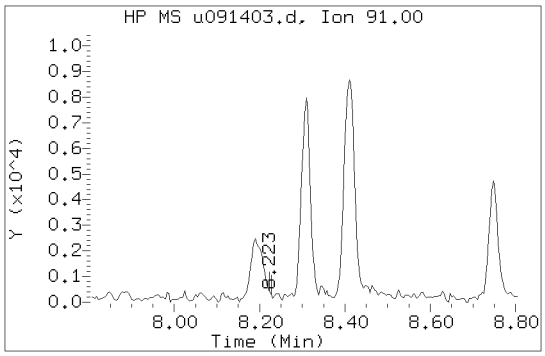

AFTER
MASS
106
AREA
4115
HEIGHT
2465
18-Sep-2023
12:30
linh
pham




BEFORE
MASS
91
AREA
0
HEIGHT
0
18-Sep-2023
12:30
linh
pham



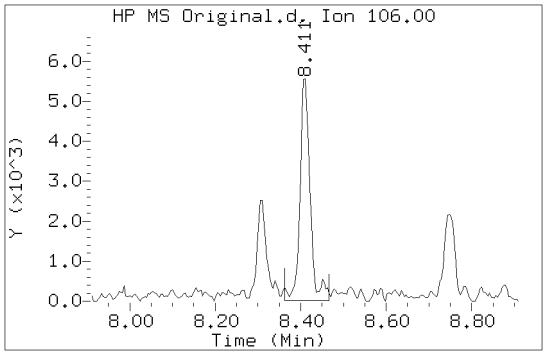

AFTER
MASS
91
AREA
0
HEIGHT
0
18-Sep-2023
12:30
linh
pham



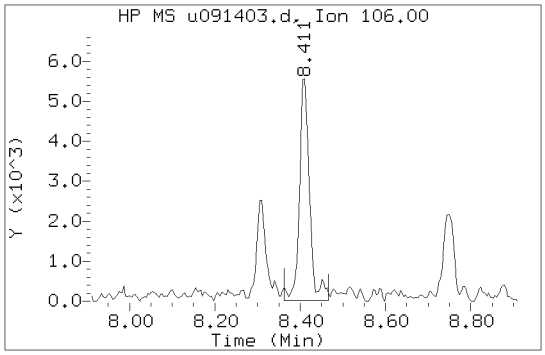

## m,p-Xylenes ()

Reason Code:

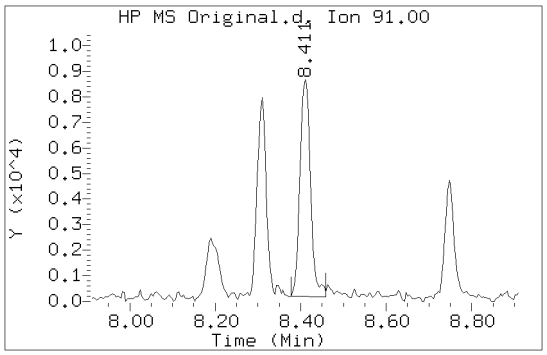
BEFORE
MASS
106
AREA
9427
HEIGHT
5551
18-Sep-2023
12:30
linh
pham



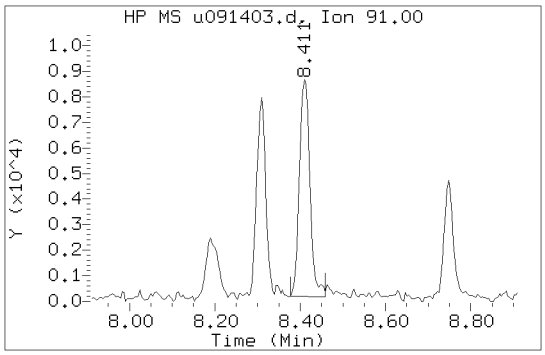

AFTER
MASS
106
AREA
9427
HEIGHT
5551
18-Sep-2023
12:30
linh
pham




BEFORE
MASS
91
AREA
15016
HEIGHT
8490
18-Sep-2023
12:30
linh
pham




AFTER
MASS
91
AREA
15016
HEIGHT
8490
18-Sep-2023
12:30
linh
pham



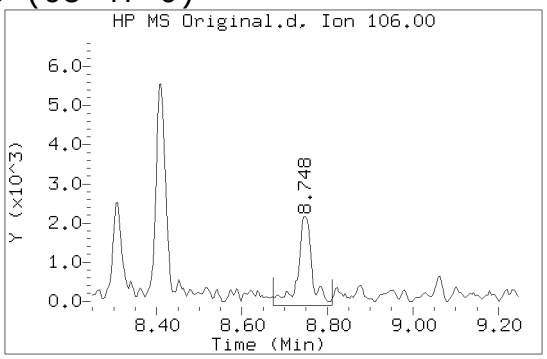
Data File : \\nahstws005\target\chem\voa9.i\u230914.b\u091403.d
Inj Date : 14-SEP-2023 16:09
InstruID : VOA9.i
LabSampID : VSTD000.5

## o-Xylene (95-47-6)

Reason Code:

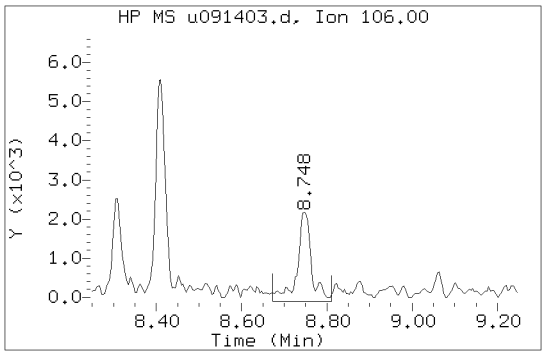
BEFORE

MASS
106
AREA
5517
HEIGHT
2284
18-Sep-2023
12:30
linh
pham



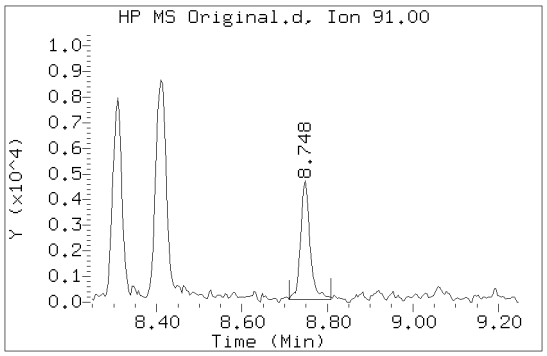

AFTER

MASS
106
AREA
5517
HEIGHT
2284
18-Sep-2023
12:30
linh
pham



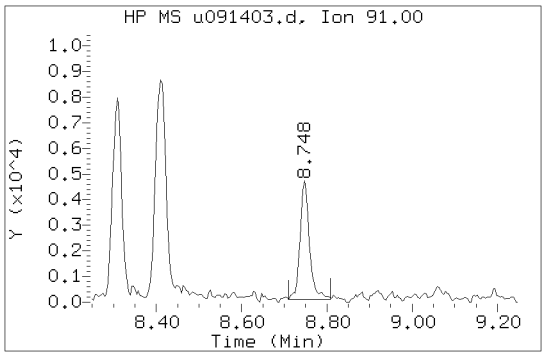

BEFORE

MASS
91
AREA
7272
HEIGHT
4637
18-Sep-2023
12:30
linh
pham




AFTER

MASS
91
AREA
7272
HEIGHT
4637
18-Sep-2023
12:30
linh
pham

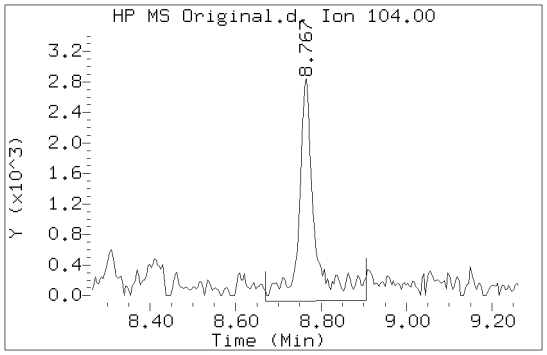



## Styrene (100-42-5)

Reason Code:

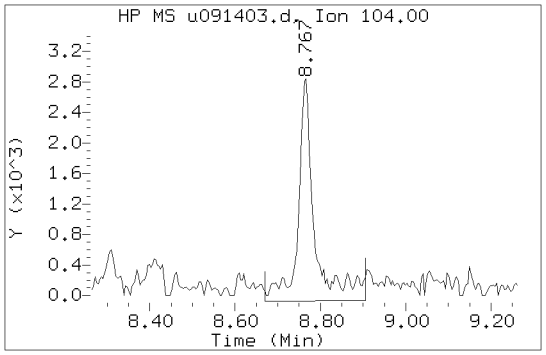
BEFORE

MASS
104
AREA
8005
HEIGHT
2909
18-Sep-2023
12:30
linh
pham



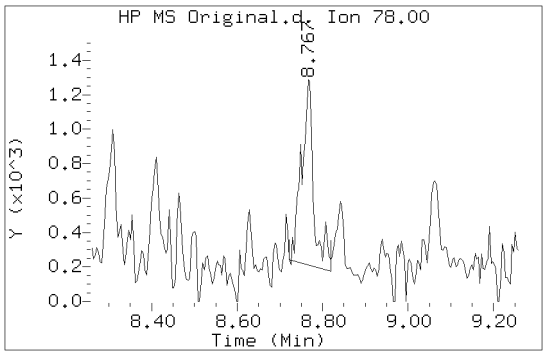

AFTER

MASS
104
AREA
8005
HEIGHT
2909
18-Sep-2023
12:30
linh
pham



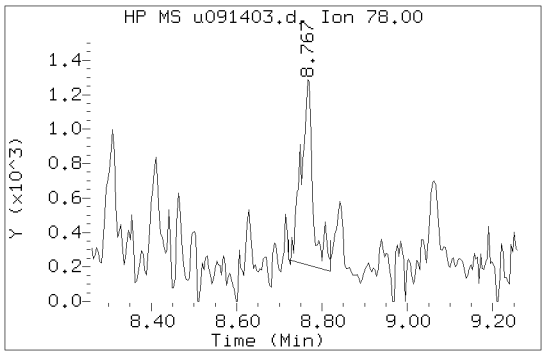

BEFORE

MASS
78
AREA
2114
HEIGHT
1076
18-Sep-2023
12:30
linh
pham




AFTER

MASS
78
AREA
2114
HEIGHT
1076
18-Sep-2023
12:30
linh
pham

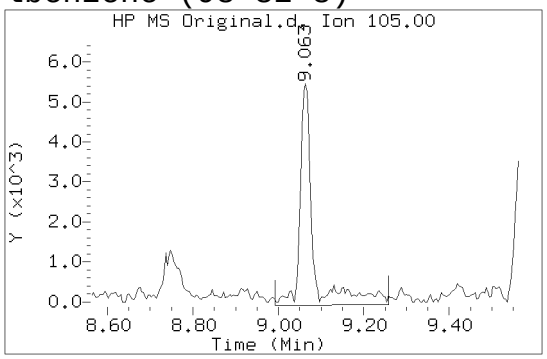


Data File : \\nahstws005\target\chem\voa9.i\u230914.b\u091403.d
Inj Date : 14-SEP-2023 16:09
InstruID : VOA9.i
LabSampID : VSTD000.5

## Isopropylbenzene (98-82-8)

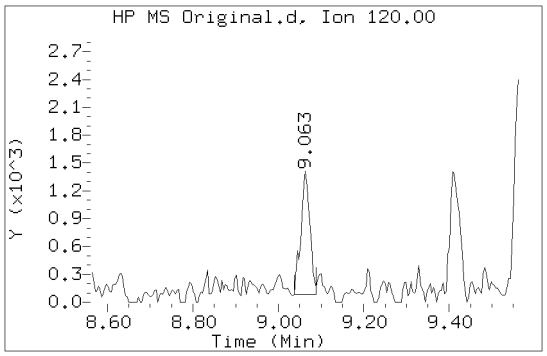
BEFORE

MASS
105
AREA
12158
HEIGHT
5539
18-Sep-2023
12:30
linh
pham




BEFORE

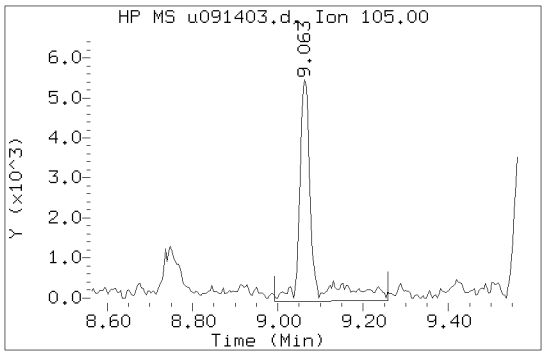
MASS
120
AREA
2003
HEIGHT
1331
18-Sep-2023
12:30
linh
pham




Reason Code:

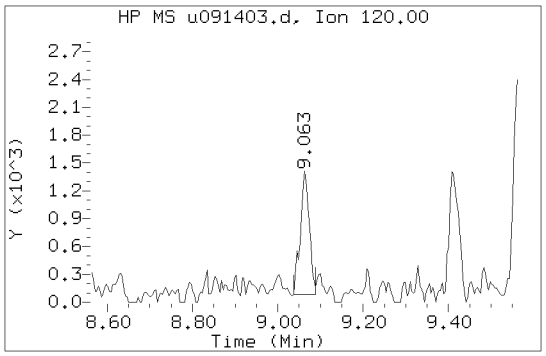
AFTER

MASS
105
AREA
12158
HEIGHT
5539
18-Sep-2023
12:30
linh
pham




AFTER

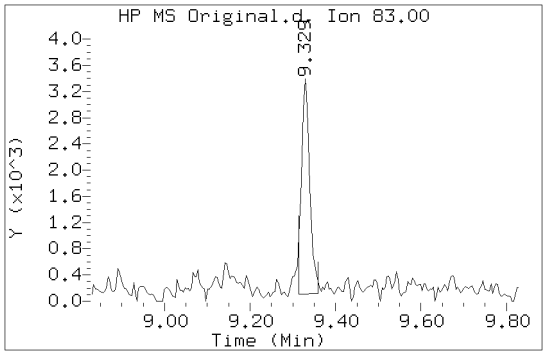
MASS
120
AREA
2003
HEIGHT
1331
18-Sep-2023
12:30
linh
pham




## 1,1,2,2-Tetrachloroethane (79-34-5)

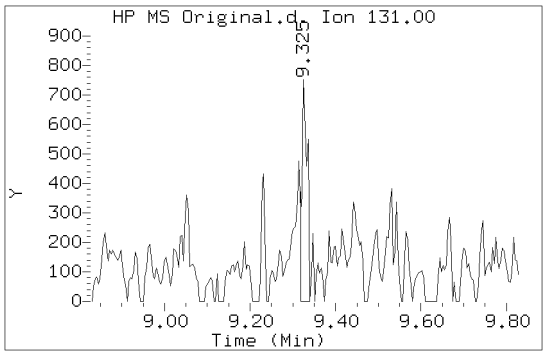
BEFORE

MASS
83
AREA
4530
HEIGHT
3283
18-Sep-2023
12:30
linh
pham




BEFORE

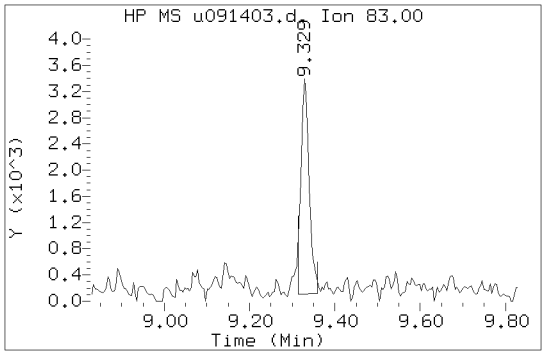
MASS
131
AREA
677
HEIGHT
752
18-Sep-2023
12:30
linh
pham




Reason Code:

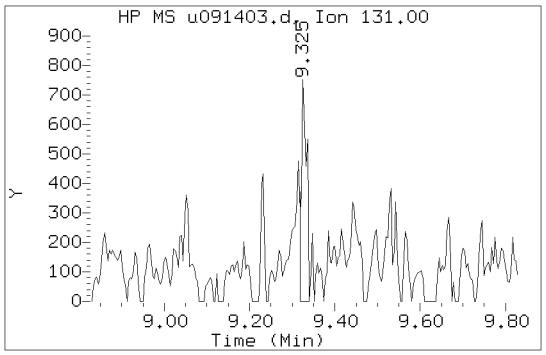
AFTER

MASS
83
AREA
4530
HEIGHT
3283
18-Sep-2023
12:30
linh
pham




AFTER

MASS
131
AREA
677
HEIGHT
752
18-Sep-2023
12:30
linh
pham



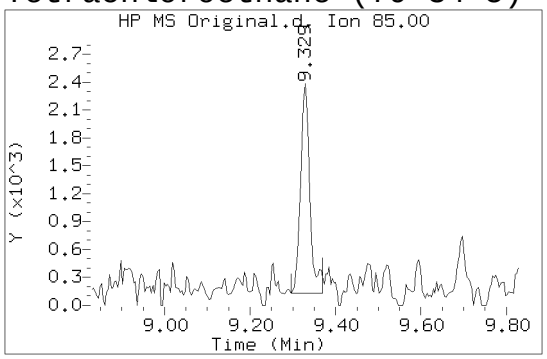
Data File : \\nahstws005\target\chem\voa9.i\u230914.b\u091403.d
Inj Date : 14-SEP-2023 16:09
InstruID : VOA9.i
LabSampID : VSTD000.5

## 1,1,2,2-Tetrachloroethane (79-34-5)

Reason Code:

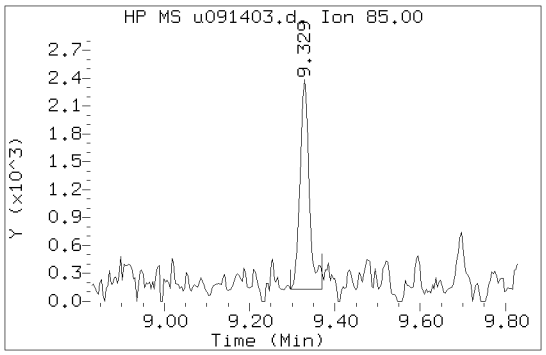
BEFORE

MASS
85
AREA
3496
HEIGHT
2256
18-Sep-2023
12:30
linh
pham




AFTER

MASS
85
AREA
3496
HEIGHT
2256
18-Sep-2023
12:30
linh
pham

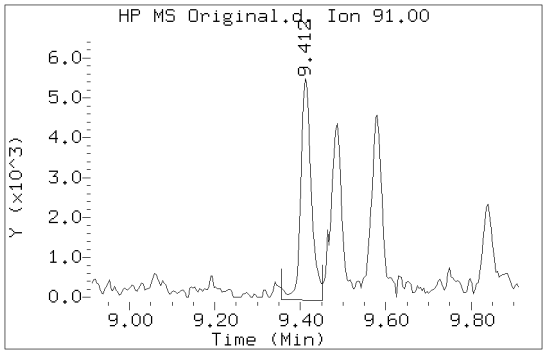



## n-Propylbenzene (106-65-1)

Reason Code:

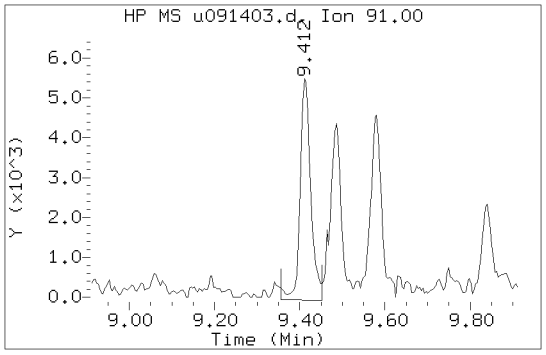
BEFORE

MASS
91
AREA
9893
HEIGHT
5551
18-Sep-2023
12:30
linh
pham



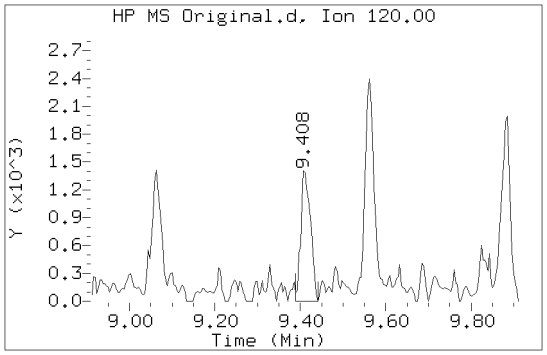

AFTER

MASS
91
AREA
9893
HEIGHT
5551
18-Sep-2023
12:30
linh
pham



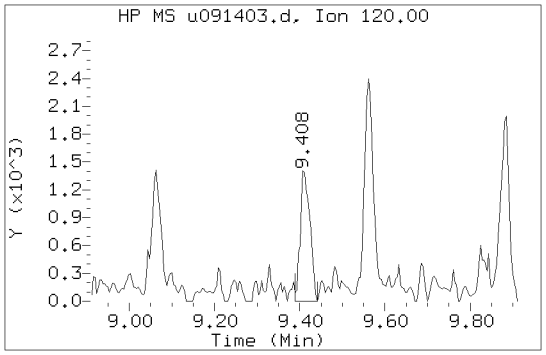

BEFORE

MASS
120
AREA
2270
HEIGHT
1403
18-Sep-2023
12:30
linh
pham




AFTER

MASS
120
AREA
2270
HEIGHT
1403
18-Sep-2023
12:30
linh
pham

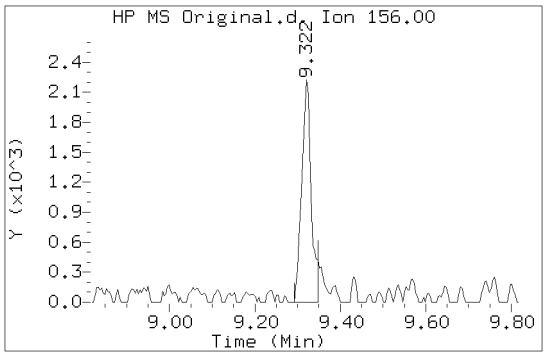



## Bromobenzene (108-86-1)

Reason Code:

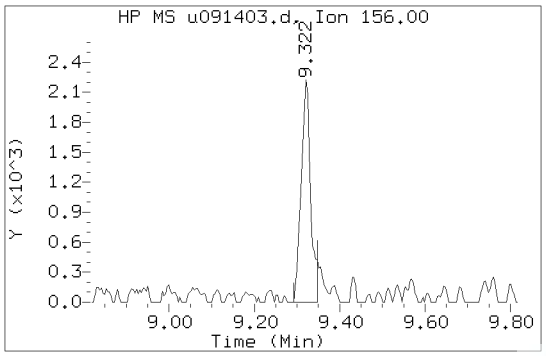
BEFORE

MASS
156
AREA
3486
HEIGHT
2224
18-Sep-2023
12:30
linh
pham




AFTER

MASS
156
AREA
3486
HEIGHT
2224
18-Sep-2023
12:30
linh
pham



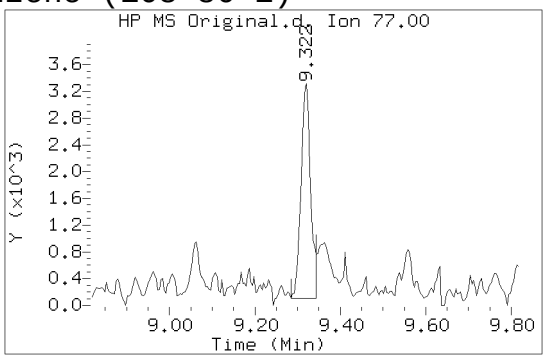
Data File : \\nahstws005\target\chem\voa9.i\u230914.b\u091403.d
Inj Date : 14-SEP-2023 16:09
InstruID : VOA9.i
LabSampID : VSTD000.5

## Bromobenzene (108-86-1)

Reason Code:

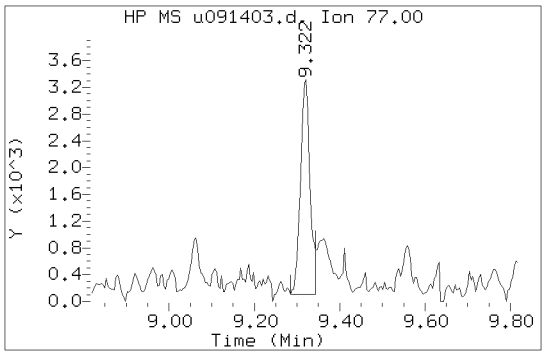
BEFORE

MASS
77
AREA
5111
HEIGHT
3204
18-Sep-2023
12:30
linh
pham



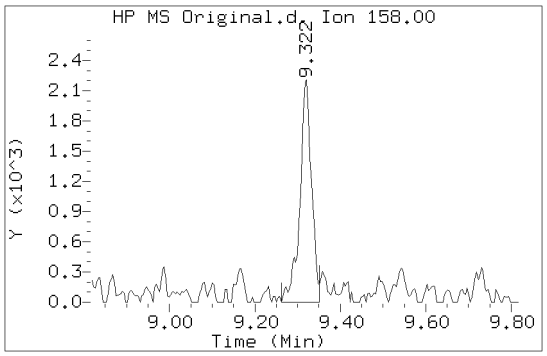

AFTER

MASS
77
AREA
5111
HEIGHT
3204
18-Sep-2023
12:30
linh
pham



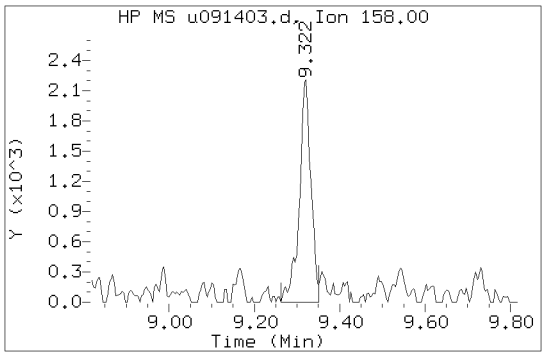

BEFORE

MASS
158
AREA
4263
HEIGHT
2208
18-Sep-2023
12:30
linh
pham




AFTER

MASS
158
AREA
4263
HEIGHT
2208
18-Sep-2023
12:30
linh
pham

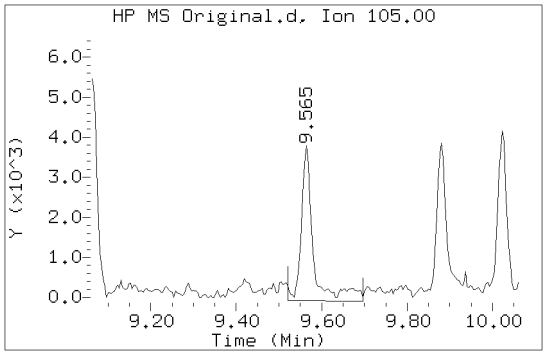



## 1,3,5-Trimethylbenzene (108-67-8)

Reason Code:

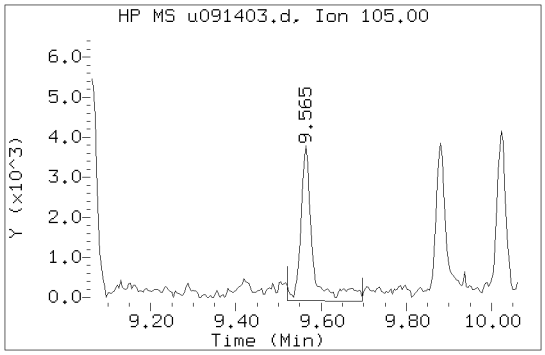
BEFORE

MASS
105
AREA
7718
HEIGHT
3866
18-Sep-2023
12:30
linh
pham



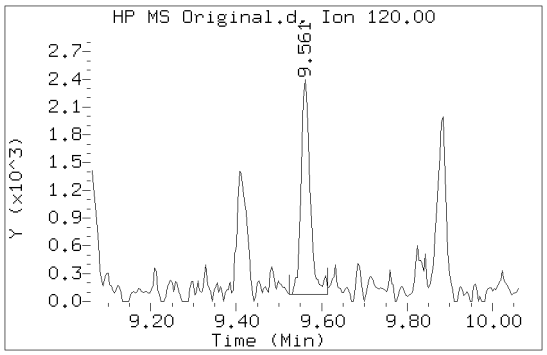

AFTER

MASS
105
AREA
7718
HEIGHT
3866
18-Sep-2023
12:30
linh
pham



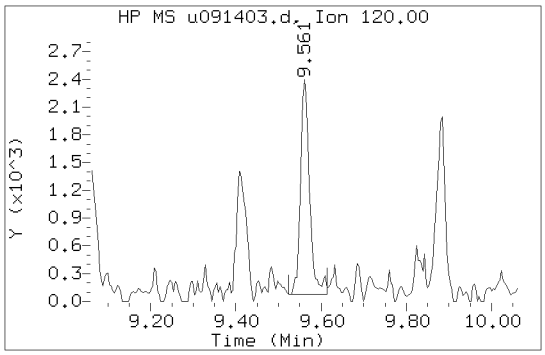

BEFORE

MASS
120
AREA
3516
HEIGHT
2319
18-Sep-2023
12:30
linh
pham




AFTER

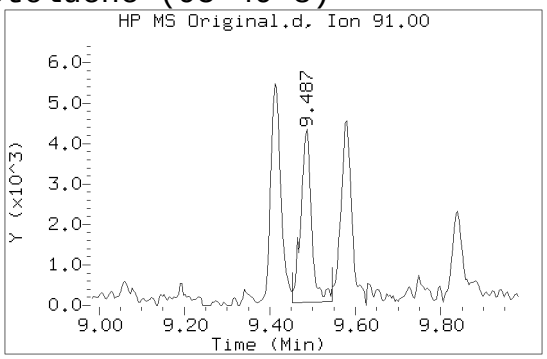
MASS
120
AREA
3516
HEIGHT
2319
18-Sep-2023
12:30
linh
pham



Data File : \\nahstws005\target\chem\voa9.i\u230914.b\u091403.d
Inj Date : 14-SEP-2023 16:09
InstruID : VOA9.i
LabSampID : VSTD000.5

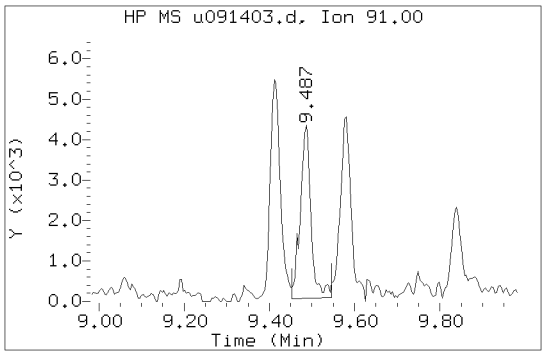
## 2-Chlorotoluene (95-49-8)

BEFORE
MASS
91
AREA
7768
HEIGHT
4287
18-Sep-2023
12:30
linh
pham

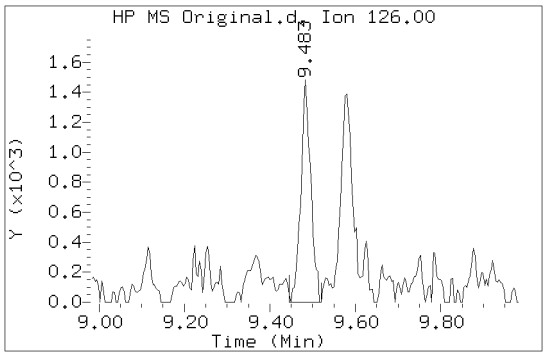



Reason Code:

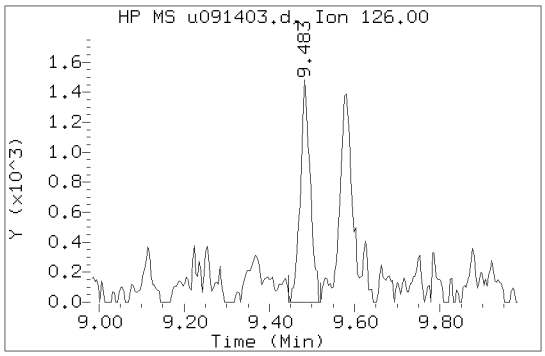
AFTER
MASS
91
AREA
7768
HEIGHT
4287
18-Sep-2023
12:30
linh
pham




BEFORE
MASS
126
AREA
2440
HEIGHT
1482
18-Sep-2023
12:30
linh
pham

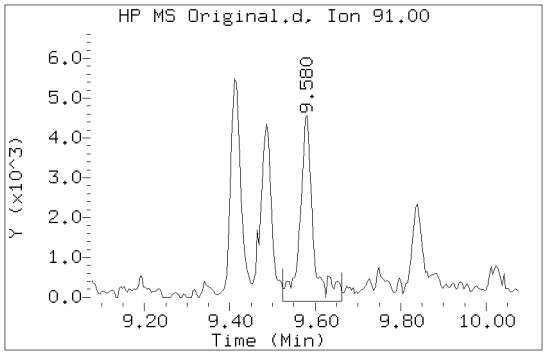



AFTER
MASS
126
AREA
2440
HEIGHT
1482
18-Sep-2023
12:30
linh
pham



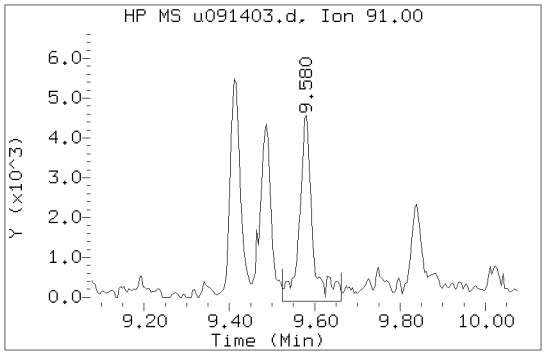

## 4-Chlorotoluene (106-43-4)

BEFORE
MASS
91
AREA
10329
HEIGHT
4669
18-Sep-2023
12:30
linh
pham

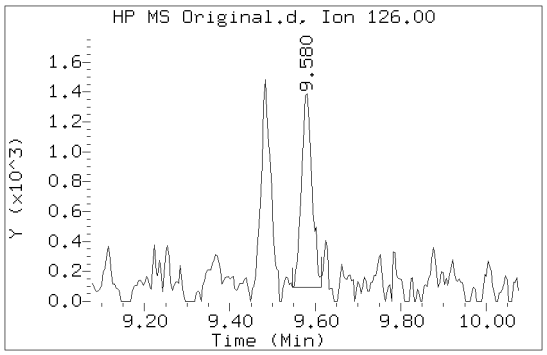



Reason Code:

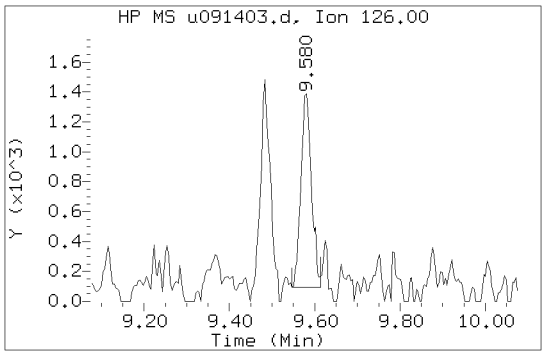
AFTER
MASS
91
AREA
10329
HEIGHT
4669
18-Sep-2023
12:30
linh
pham




BEFORE
MASS
126
AREA
2282
HEIGHT
1295
18-Sep-2023
12:30
linh
pham




AFTER
MASS
126
AREA
2282
HEIGHT
1295
18-Sep-2023
12:30
linh
pham



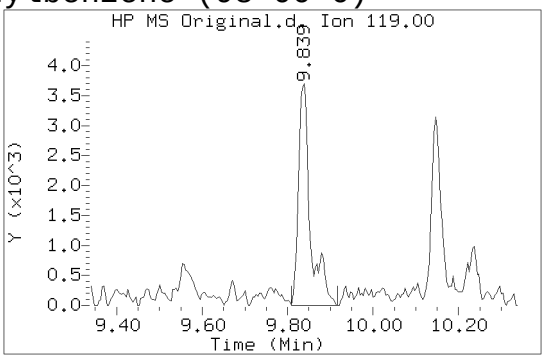
Data File : \\nahstws005\target\chem\voa9.i\u230914.b\u091403.d
Inj Date : 14-SEP-2023 16:09
InstruID : VOA9.i
LabSampID : VSTD000.5

## tert-Butylbenzene (98-06-6)

Reason Code:

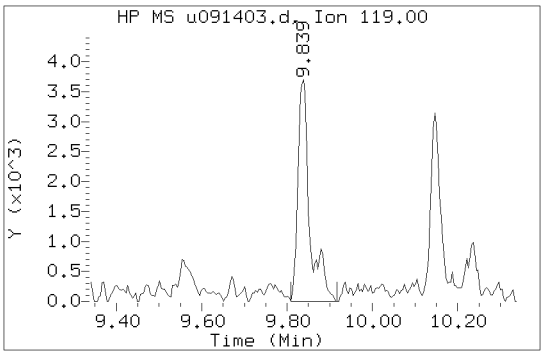
BEFORE

MASS
119
AREA
7286
HEIGHT
3699
18-Sep-2023
12:30
linh
pham



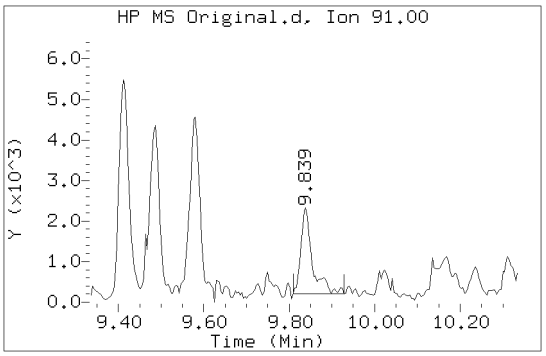

AFTER

MASS
119
AREA
7286
HEIGHT
3699
18-Sep-2023
12:30
linh
pham



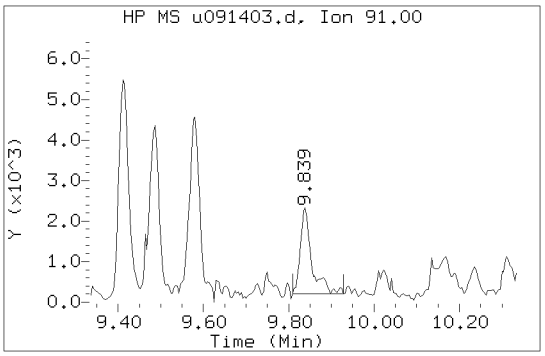

BEFORE

MASS
91
AREA
4023
HEIGHT
2123
18-Sep-2023
12:30
linh
pham



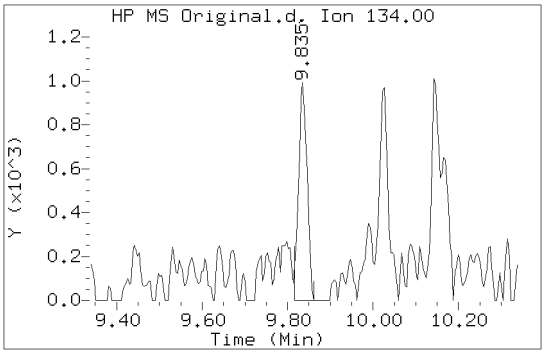

AFTER

MASS
91
AREA
4023
HEIGHT
2123
18-Sep-2023
12:30
linh
pham



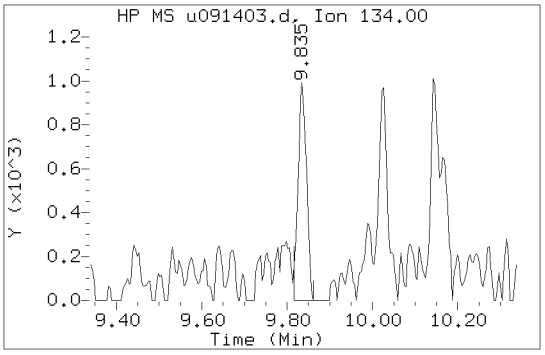

BEFORE

MASS
134
AREA
1409
HEIGHT
994
18-Sep-2023
12:30
linh
pham




AFTER

MASS
134
AREA
1409
HEIGHT
994
18-Sep-2023
12:30
linh
pham

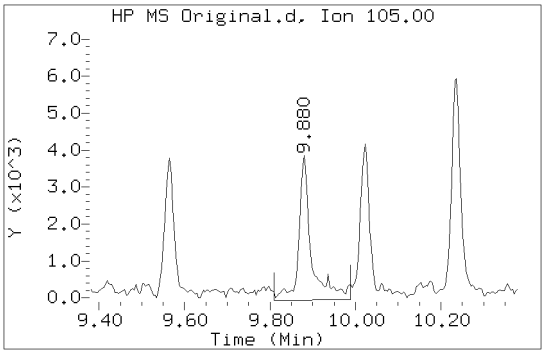



## 1,2,4-Trimethylbenzene (95-63-6)

Reason Code:

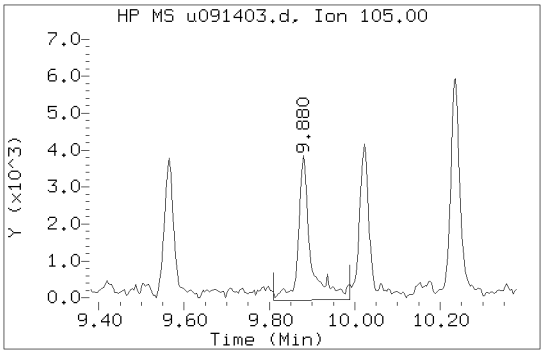
BEFORE

MASS
105
AREA
8406
HEIGHT
3915
18-Sep-2023
12:30
linh
pham




AFTER

MASS
105
AREA
8406
HEIGHT
3915
18-Sep-2023
12:30
linh
pham



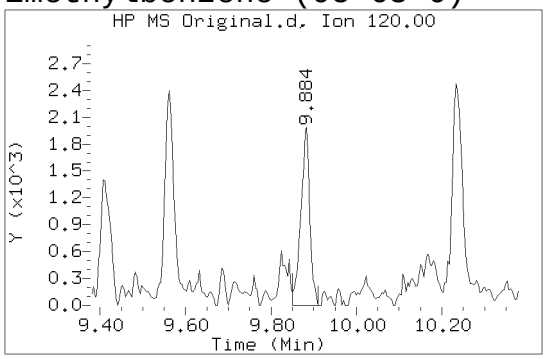
Data File : \\nahstws005\target\chem\voa9.i\u230914.b\u091403.d
Inj Date : 14-SEP-2023 16:09
InstruID : VOA9.i
LabSampID : VSTD000.5

## 1,2,4-Trimethylbenzene (95-63-6)

Reason Code:

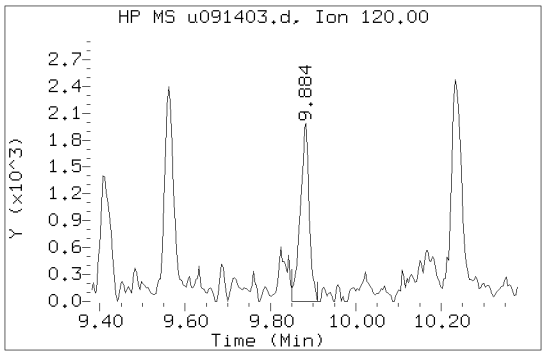
BEFORE

MASS
120
AREA
2962
HEIGHT
1993
18-Sep-2023
12:30
linh
pham




AFTER

MASS
120
AREA
2962
HEIGHT
1993
18-Sep-2023
12:30
linh
pham

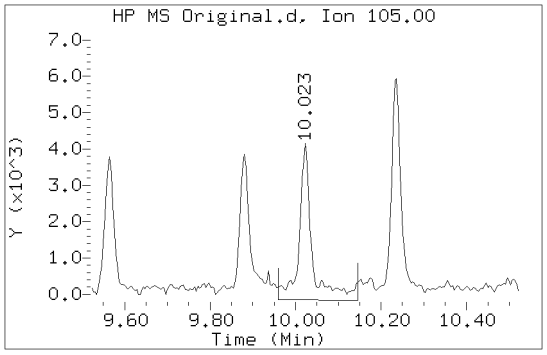



## sec-Butylbenzene (135-98-8)

Reason Code:

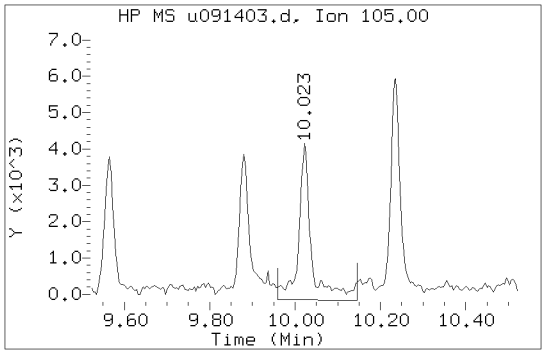
BEFORE

MASS
105
AREA
9443
HEIGHT
4309
18-Sep-2023
12:30
linh
pham



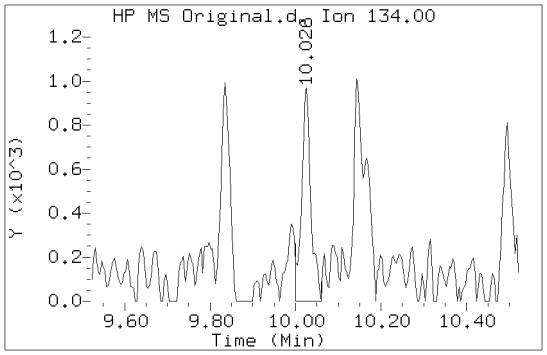

AFTER

MASS
105
AREA
9443
HEIGHT
4309
18-Sep-2023
12:30
linh
pham



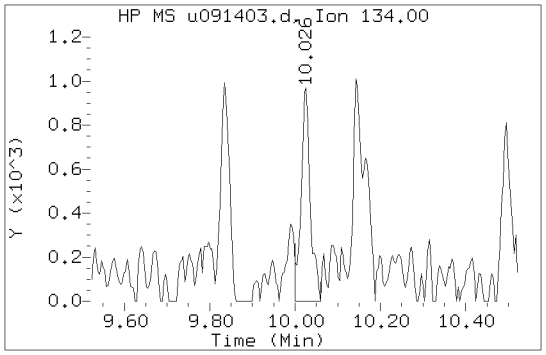

BEFORE

MASS
134
AREA
1500
HEIGHT
970
18-Sep-2023
12:30
linh
pham




AFTER

MASS
134
AREA
1500
HEIGHT
970
18-Sep-2023
12:30
linh
pham

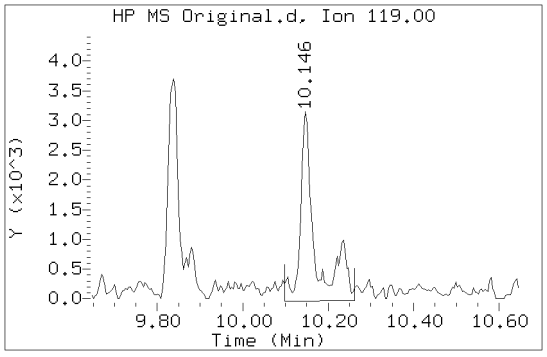



## p-Isopropyltoluene (99-87-6)

Reason Code:

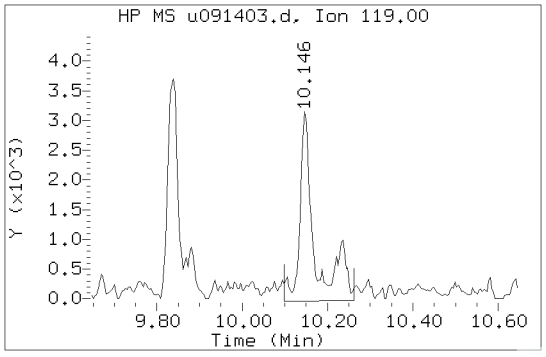
BEFORE

MASS
119
AREA
7845
HEIGHT
3180
18-Sep-2023
12:30
linh
pham




AFTER

MASS
119
AREA
7845
HEIGHT
3180
18-Sep-2023
12:30
linh
pham



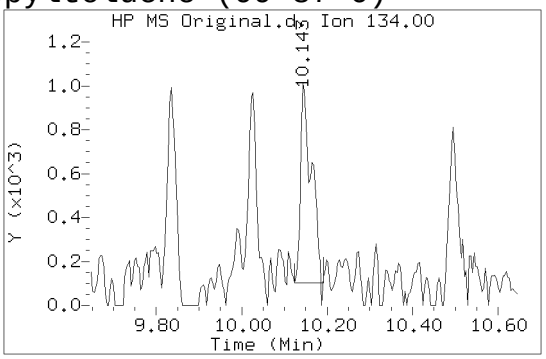
Data File : \\nahstws005\target\chem\voa9.i\u230914.b\u091403.d
Inj Date : 14-SEP-2023 16:09
InstruID : VOA9.i
LabSampID : VSTD000.5

## p-Isopropyltoluene (99-87-6)

Reason Code:

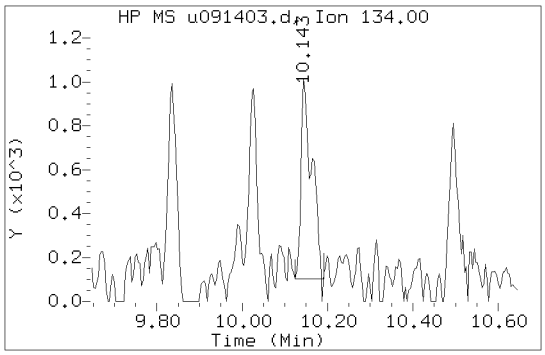
BEFORE

MASS
134
AREA
1607
HEIGHT
908
18-Sep-2023
12:30
linh
pham



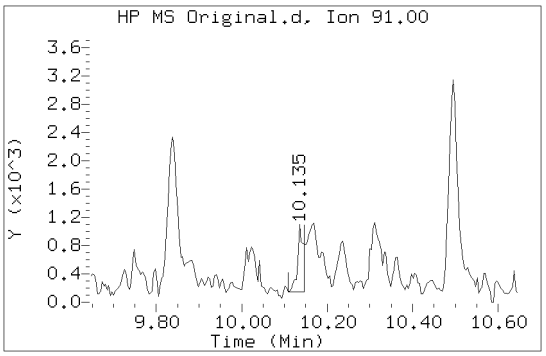

AFTER

MASS
134
AREA
1607
HEIGHT
908
18-Sep-2023
12:30
linh
pham



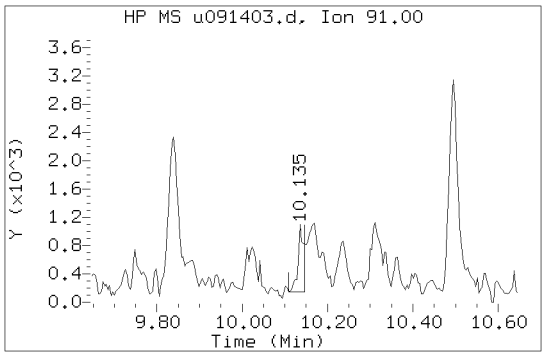

BEFORE

MASS
91
AREA
898
HEIGHT
951
18-Sep-2023
12:30
linh
pham




AFTER

MASS
91
AREA
898
HEIGHT
951
18-Sep-2023
12:30
linh
pham

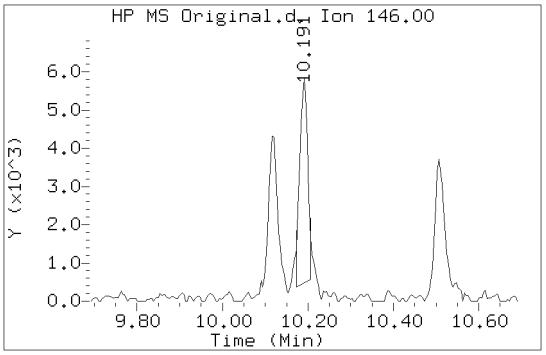



## 1,4-Dichlorobenzene (106-46-7)

Reason Code:

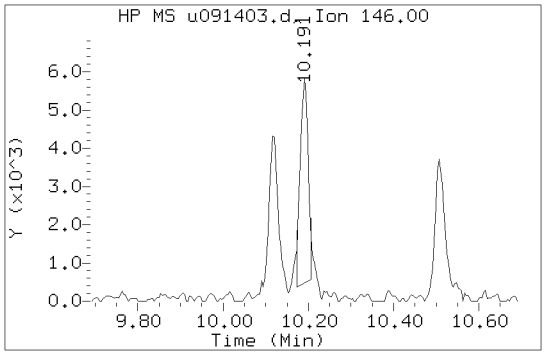
BEFORE

MASS
146
AREA
7315
HEIGHT
5331
18-Sep-2023
12:30
linh
pham



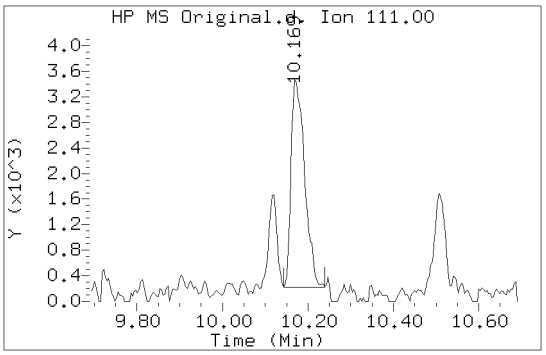

AFTER

MASS
146
AREA
7315
HEIGHT
5331
18-Sep-2023
12:30
linh
pham



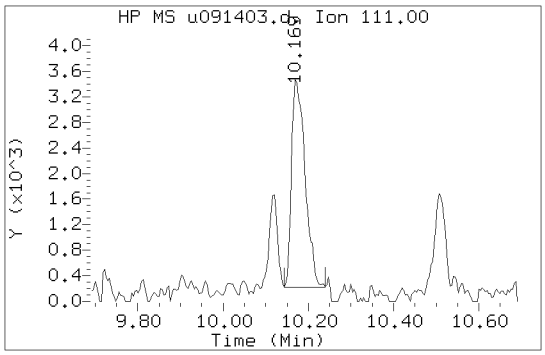

BEFORE

MASS
111
AREA
7250
HEIGHT
3248
18-Sep-2023
12:30
linh
pham




AFTER

MASS
111
AREA
7250
HEIGHT
3248
18-Sep-2023
12:30
linh
pham



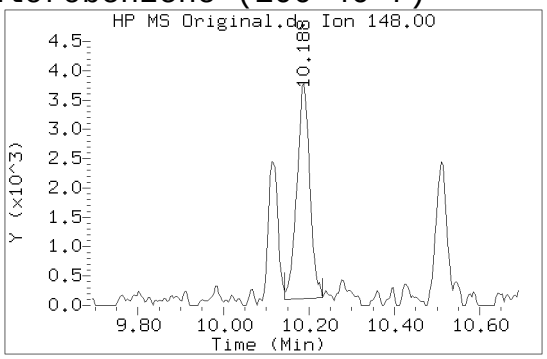
Data File : \\nahstws005\target\chem\voa9.i\u230914.b\u091403.d
Inj Date : 14-SEP-2023 16:09
InstruID : VOA9.i
LabSampID : VSTD000.5

## 1,4-Dichlorobenzene (106-46-7)

Reason Code:

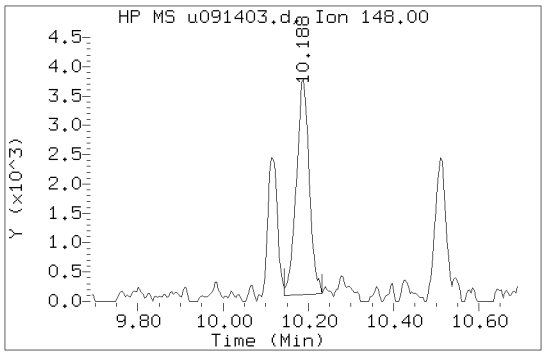
BEFORE

MASS
148
AREA
7869
HEIGHT
3662
18-Sep-2023
12:30
linh
pham




AFTER

MASS
148
AREA
7869
HEIGHT
3662
18-Sep-2023
12:30
linh
pham

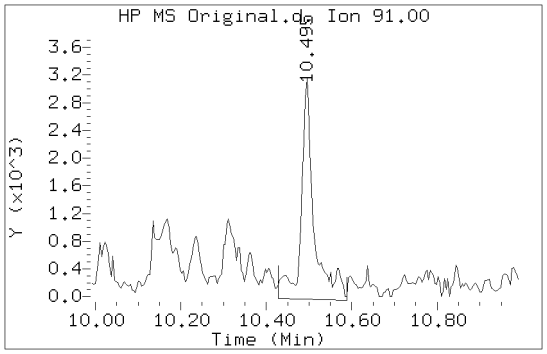



## n-Butylbenzene (104-51-8)

Reason Code:

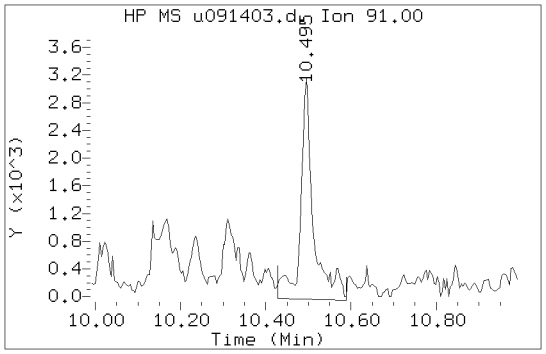
BEFORE

MASS
91
AREA
6875
HEIGHT
3187
18-Sep-2023
12:30
linh
pham



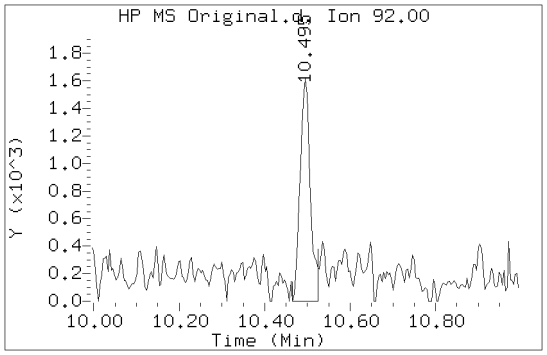

AFTER

MASS
91
AREA
6875
HEIGHT
3187
18-Sep-2023
12:30
linh
pham



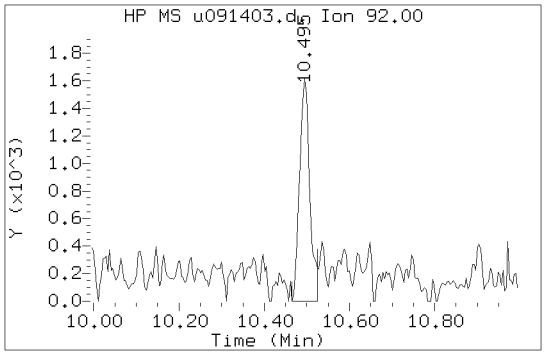

BEFORE

MASS
92
AREA
2737
HEIGHT
1614
18-Sep-2023
12:30
linh
pham



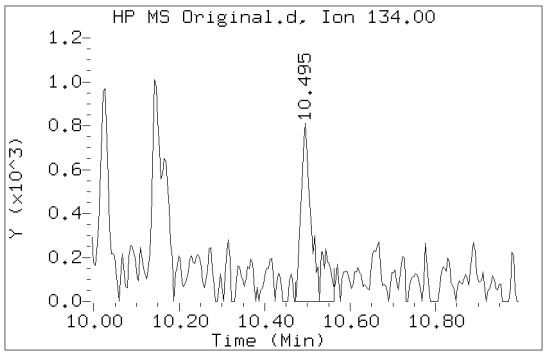

AFTER

MASS
92
AREA
2737
HEIGHT
1614
18-Sep-2023
12:30
linh
pham



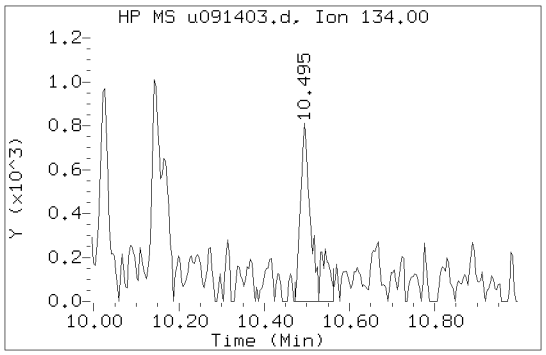

BEFORE

MASS
134
AREA
1609
HEIGHT
813
18-Sep-2023
12:30
linh
pham




AFTER

MASS
134
AREA
1609
HEIGHT
813
18-Sep-2023
12:30
linh
pham



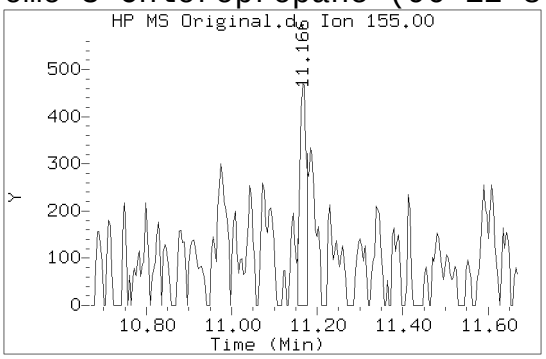
Data File : \\nahstws005\target\chem\voa9.i\u230914.b\u091403.d
Inj Date : 14-SEP-2023 16:09
InstruID : VOA9.i
LabSampID : VSTD000.5

## 1,2-Dibromo-3-Chloropropane (96-12-8)

Reason Code:

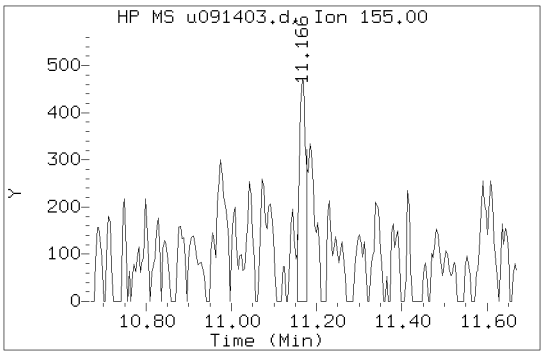
BEFORE

MASS
155
AREA
527
HEIGHT
470
18-Sep-2023
12:30
linh
pham



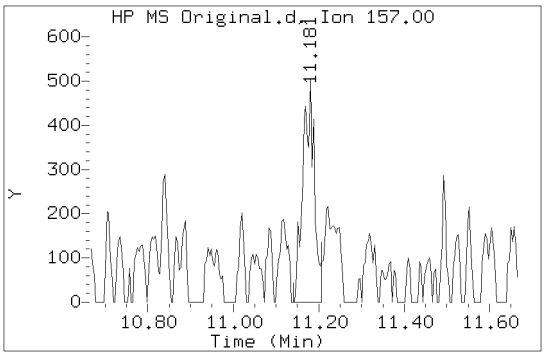

AFTER

MASS
155
AREA
527
HEIGHT
470
18-Sep-2023
12:30
linh
pham



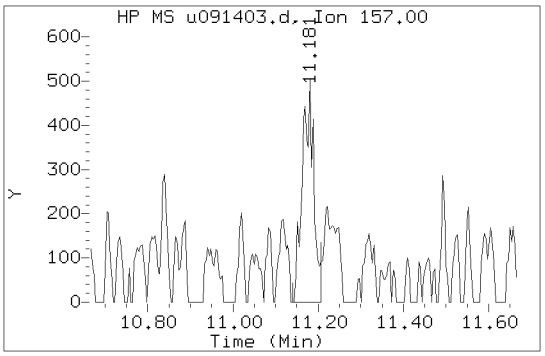

BEFORE

MASS
157
AREA
947
HEIGHT
503
18-Sep-2023
12:30
linh
pham



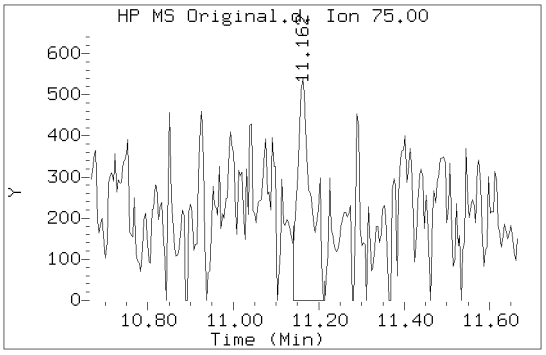

AFTER

MASS
157
AREA
947
HEIGHT
503
18-Sep-2023
12:30
linh
pham



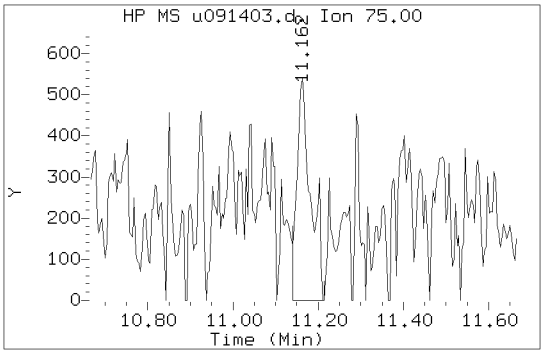

BEFORE

MASS
75
AREA
1237
HEIGHT
539
18-Sep-2023
12:30
linh
pham




AFTER

MASS
75
AREA
1237
HEIGHT
539
18-Sep-2023
12:30
linh
pham

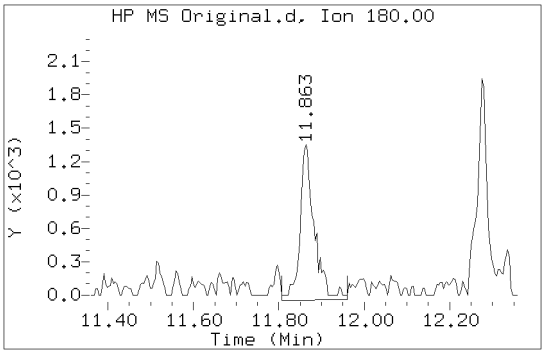



## 1,2,4-Trichlorobenzene (120-82-1)

Reason Code:

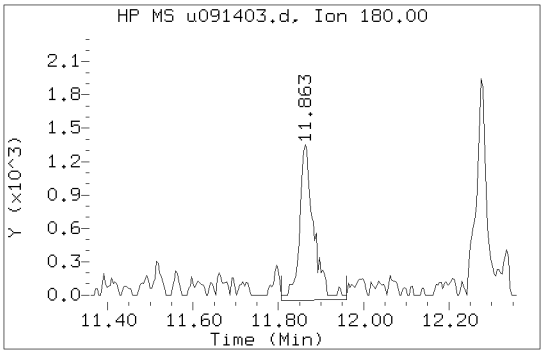
BEFORE

MASS
180
AREA
3346
HEIGHT
1400
18-Sep-2023
12:30
linh
pham




AFTER

MASS
180
AREA
3346
HEIGHT
1400
18-Sep-2023
12:30
linh
pham



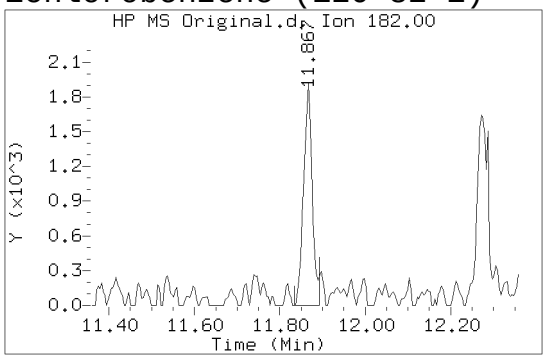
Data File : \\nahstws005\target\chem\voa9.i\u230914.b\u091403.d
Inj Date : 14-SEP-2023 16:09
InstruID : VOA9.i
LabSampID : VSTD000.5

## 1,2,4-Trichlorobenzene (120-82-1)

Reason Code:

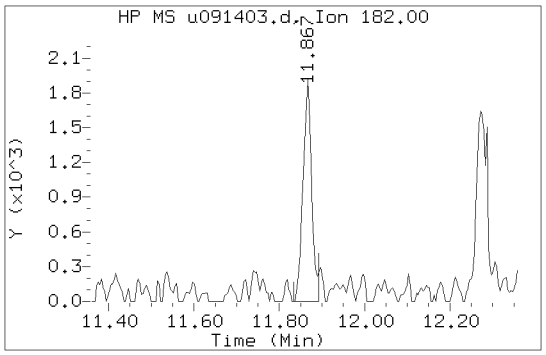
BEFORE

MASS
182
AREA
2793
HEIGHT
1914
18-Sep-2023
12:30
linh
pham



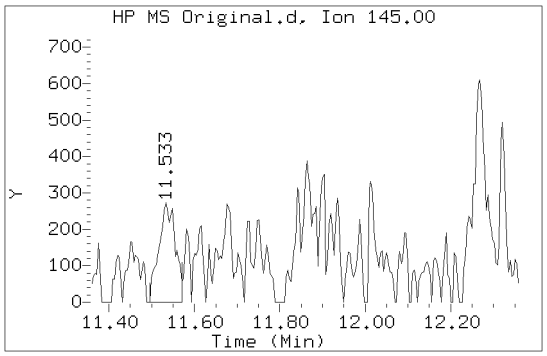

AFTER

MASS
182
AREA
2793
HEIGHT
1914
18-Sep-2023
12:30
linh
pham



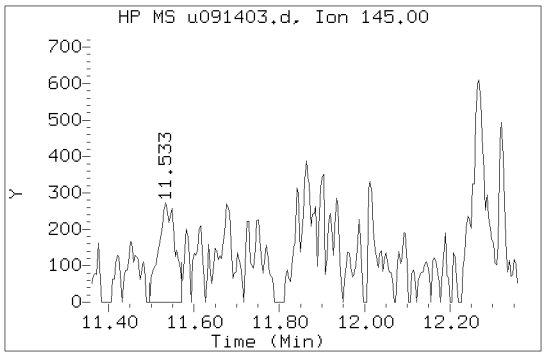

BEFORE

MASS
145
AREA
733
HEIGHT
273
18-Sep-2023
12:30
linh
pham




AFTER

MASS
145
AREA
733
HEIGHT
273
18-Sep-2023
12:30
linh
pham

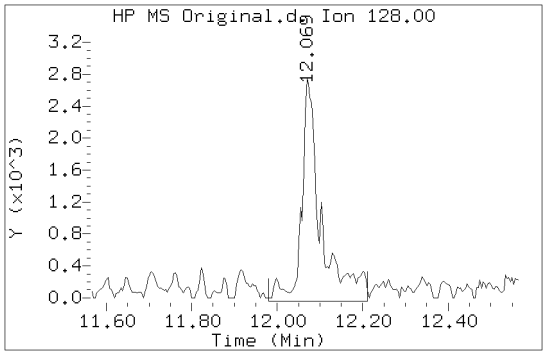



## Naphthalene (91-20-3)

Reason Code:

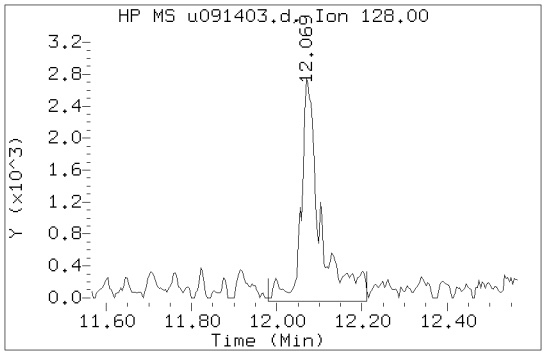
BEFORE

MASS
128
AREA
8877
HEIGHT
2783
18-Sep-2023
12:30
linh
pham




AFTER

MASS
128
AREA
8877
HEIGHT
2783
18-Sep-2023
12:30
linh
pham

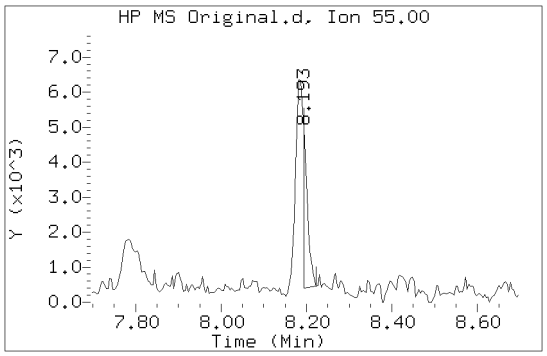



## 1-Chlorohexane (544-10-5)

Reason Code:

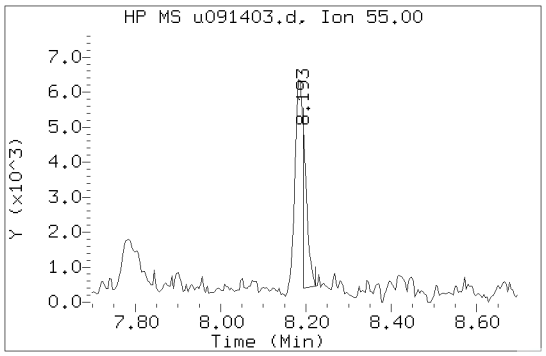
BEFORE

MASS
55
AREA
3356
HEIGHT
4579
18-Sep-2023
12:30
linh
pham




AFTER

MASS
55
AREA
3356
HEIGHT
4579
18-Sep-2023
12:30
linh
pham



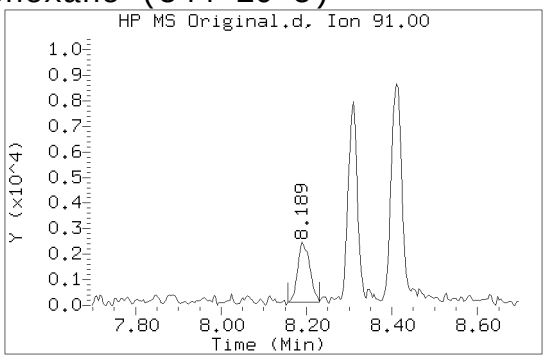
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Inj Date : 14-SEP-2023 16:09
InstruID : VOA9.i
LabSampID : VSTD000.5

## 1-Chlorohexane (544-10-5)

Reason Code:

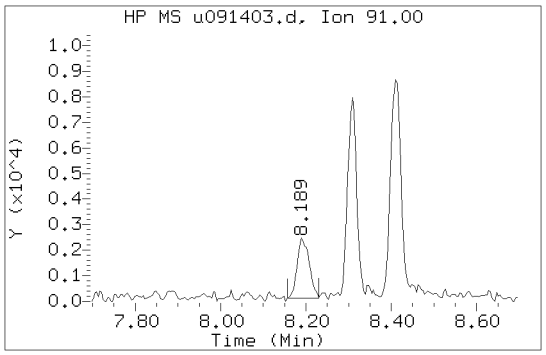
BEFORE

MASS
91
AREA
4622
HEIGHT
2357
18-Sep-2023
12:30
linh
pham




AFTER

MASS
91
AREA
4622
HEIGHT
2357
18-Sep-2023
12:30
linh
pham

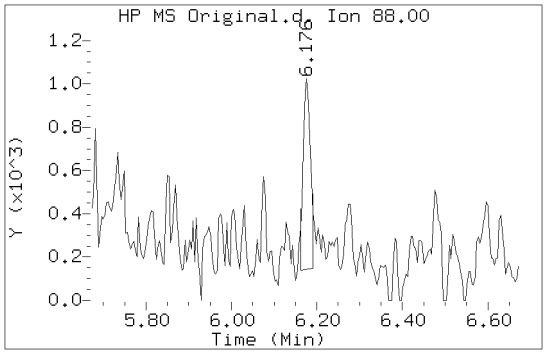



## 1,4-Dioxane ()

Reason Code:

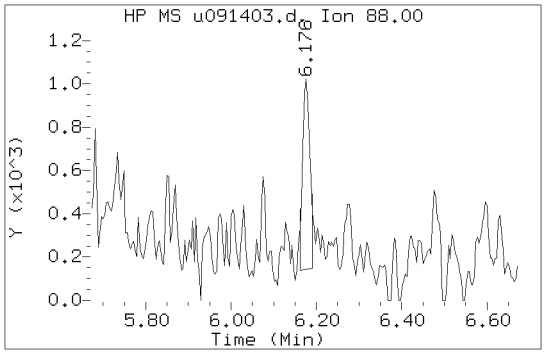
BEFORE

MASS
88
AREA
1082
HEIGHT
881
18-Sep-2023
12:30
linh
pham



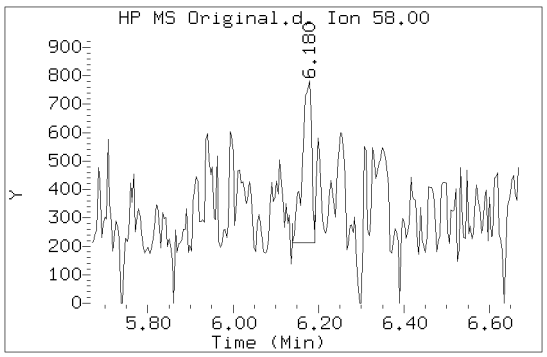

AFTER

MASS
88
AREA
1082
HEIGHT
881
18-Sep-2023
12:30
linh
pham



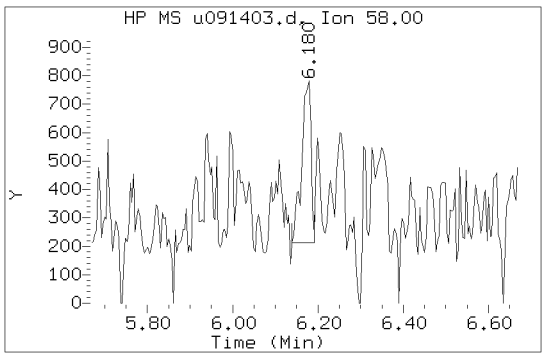

BEFORE

MASS
58
AREA
890
HEIGHT
569
18-Sep-2023
12:30
linh
pham




AFTER

MASS
58
AREA
890
HEIGHT
569
18-Sep-2023
12:30
linh
pham

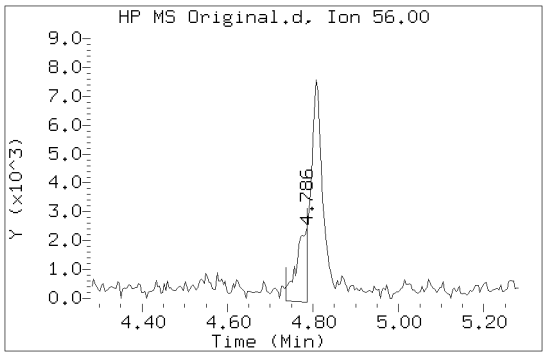



## Cyclohexane (110-82-7)

Reason Code:

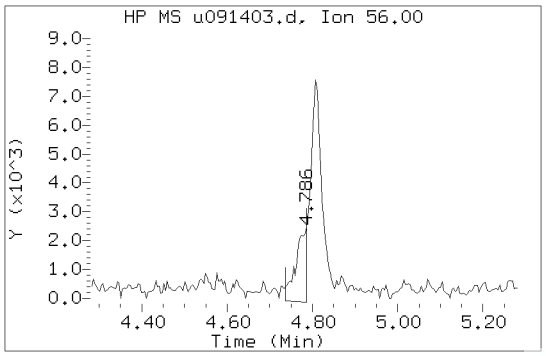
BEFORE

MASS
56
AREA
4570
HEIGHT
2576
18-Sep-2023
12:30
linh
pham



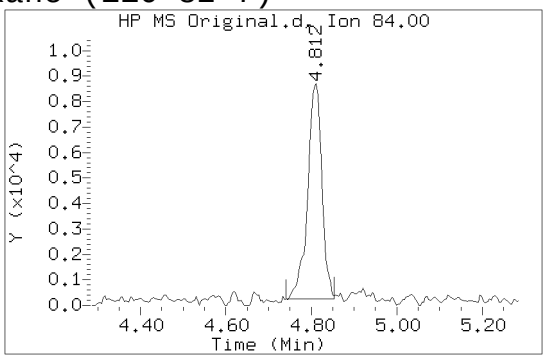

AFTER

MASS
56
AREA
4570
HEIGHT
2576
18-Sep-2023
12:30
linh
pham

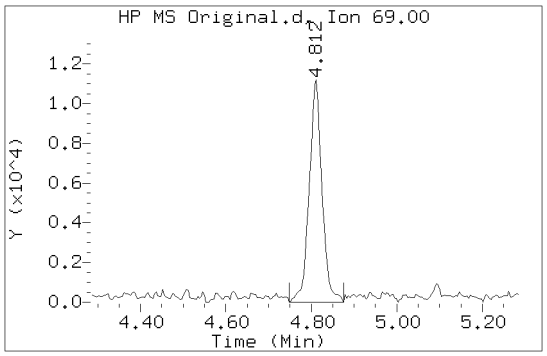


Data File : \\nahstws005\target\chem\voa9.i\u230914.b\u091403.d
Inj Date : 14-SEP-2023 16:09
InstruID : VOA9.i
LabSampID : VSTD000.5

## Cyclohexane (110-82-7)

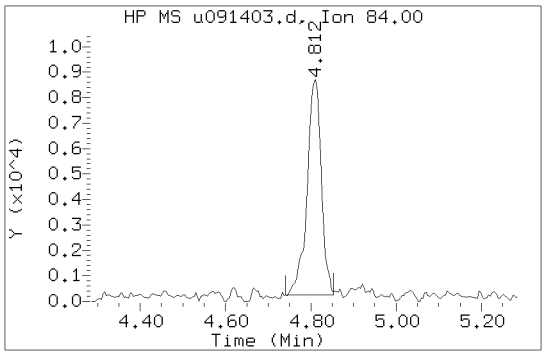



BEFORE
MASS
84
AREA
19761
HEIGHT
8461
18-Sep-2023
12:30
linh
pham

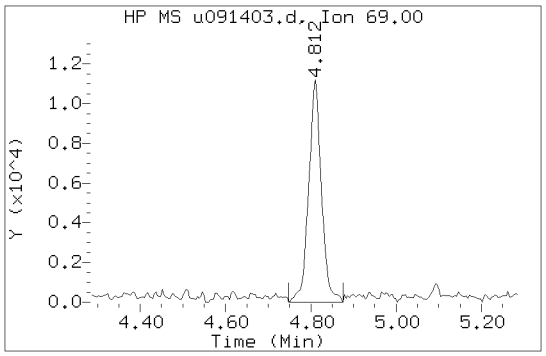



BEFORE
MASS
69
AREA
23379
HEIGHT
11194
18-Sep-2023
12:30
linh
pham

Reason Code:

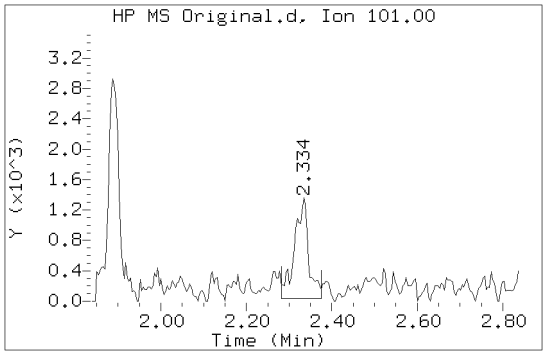



AFTER
MASS
84
AREA
19761
HEIGHT
8461
18-Sep-2023
12:30
linh
pham

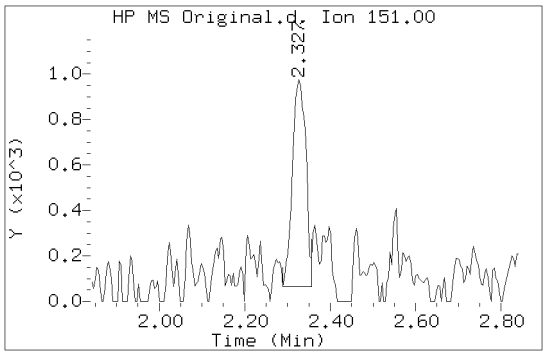



AFTER
MASS
69
AREA
23379
HEIGHT
11194
18-Sep-2023
12:30
linh
pham

## Freon TF (76-13-1)

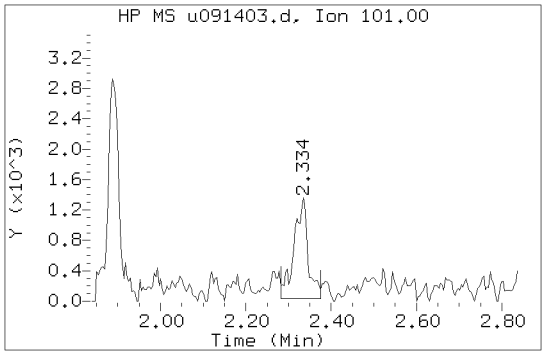



BEFORE
MASS
101
AREA
3073
HEIGHT
1330
18-Sep-2023
12:30
linh
pham

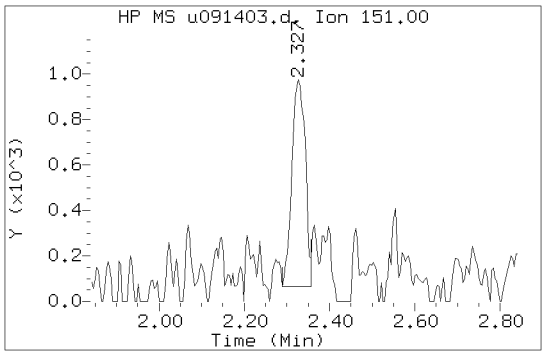



BEFORE
MASS
151
AREA
2005
HEIGHT
911
18-Sep-2023
12:30
linh
pham

Reason Code:




AFTER
MASS
101
AREA
3073
HEIGHT
1330
18-Sep-2023
12:30
linh
pham




AFTER
MASS
151
AREA
2005
HEIGHT
911
18-Sep-2023
12:30
linh
pham

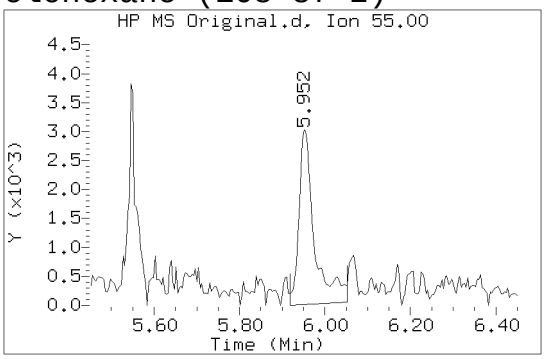
Data File : \\nahstws005\target\chem\voa9.i\u230914.b\u091403.d
Inj Date : 14-SEP-2023 16:09
InstruID : VOA9.i
LabSampID : VSTD000.5

## Methylcyclohexane (108-87-2)

Reason Code:

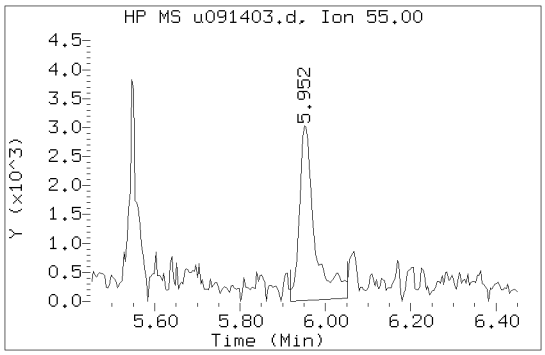
BEFORE

MASS
55
AREA
7709
HEIGHT
3017
18-Sep-2023
12:30
linh
pham



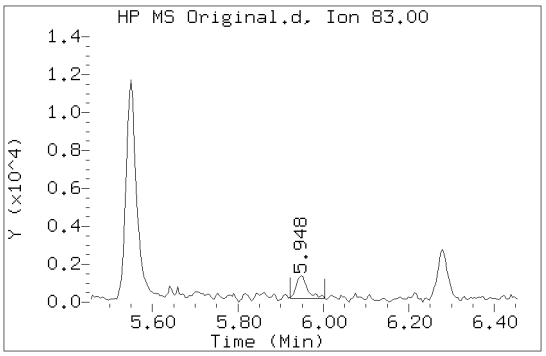

AFTER

MASS
55
AREA
7709
HEIGHT
3017
18-Sep-2023
12:30
linh
pham



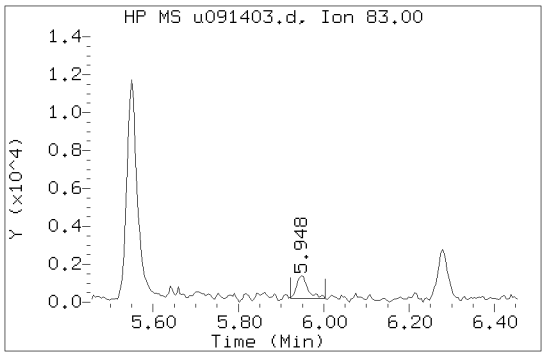

BEFORE

MASS
83
AREA
2258
HEIGHT
1213
18-Sep-2023
12:30
linh
pham




AFTER

MASS
83
AREA
2258
HEIGHT
1213
18-Sep-2023
12:30
linh
pham

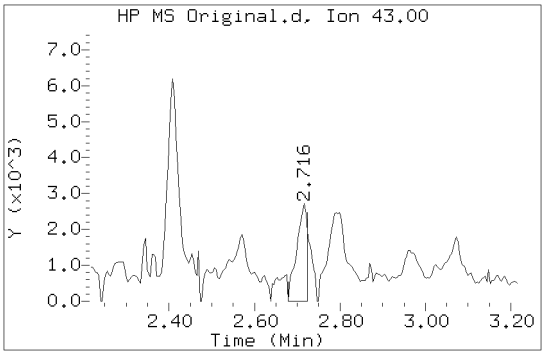



## Methyl Acetate (79-20-9)

Reason Code:

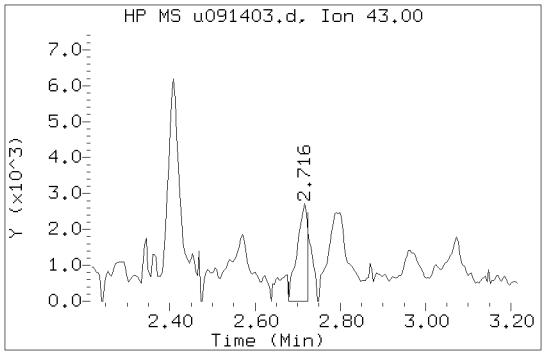
BEFORE

MASS
43
AREA
4575
HEIGHT
2716
18-Sep-2023
12:30
linh
pham



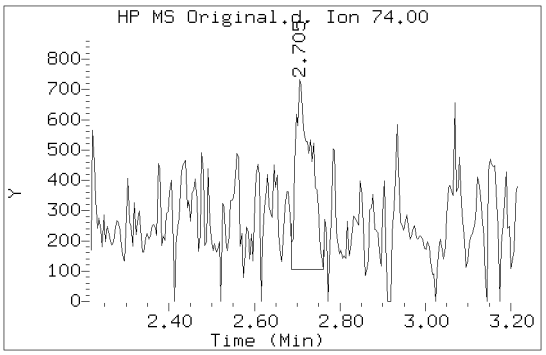

AFTER

MASS
43
AREA
4575
HEIGHT
2716
18-Sep-2023
12:30
linh
pham



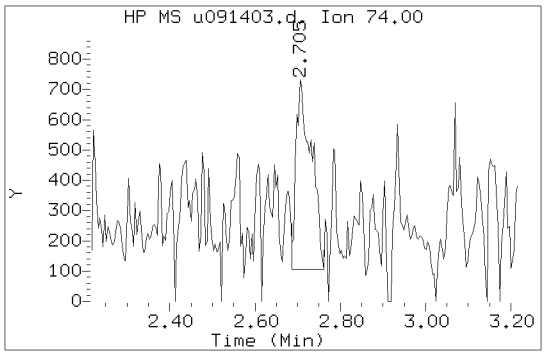

BEFORE

MASS
74
AREA
1565
HEIGHT
626
18-Sep-2023
12:30
linh
pham




AFTER

MASS
74
AREA
1565
HEIGHT
626
18-Sep-2023
12:30
linh
pham

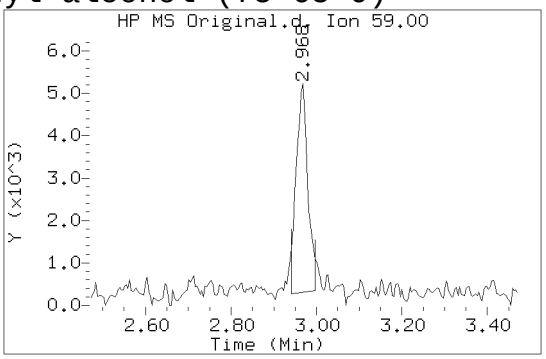


Data File : \\nahstws005\target\chem\voa9.i\u230914.b\u091403.d
Inj Date : 14-SEP-2023 16:09
InstruID : VOA9.i
LabSampID : VSTD000.5

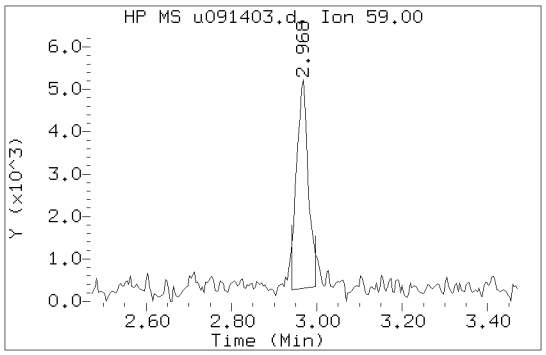
## Tert-Butyl alcohol (75-65-0)

Reason Code:

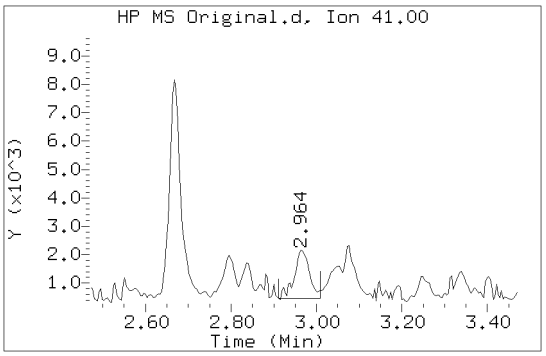
BEFORE
MASS
59
AREA
9516
HEIGHT
4923
18-Sep-2023
12:30
linh
pham



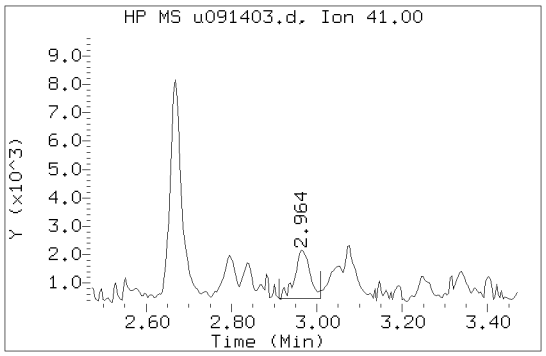

AFTER
MASS
59
AREA
9516
HEIGHT
4923
18-Sep-2023
12:30
linh
pham




BEFORE
MASS
41
AREA
4255
HEIGHT
1693
18-Sep-2023
12:30
linh
pham



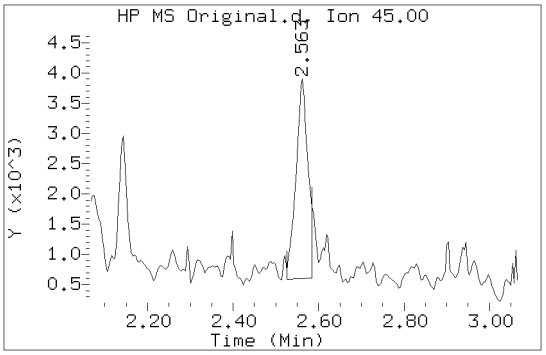

AFTER
MASS
41
AREA
4255
HEIGHT
1693
18-Sep-2023
12:30
linh
pham



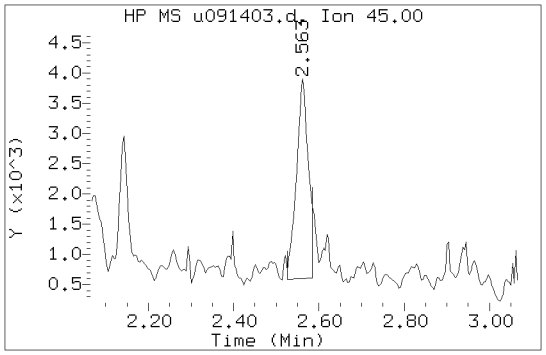

## Isopropyl Alcohol (67-63-0)

Reason Code:

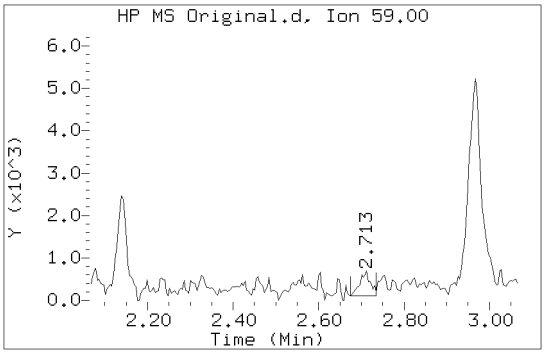
BEFORE
MASS
45
AREA
6576
HEIGHT
3298
18-Sep-2023
12:30
linh
pham



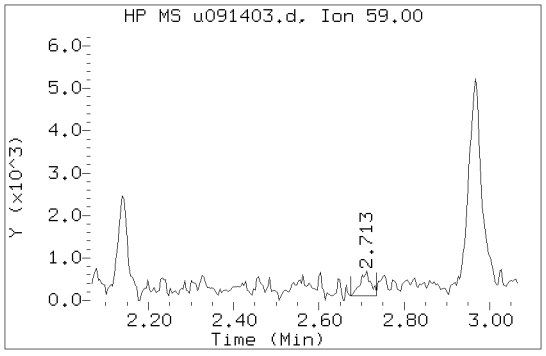

AFTER
MASS
45
AREA
6576
HEIGHT
3298
18-Sep-2023
12:30
linh
pham




BEFORE
MASS
59
AREA
968
HEIGHT
584
18-Sep-2023
12:30
linh
pham




AFTER
MASS
59
AREA
968
HEIGHT
584
18-Sep-2023
12:30
linh
pham



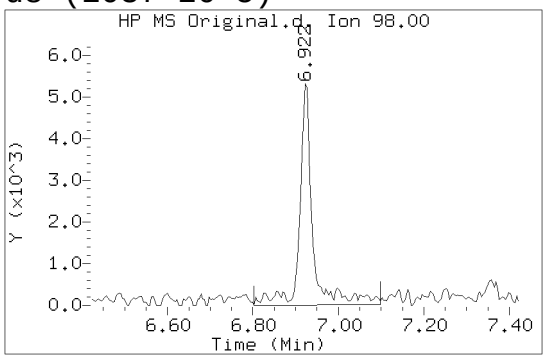
Data File : \\nahstws005\target\chem\voa9.i\u230914.b\u091403.d
Inj Date : 14-SEP-2023 16:09
InstruID : VOA9.i
LabSampID : VSTD000.5

## Toluene-d8 (2037-26-5)

Reason Code:

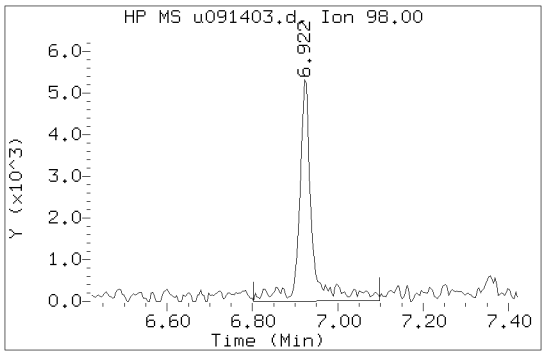
BEFORE

MASS
98
AREA
11691
HEIGHT
5323
18-Sep-2023
12:30
linh
pham



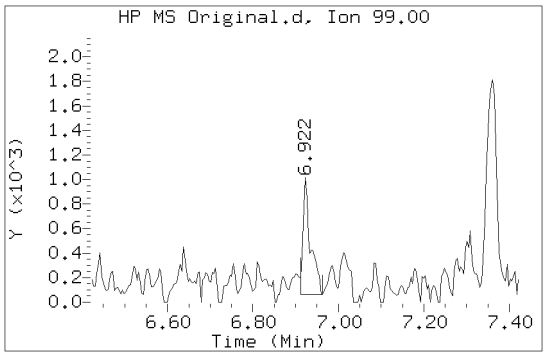

AFTER

MASS
98
AREA
11691
HEIGHT
5323
18-Sep-2023
12:30
linh
pham



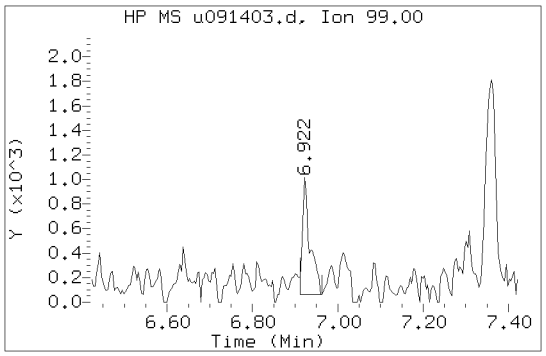

BEFORE

MASS
99
AREA
1192
HEIGHT
953
18-Sep-2023
12:30
linh
pham



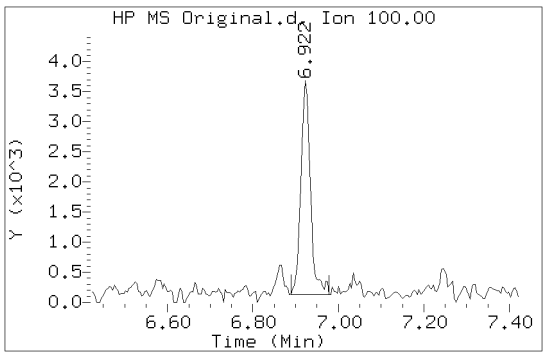

AFTER

MASS
99
AREA
1192
HEIGHT
953
18-Sep-2023
12:30
linh
pham



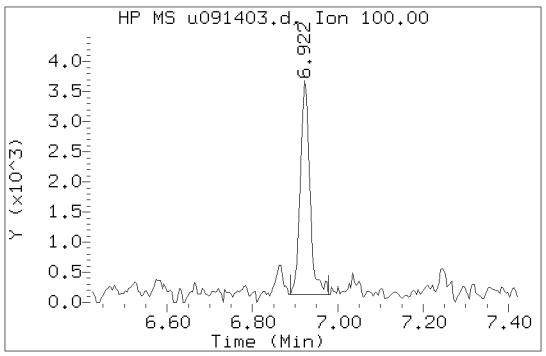

BEFORE

MASS
100
AREA
5706
HEIGHT
3557
18-Sep-2023
12:30
linh
pham




AFTER

MASS
100
AREA
5706
HEIGHT
3557
18-Sep-2023
12:30
linh
pham

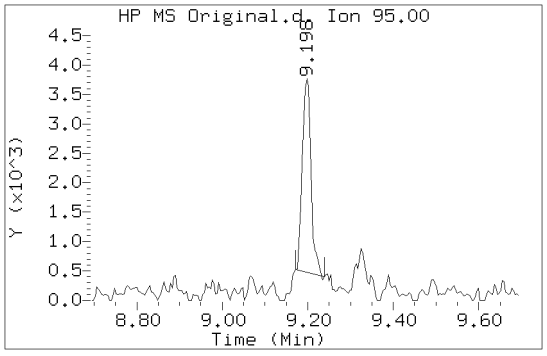



## 4-Bromofluorobenzene (460-00-4)

Reason Code:

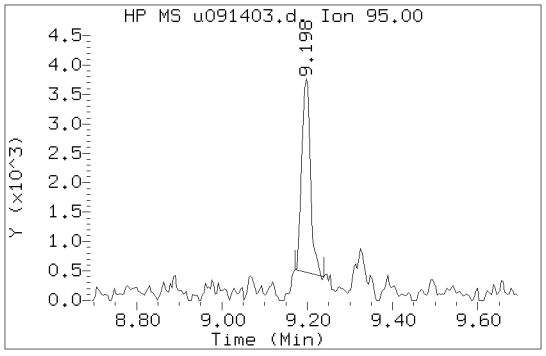
BEFORE

MASS
95
AREA
4793
HEIGHT
3293
18-Sep-2023
12:30
linh
pham




AFTER

MASS
95
AREA
4793
HEIGHT
3293
18-Sep-2023
12:30
linh
pham



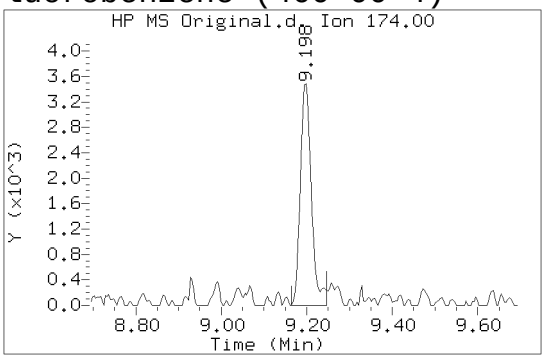
Data File : \\nahstws005\target\chem\voa9.i\u230914.b\u091403.d
Inj Date : 14-SEP-2023 16:09
InstruID : VOA9.i
LabSampID : VSTD000.5

4-Bromofluorobenzene (460-00-4)

Reason Code:

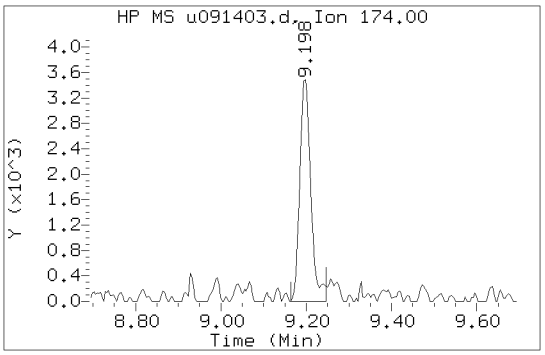
BEFORE

MASS
174
AREA
6424
HEIGHT
3486
18-Sep-2023
12:30
linh
pham



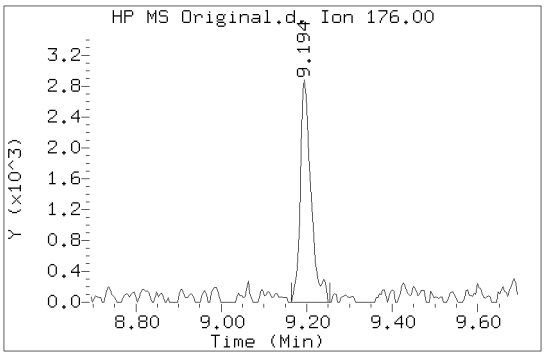

AFTER

MASS
174
AREA
6424
HEIGHT
3486
18-Sep-2023
12:30
linh
pham



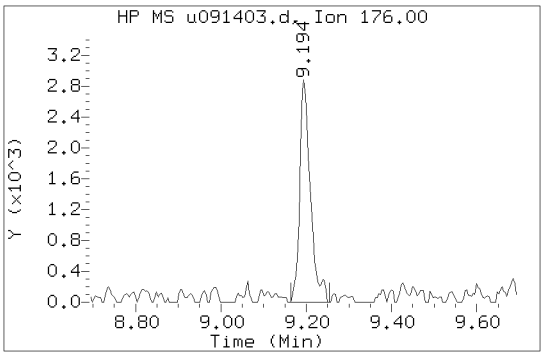

BEFORE

MASS
176
AREA
5114
HEIGHT
2882
18-Sep-2023
12:30
linh
pham




AFTER

MASS
176
AREA
5114
HEIGHT
2882
18-Sep-2023
12:30
linh
pham



Data File: \\NAHSTWS005\Target\chem\voa9.i\U230914.b\U091404.D  Page 1
Report Date: 18-Sep-2023 12:31

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa9.i\U230914.b\U091404.D
Lab Smp Id: VSTD001  Client Smp ID: VSTD001
Inj Date  : 14-SEP-2023 16:53
Operator  : PC  Inst ID: VOA9.i
Smp Info  : VSTD001;VSTD001;1;3;
Misc Info : V9;WATER;0;1;
Comment   :
Method    : \\NAHSTWS005\Target\chem\voa9.i\U230914.b\8260C.m
Meth Date : 18-Sep-2023 12:31 VOA9.i  Quant Type: ISTD
Cal Date  : 14-SEP-2023 16:09  Cal File: U091403.D
Als bottle: 5  Calibration Sample, Level: 3
Dil Factor: 1.00000
Integrator: HP RTE  Compound Sublist: 08260V9.sub
Target Version:  4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

| Name | Value | Description |
|---|---|---|
| DF | 1.000 | Dilution Factor |
| Uf | 5.000 | ng unit correction factor |
| Vo | 5.000 | sample purged |
| Cpnd Variable | | Local Compound Variable |

| | Compounds | QUANT SIG MASS | RT | EXP RT | REL RT | RESPONSE | AMOUNTS CAL-AMT ( ug/l) | ON-COL ( ug/l) |
|---|---|---|---|---|---|---|---|---|
| * 1 | Pentafluorobenzene | 168 | 4.815 | 4.815 | (1.000) | 642537 | 50.0000 | |
| 2 | Dichlorodifluoromethane | 85 | 1.164 | 1.164 | (0.242) | 6349 | 1.00000 | 2.21 |
| 3 | Chloromethane | 50 | 1.295 | 1.295 | (0.269) | 14060 | 1.00000 | 0.23 |
| 5 | Vinyl Chloride | 62 | 1.377 | 1.377 | (0.286) | 6660 | 1.00000 | 0.81 |
| 6 | Bromomethane | 94 | 1.625 | 1.625 | (0.338) | 5410 | 1.00000 | 1.79 |
| 7 | Chloroethane | 64 | 1.700 | 1.700 | (0.353) | 5596 | 1.00000 | 0.93 |
| 8 | Trichlorofluoromethane | 101 | 1.895 | 1.895 | (0.394) | 9002 | 1.00000 | 0.86(M) |
| 9 | Acrolein | 56 | 2.266 | 2.266 | (0.471) | 1174 | 2.00000 | 2.12(M) |
| 10 | Acetone | 43 | 2.412 | 2.412 | (0.501) | 11344 | 2.00000 | 1.39(M) |
| 11 | 1,1-Dichloroethene | 96 | 2.330 | 2.330 | (0.484) | 6369 | 1.00000 | 1.00(M) |
| 15 | Iodomethane | 142 | 2.472 | 2.472 | (0.513) | 6809 | 2.00000 | 5.21(M) |
| 16 | Acrylonitrile | 53 | 3.072 | 3.072 | (0.638) | 7981 | 2.00000 | 2.12 |
| 17 | Methylene Chloride | 84 | 2.794 | 2.794 | (0.580) | 11952 | 1.00000 | 3.12(M) |
| 18 | Methyl tert-butyl ether | 73 | 3.079 | 3.079 | (0.640) | 17374 | 1.00000 | 0.96 |
| 19 | Carbon Disulfide | 76 | 2.521 | 2.521 | (0.524) | 27613 | 2.00000 | 1.60 |
| 20 | trans-1,2-Dichloroethene | 96 | 3.061 | 3.061 | (0.636) | 5046 | 1.00000 | 0.75 |
| 21 | Vinyl Acetate | 43 | 3.615 | 3.615 | (0.751) | 38753 | 2.00000 | 1.64 |
| 22 | 1,1-Dichloroethane | 63 | 3.510 | 3.510 | (0.729) | 11812 | 1.00000 | 0.88 |
| 24 | 2-Butanone | 43 | 4.271 | 4.271 | (0.887) | 7789 | 2.00000 | 1.99 |
| 26 | 2,2-Dichloropropane | 77 | 4.181 | 4.181 | (0.868) | 6514 | 1.00000 | 0.80(M) |

| | | | | | | |
|---|---|---|---|---|---|---|
| 27 cis-1,2-Dichloroethene | 96 | 4.193 | 4.193 (0.871) | 6847 | 1.00000 | 0.89 |
| 28 Chloroform | 83 | 4.571 | 4.571 (0.949) | 11977 | 1.00000 | 0.92 |

Data File: \\NAHSTWS005\Target\chem\voa9.i\U230914.b\U091404.D Page 2
Report Date: 18-Sep-2023 12:31

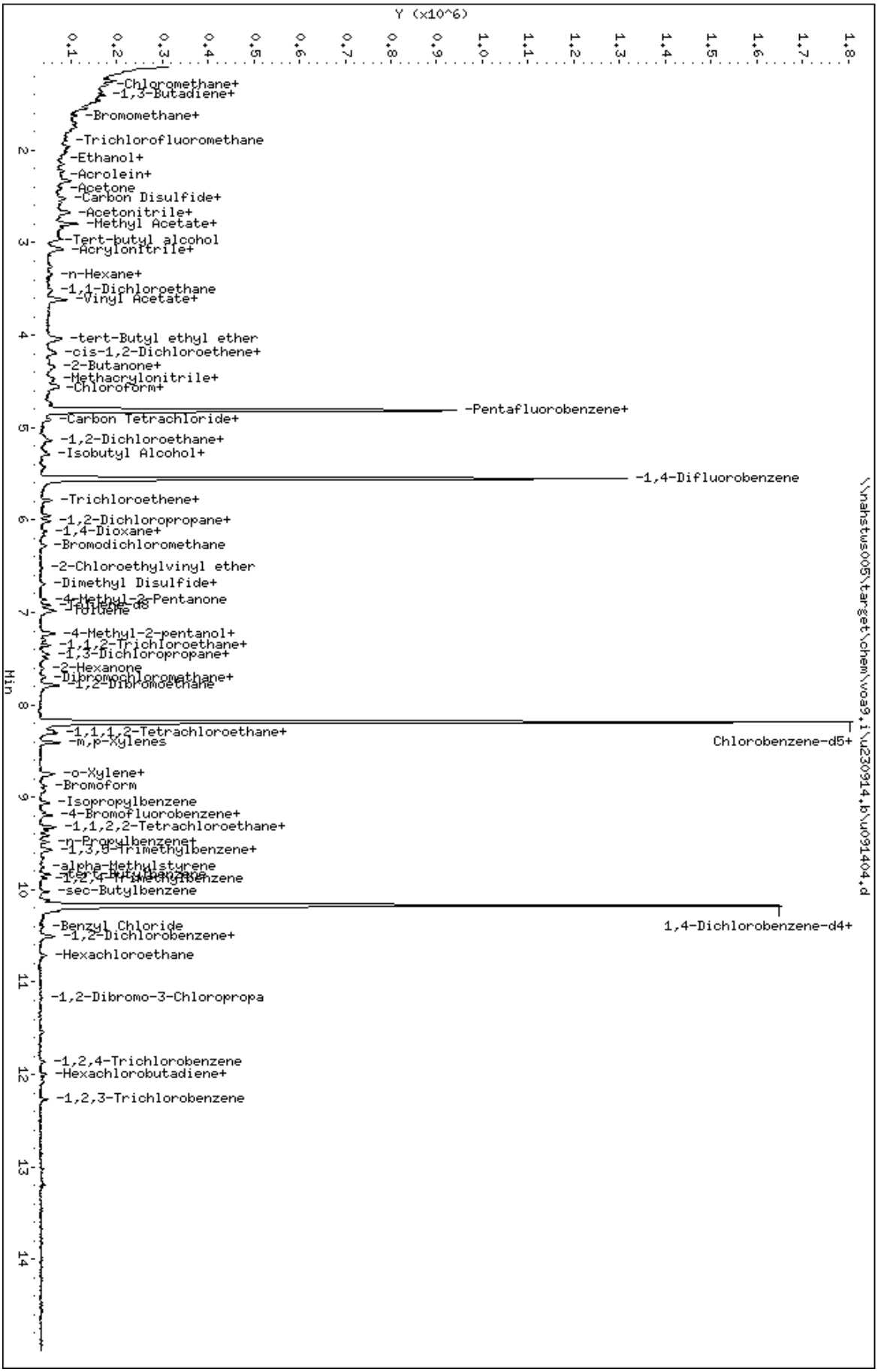
| | Compounds | QUANT SIG MASS | RT | EXP RT | REL RT | RESPONSE | AMOUNTS CAL-AMT ( ug/l) | ON-COL ( ug/l) |
|---|---|---|---|---|---|---|---|---|
| | 29 Bromochloromethane | 128 | 4.470 | 4.470 | (0.928) | 3900 | 1.00000 | 0.97(M) |
| $ | 30 Dibromofluoromethane | 113 | 4.751 | 4.751 | (0.987) | 5321 | 1.00000 | 1.11 |
| | 31 1,1,1-Trichloroethane | 97 | 4.744 | 4.744 | (0.985) | 7483 | 1.00000 | 0.84 |
| | 32 1,1-Dichloropropene | 75 | 4.924 | 4.924 | (0.887) | 7313 | 1.00000 | 0.93(M) |
| | 33 1,2-Dichloroethane | 62 | 5.179 | 5.179 | (0.933) | 9383 | 1.00000 | 0.98 |
| | 34 Carbon Tetrachloride | 117 | 4.912 | 4.912 | (0.885) | 5878 | 1.00000 | 0.84 |
| $ | 35 1,2-Dichloroethane-d4 | 65 | 5.104 | 5.104 | (1.060) | 8172 | 1.00000 | 1.08 |
| * | 36 1,4-Difluorobenzene | 114 | 5.554 | 5.554 | (1.000) | 981491 | 50.0000 | |
| | 37 Benzene | 78 | 5.137 | 5.137 | (0.925) | 22392 | 1.00000 | 0.90 |
| | 38 Trichloroethene | 130 | 5.786 | 5.786 | (1.042) | 8076 | 1.00000 | 1.12 |
| | 39 Bromodichloromethane | 83 | 6.273 | 6.273 | (1.130) | 6467 | 1.00000 | 0.80 |
| | 41 2-Chloroethylvinyl ether | 63 | 6.543 | 6.543 | (1.178) | 75 | 2.00000 | 2.62(M) |
| | 42 1,2-Dichloropropane | 63 | 6.007 | 6.007 | (1.082) | 5092 | 1.00000 | 0.78(M) |
| | 44 Dibromomethane | 93 | 6.123 | 6.123 | (1.103) | 4246 | 1.00000 | 0.94(M) |
| | 45 4-Methyl-2-Pentanone | 43 | 6.862 | 6.862 | (0.838) | 7941 | 2.00000 | 3.67 |
| | 46 cis-1,3-Dichloropropene | 75 | 6.697 | 6.697 | (1.206) | 6792 | 1.00000 | 3.79(M) |
| * | 47 Chlorobenzene-d5 | 117 | 8.185 | 8.185 | (1.000) | 911378 | 50.0000 | |
| $ | 48 Toluene-d8 | 98 | 6.922 | 6.922 | (0.846) | 19157 | 1.00000 | 0.95(M) |
| | 50 Toluene | 91 | 6.982 | 6.982 | (0.853) | 19537 | 1.00000 | 0.79(M) |
| | 51 trans-1,3-Dichloropropene | 75 | 7.199 | 7.199 | (1.296) | 5013 | 1.00000 | 2.98(M) |
| | 52 2-Hexanone | 43 | 7.604 | 7.604 | (0.929) | 6891 | 2.00000 | 1.66 |
| | 53 1,1,2-Trichloroethane | 83 | 7.357 | 7.357 | (0.899) | 5278 | 1.00000 | 0.98 |
| | 54 1,3-Dichloropropane | 76 | 7.503 | 7.503 | (0.917) | 9793 | 1.00000 | 0.91 |
| | 55 Dibromochloromethane | 129 | 7.694 | 7.694 | (0.940) | 5067 | 1.00000 | 0.79 |
| | 56 Tetrachloroethene | 164 | 7.458 | 7.458 | (0.911) | 5362 | 1.00000 | 0.94 |
| | 57 1,2-Dibromoethane | 107 | 7.788 | 7.788 | (0.951) | 5889 | 1.00000 | 0.91 |
| | 58 1-Chlorohexane | 55 | 8.193 | 8.193 | (1.475) | 5582 | 1.00000 | 0.94(M) |
| | 59 Chlorobenzene | 112 | 8.208 | 8.208 | (1.003) | 16006 | 1.00000 | 0.88 |
| | 60 1,1,1,2-Tetrachloroethane | 131 | 8.279 | 8.279 | (1.011) | 5390 | 1.00000 | 0.88 |
| | 61 Ethylbenzene | 106 | 8.309 | 8.309 | (1.015) | 6608 | 1.00000 | 0.81(M) |
| | 62 m,p-Xylenes | 106 | 8.410 | 8.410 | (1.027) | 17428 | 2.00000 | 1.71(M) |
| | 63 o-Xylene | 106 | 8.747 | 8.747 | (1.069) | 10098 | 1.00000 | 0.95(M) |
| | 64 Styrene | 104 | 8.766 | 8.766 | (1.071) | 13244 | 1.00000 | 0.81(M) |
| | 66 Bromoform | 173 | 8.920 | 8.920 | (1.090) | 3346 | 1.00000 | 4.21(T) |
| | 67 Isopropylbenzene | 105 | 9.062 | 9.062 | (1.107) | 19078 | 1.00000 | 2.23(M) |
| | 68 1,1,2,2-Tetrachloroethane | 83 | 9.328 | 9.328 | (0.917) | 7969 | 1.00000 | 0.97 |
| $ | 69 4-Bromofluorobenzene | 95 | 9.193 | 9.193 | (1.123) | 7585 | 1.00000 | 0.76 |
| * | 70 1,4-Dichlorobenzene-d4 | 152 | 10.172 | 10.172 | (1.000) | 422751 | 50.0000 | |
| | 71 1,2,3-Trichloropropane | 75 | 9.362 | 9.362 | (0.920) | 5812 | 1.00000 | 0.83 |
| | 73 n-Propylbenzene | 91 | 9.411 | 9.411 | (0.925) | 15066 | 1.00000 | 3.55(M) |
| | 74 Bromobenzene | 156 | 9.317 | 9.317 | (0.916) | 6745 | 1.00000 | 1.00 |
| | 75 1,3,5-Trimethylbenzene | 105 | 9.565 | 9.565 | (0.940) | 13057 | 1.00000 | 0.82(M) |
| | 76 2-Chlorotoluene | 91 | 9.482 | 9.482 | (0.932) | 13160 | 1.00000 | 0.83(M) |
| | 77 4-Chlorotoluene | 91 | 9.580 | 9.580 | (0.942) | 14951 | 1.00000 | 0.81(M) |
| | 78 tert-Butylbenzene | 119 | 9.835 | 9.835 | (0.967) | 11393 | 1.00000 | 0.74(M) |
| | 79 1,2,4-Trimethylbenzene | 105 | 9.876 | 9.876 | (0.971) | 12753 | 1.00000 | 0.78(M) |
| | 81 sec-Butylbenzene | 105 | 10.022 | 10.022 | (0.985) | 14747 | 1.00000 | 2.47(M) |
| | 82 p-Isopropyltoluene | 119 | 10.142 | 10.142 | (0.997) | 10971 | 1.00000 | 2.43(M) |
| | 83 1,3-Dichlorobenzene | 146 | 10.116 | 10.116 | (0.994) | 9655 | 1.00000 | 0.81 |
| | 84 1,4-Dichlorobenzene | 146 | 10.191 | 10.191 | (1.002) | 13945 | 1.00000 | 1.04 |
| | 87 n-Butylbenzene | 91 | 10.491 | 10.491 | (1.031) | 10524 | 1.00000 | 2.74(M) |
| | 88 1,2-Dichlorobenzene | 146 | 10.506 | 10.506 | (1.033) | 10635 | 1.00000 | 0.87 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 89 | 1,2-Dibromo-3-Chloropropane | 155 | 11.173 | 11.173 (1.098) | 1143 | 1.00000 | 1.11 |
| 90 | 1,2,4-Trichlorobenzene | 180 | 11.859 | 11.859 (1.166) | 5578 | 1.00000 | 0.80(M) |

| | Compounds | QUANT SIG MASS | RT | EXP RT | REL RT | RESPONSE | AMOUNTS CAL-AMT ( ug/l) | ON-COL ( ug/l) |
|---|---|---|---|---|---|---|---|---|
| | 91 Hexachlorobutadiene | 225 | 11.998 | 11.998 | (1.179) | 2767 | 1.00000 | 0.89 |
| | 92 Naphthalene | 128 | 12.072 | 12.072 | (1.187) | 13176 | 1.00000 | 3.39(M) |
| | 93 1,2,3-Trichlorobenzene | 180 | 12.271 | 12.271 | (1.206) | 5382 | 1.00000 | 0.82 |
| M | 94 1,2-Dichloroethylene (total) | 96 | | | | 11893 | 2.00000 | |
| M | 95 Xylenes (total) | 106 | | | | 27526 | 3.00000 | |
| | 135 1,4-Dioxane | 88 | 6.176 | 6.176 | (1.283) | 1976 | 20.0000 | 21.15(M) |
| | 141 Cyclohexane | 56 | 4.796 | 4.796 | (0.996) | 7153 | 1.00000 | 1.36(M) |
| | 138 Freon TF | 101 | 2.337 | 2.337 | (0.485) | 4663 | 1.00000 | 1.06(M) |
| | 140 1,3-Butadiene | 54 | 1.400 | 1.400 | (0.291) | 6763 | 1.00000 | 0.89(M) |
| | 147 Methylcyclohexane | 55 | 5.951 | 5.951 | (1.072) | 10616 | 1.00000 | 0.73(M) |
| | 146 Methyl Acetate | 43 | 2.720 | 2.720 | (0.565) | 7958 | 1.00000 | 1.02 |
| | 148 Tert-Butyl alcohol | 59 | 2.971 | 2.971 | (0.617) | 12915 | 20.0000 | 16.40(a) |

QC Flag Legend

T - Target compound detected outside RT window.
a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.




Data File: \\nahstws005\target\chem\voa9,i\u230914,b\u091404.d
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Client ID: VSTD001
Sample Info: VSTD001;VSTD001;1;3;
Purge Volume: 5.0
Column phase: DB624

\\nahstws005\target\chem\voa9,i\u230914,b\u091404.d

Instrument: VOA9,i
Operator: PC
Column diameter: 0.18

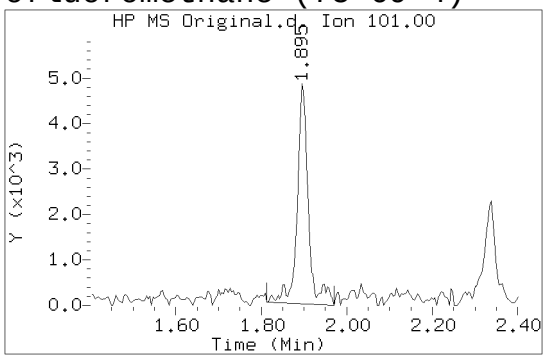
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InstruID : VOA9.i
LabSampID : VSTD001

## Trichlorofluoromethane (75-69-4)

Reason Code:

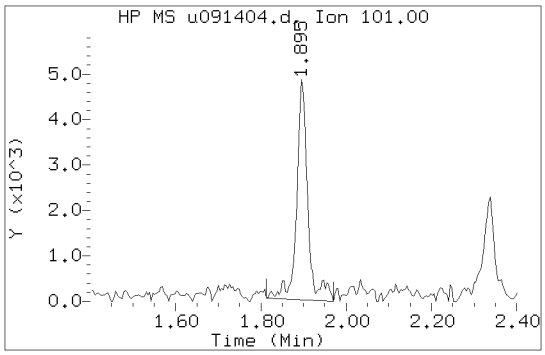
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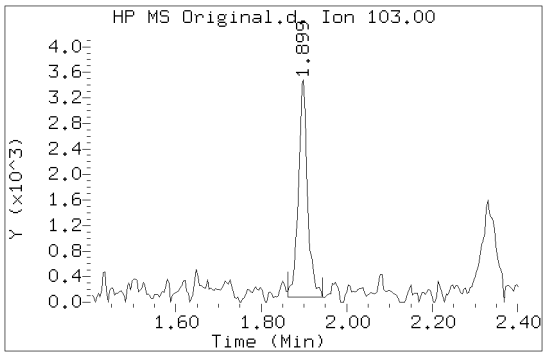

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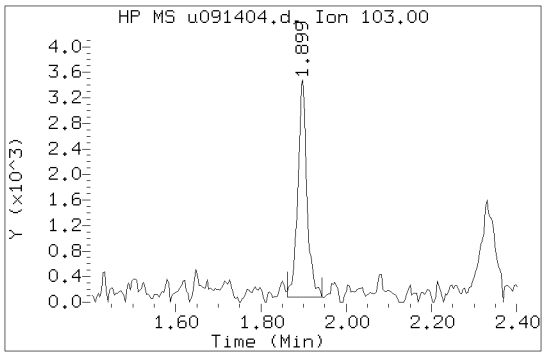

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AFTER

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18-Sep-2023
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pham

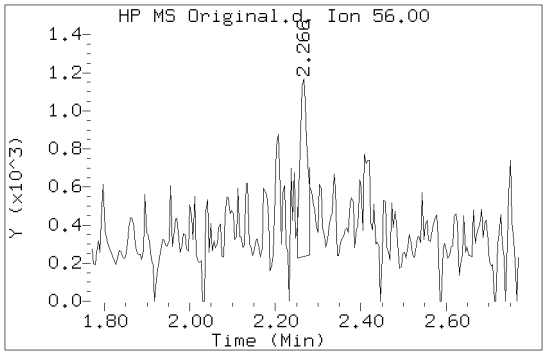



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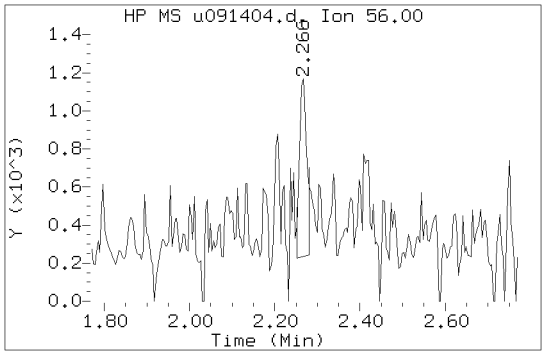
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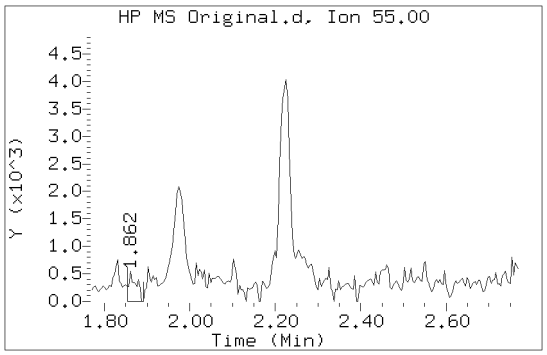

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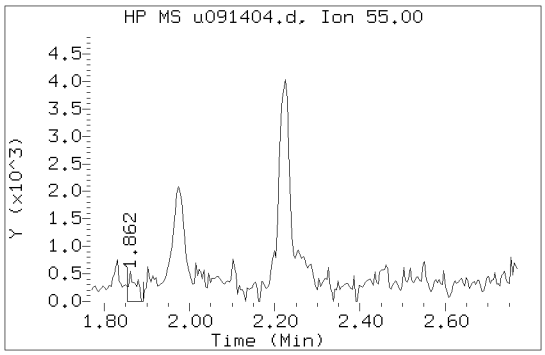

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AFTER

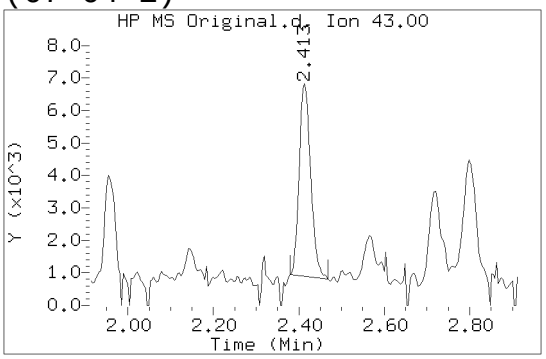
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InstruID : VOA9.i
LabSampID : VSTD001

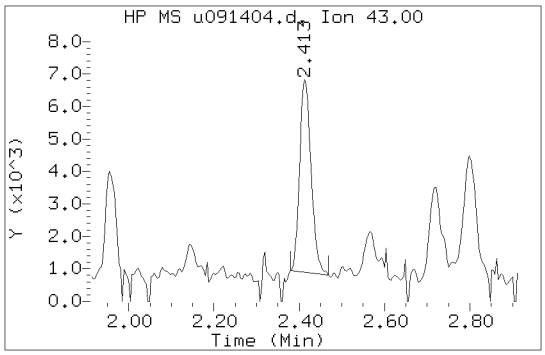
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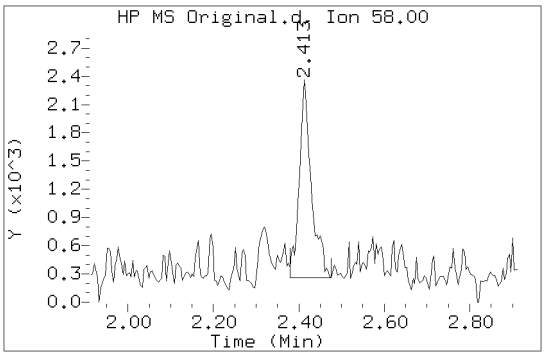



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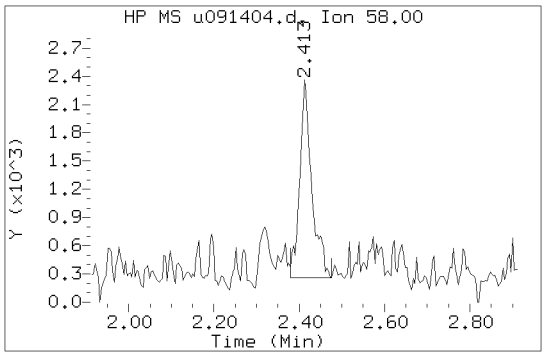
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BEFORE
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HEIGHT
2101
18-Sep-2023
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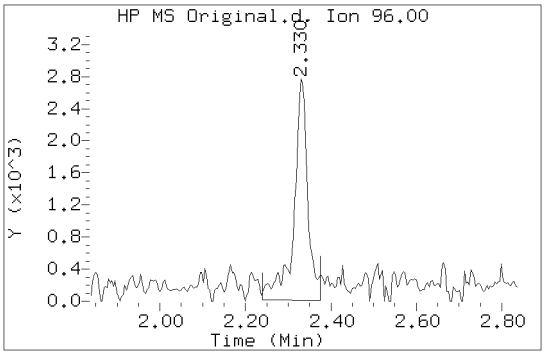

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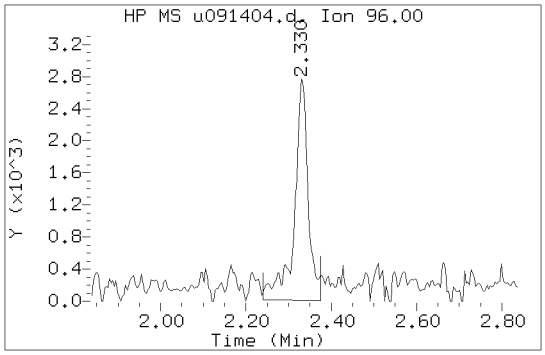

## 1,1-Dichloroethene (75-35-4)

Reason Code:

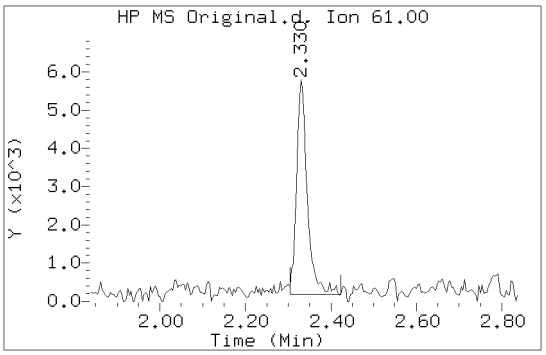
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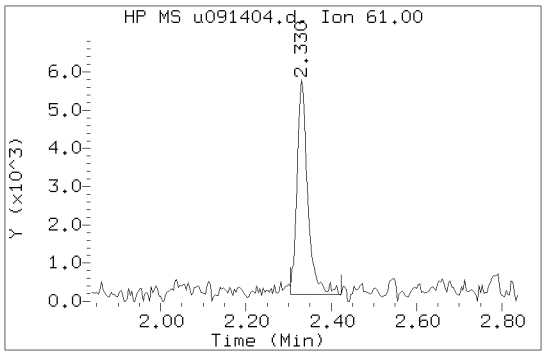

AFTER
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BEFORE
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HEIGHT
5615
18-Sep-2023
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AFTER
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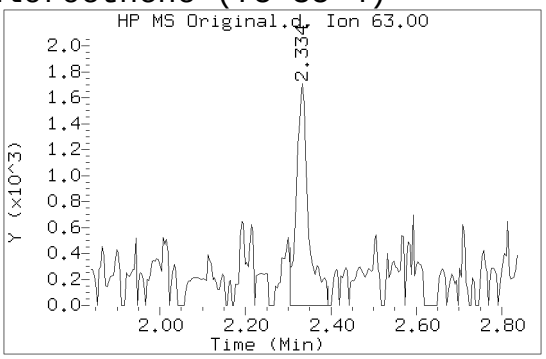
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LabSampID : VSTD001

## 1,1-Dichloroethene (75-35-4)

Reason Code:

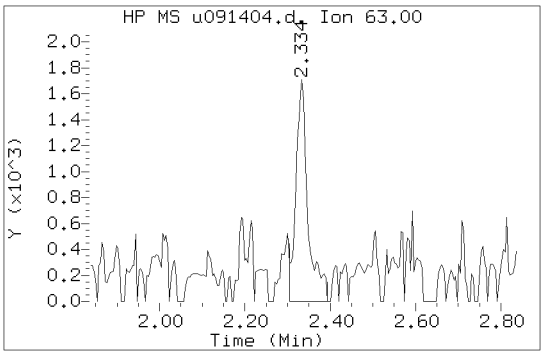
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AFTER

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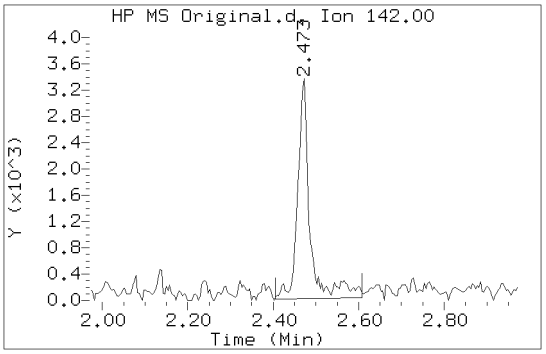



## Iodomethane (74-88-4)

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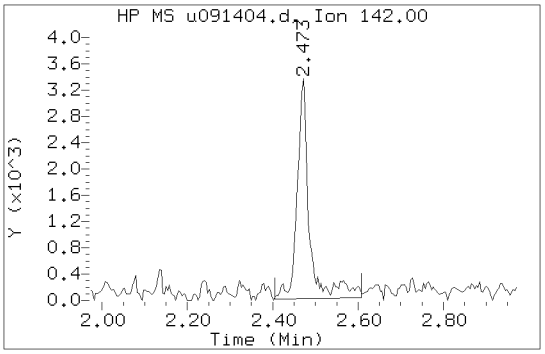
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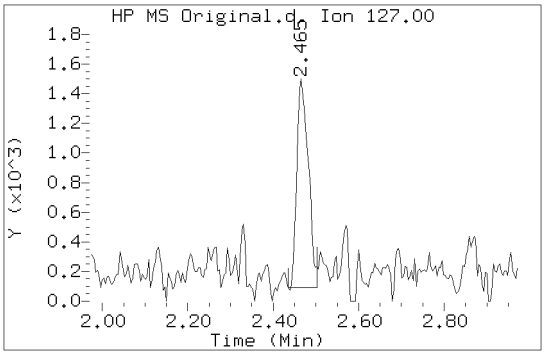

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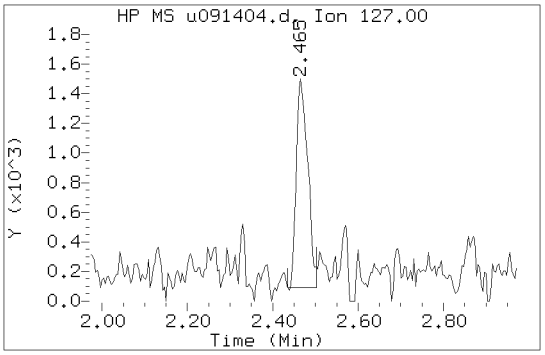

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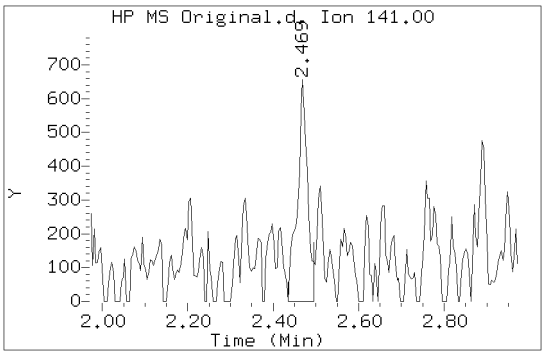

AFTER

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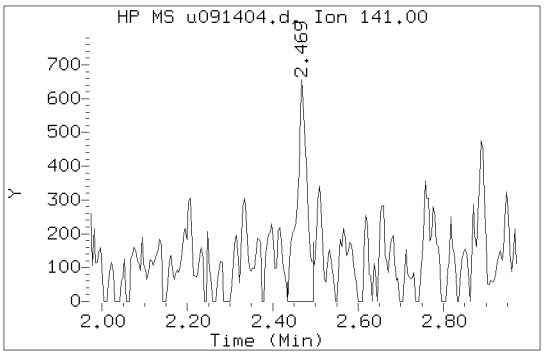

BEFORE

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AFTER

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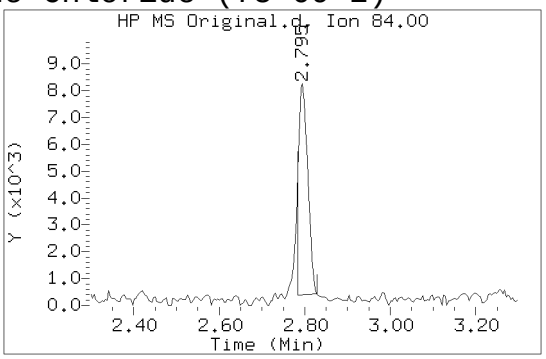
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LabSampID : VSTD001

## Methylene Chloride (75-09-2)

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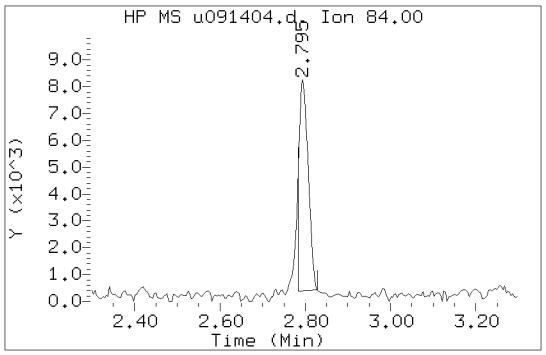
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linh
pham



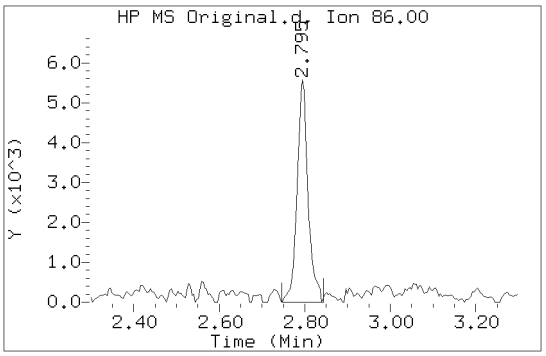

AFTER

MASS
84
AREA
11952
HEIGHT
7860
18-Sep-2023
12:30
linh
pham



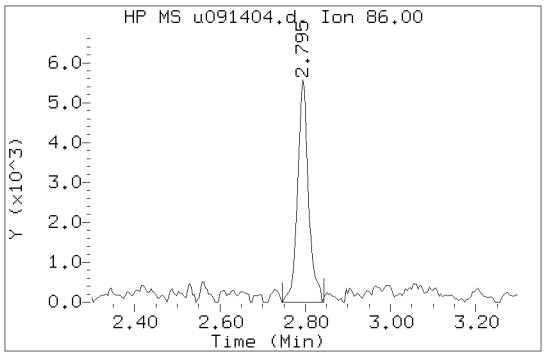

BEFORE

MASS
86
AREA
10136
HEIGHT
5573
18-Sep-2023
12:30
linh
pham



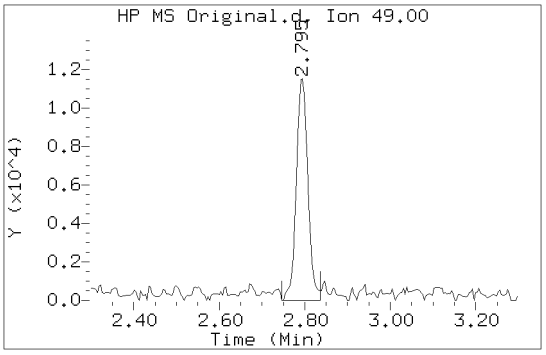

AFTER

MASS
86
AREA
10136
HEIGHT
5573
18-Sep-2023
12:30
linh
pham



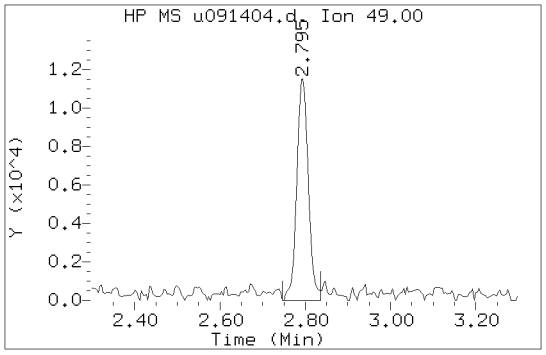

BEFORE

MASS
49
AREA
22277
HEIGHT
11532
18-Sep-2023
12:30
linh
pham




AFTER

MASS
49
AREA
22277
HEIGHT
11532
18-Sep-2023
12:30
linh
pham

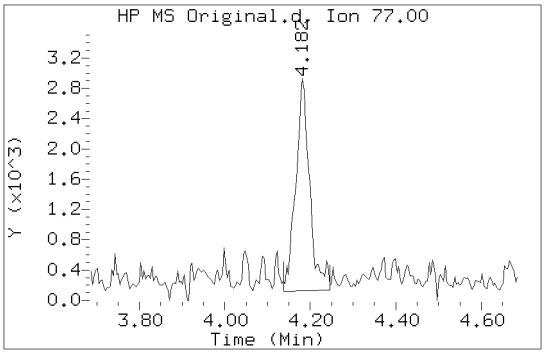



## 2,2-Dichloropropane (594-20-7)

Reason Code:

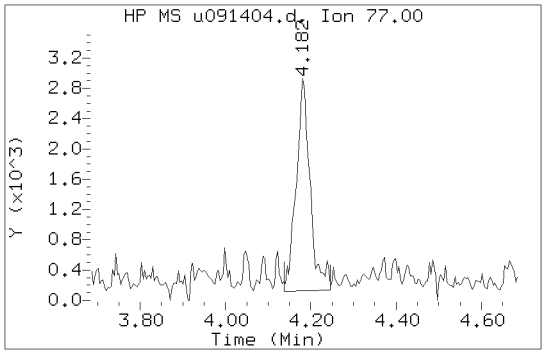
BEFORE

MASS
77
AREA
6514
HEIGHT
2800
18-Sep-2023
12:30
linh
pham




AFTER

MASS
77
AREA
6514
HEIGHT
2800
18-Sep-2023
12:30
linh
pham



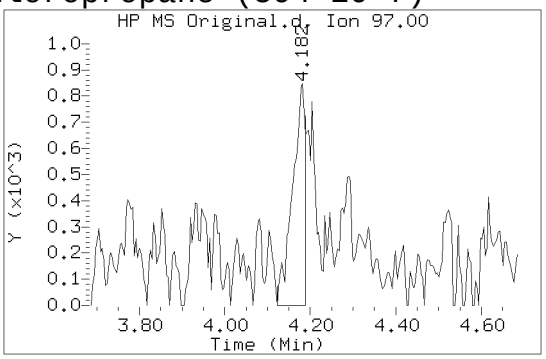
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Inj Date : 14-SEP-2023 16:53
InstruID : VOA9.i
LabSampID : VSTD001

## 2,2-Dichloropropane (594-20-7)

Reason Code:

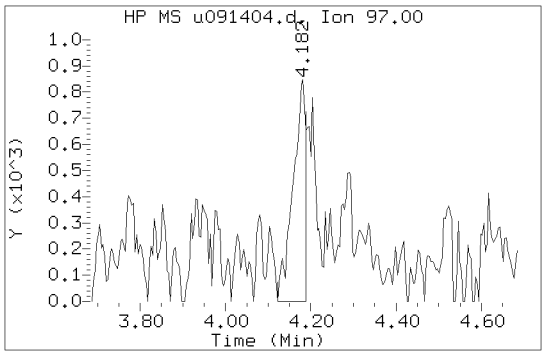
BEFORE

MASS
97
AREA
1771
HEIGHT
847
18-Sep-2023
12:30
linh
pham




AFTER

MASS
97
AREA
1771
HEIGHT
847
18-Sep-2023
12:30
linh
pham

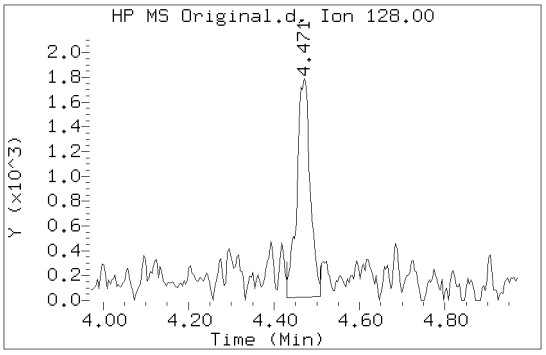



## Bromochloromethane (74-97-5)

Reason Code:

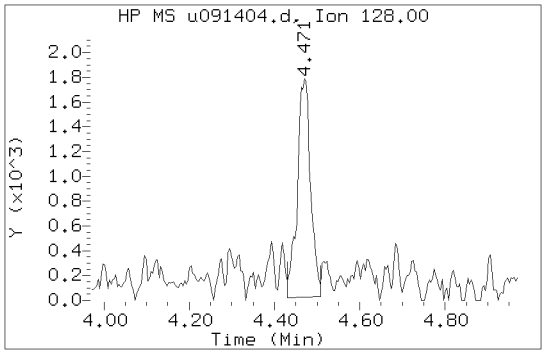
BEFORE

MASS
128
AREA
3900
HEIGHT
1760
18-Sep-2023
12:30
linh
pham



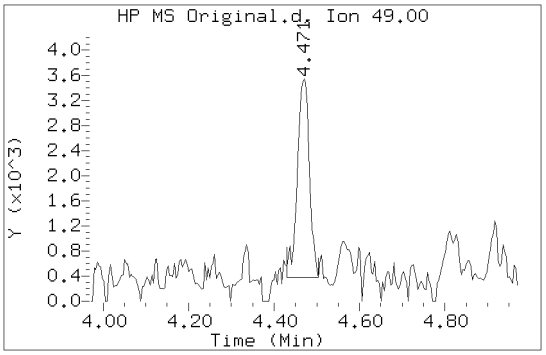

AFTER

MASS
128
AREA
3900
HEIGHT
1760
18-Sep-2023
12:30
linh
pham



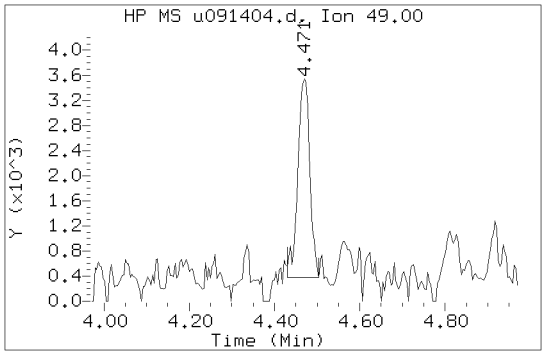

BEFORE

MASS
49
AREA
6333
HEIGHT
3163
18-Sep-2023
12:30
linh
pham



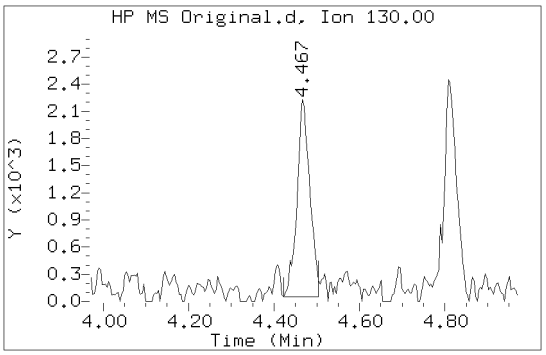

AFTER

MASS
49
AREA
6333
HEIGHT
3163
18-Sep-2023
12:30
linh
pham



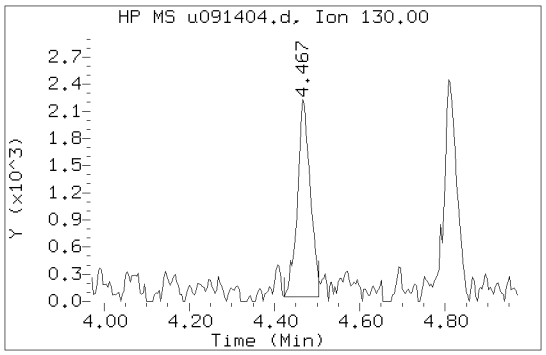

BEFORE

MASS
130
AREA
4634
HEIGHT
2183
18-Sep-2023
12:30
linh
pham




AFTER

MASS
130
AREA
4634
HEIGHT
2183
18-Sep-2023
12:30
linh
pham



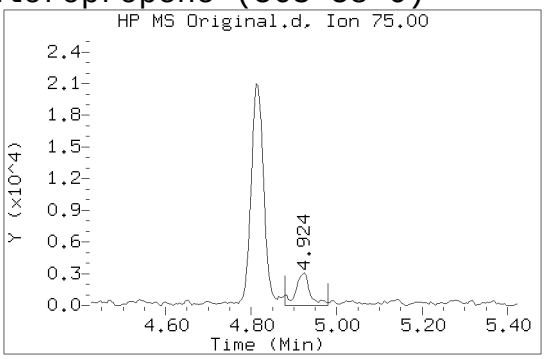
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Inj Date : 14-SEP-2023 16:53
InstruID : VOA9.i
LabSampID : VSTD001

## 1,1-Dichloropropene (563-58-6)

Reason Code:

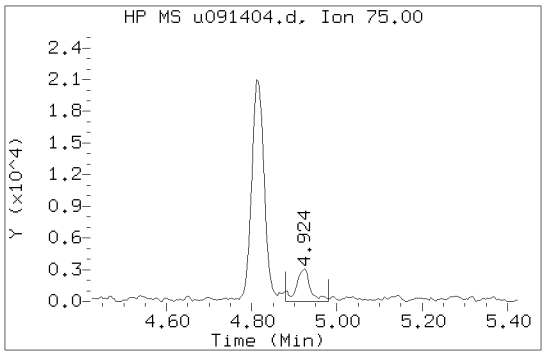
BEFORE

MASS
75
AREA
7313
HEIGHT
3072
18-Sep-2023
12:30
linh
pham



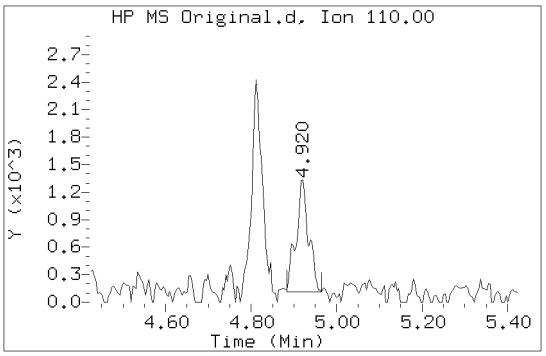

AFTER

MASS
75
AREA
7313
HEIGHT
3072
18-Sep-2023
12:30
linh
pham



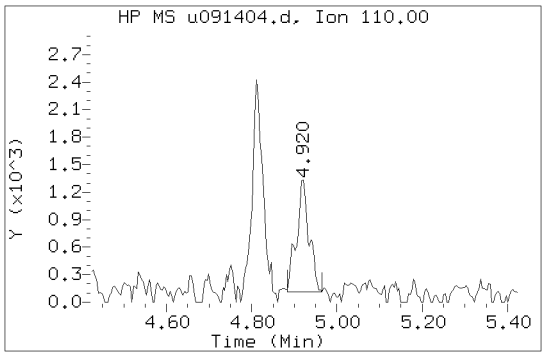

BEFORE

MASS
110
AREA
2544
HEIGHT
1225
18-Sep-2023
12:30
linh
pham



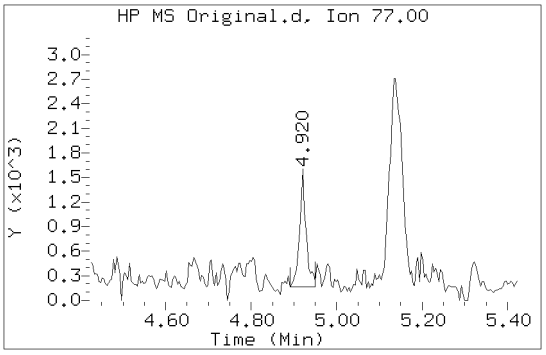

AFTER

MASS
110
AREA
2544
HEIGHT
1225
18-Sep-2023
12:30
linh
pham



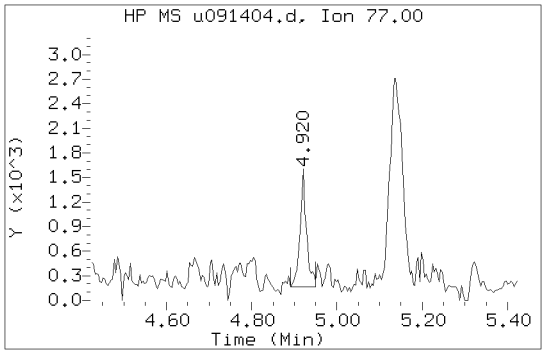

BEFORE

MASS
77
AREA
1545
HEIGHT
1442
18-Sep-2023
12:30
linh
pham




AFTER

MASS
77
AREA
1545
HEIGHT
1442
18-Sep-2023
12:30
linh
pham

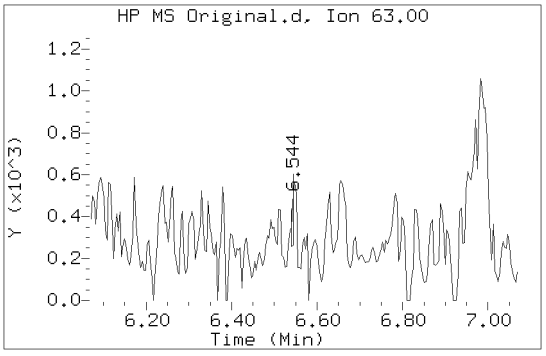



## 2-Chloroethylvinyl ether (110-75-8)

Reason Code:

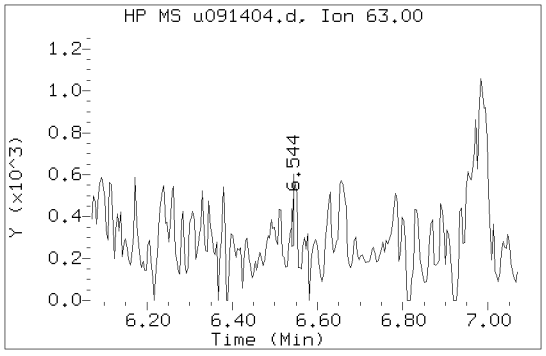
BEFORE

MASS
63
AREA
75
HEIGHT
246
18-Sep-2023
12:30
linh
pham




AFTER

MASS
63
AREA
75
HEIGHT
246
18-Sep-2023
12:30
linh
pham

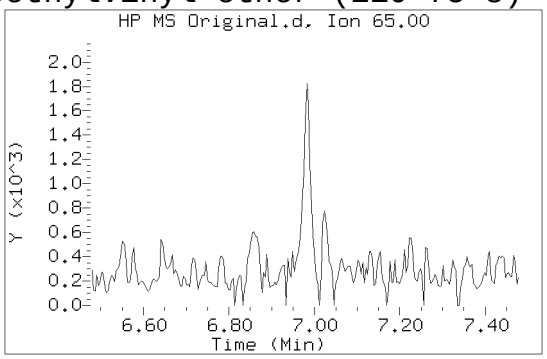


Data File : \\nahstws005\target\chem\voa9.i\u230914.b\u091404.d
Inj Date : 14-SEP-2023 16:53
InstruID : VOA9.i
LabSampID : VSTD001

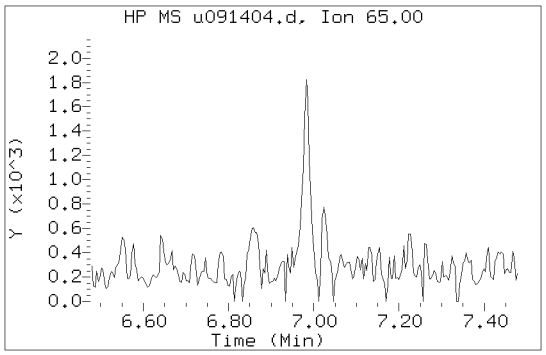
## 2-Chloroethylvinyl ether (110-75-8)

Reason Code:

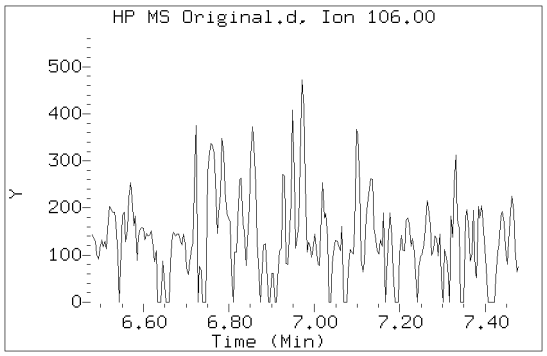
BEFORE
MASS
65
AREA
0
HEIGHT
0
18-Sep-2023
12:30
linh
pham



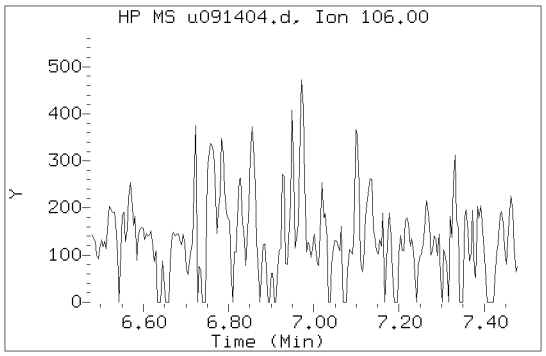

AFTER
MASS
65
AREA
0
HEIGHT
0
18-Sep-2023
12:30
linh
pham




BEFORE
MASS
106
AREA
0
HEIGHT
0
18-Sep-2023
12:30
linh
pham



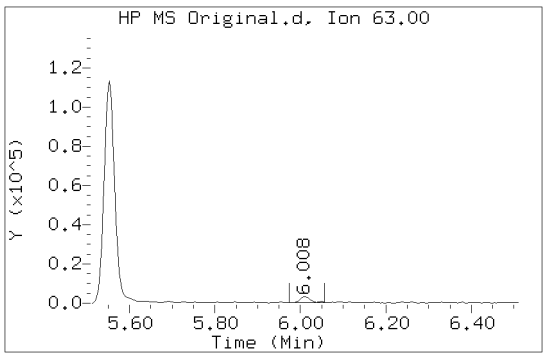

AFTER
MASS
106
AREA
0
HEIGHT
0
18-Sep-2023
12:30
linh
pham



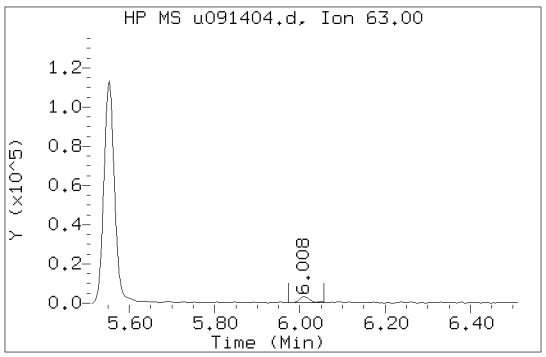

## 1,2-Dichloropropane (78-87-5)

Reason Code:

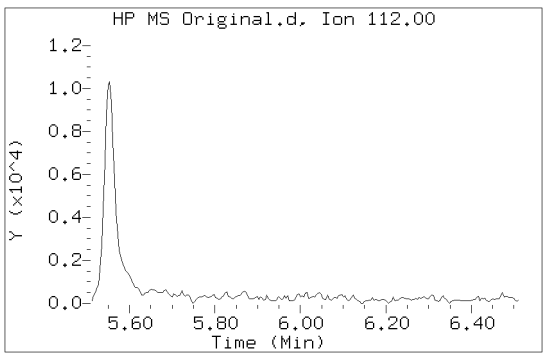
BEFORE
MASS
63
AREA
5092
HEIGHT
3016
18-Sep-2023
12:30
linh
pham



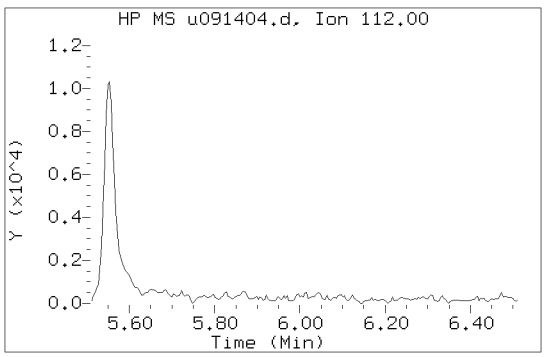

AFTER
MASS
63
AREA
5092
HEIGHT
3016
18-Sep-2023
12:30
linh
pham




BEFORE
MASS
112
AREA
21302
HEIGHT
10267
18-Sep-2023
12:30
linh
pham




AFTER
MASS
112
AREA
21302
HEIGHT
10267
18-Sep-2023
12:30
linh
pham

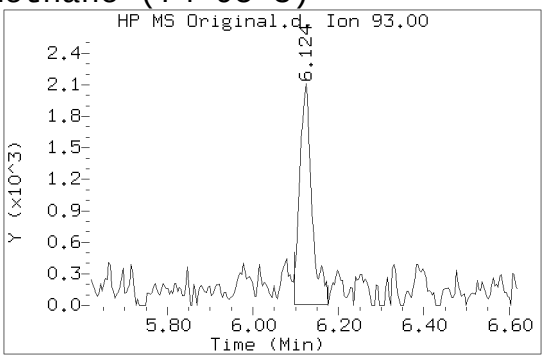


Data File : \\nahstws005\target\chem\voa9.i\u230914.b\u091404.d
Inj Date : 14-SEP-2023 16:53
InstruID : VOA9.i
LabSampID : VSTD001

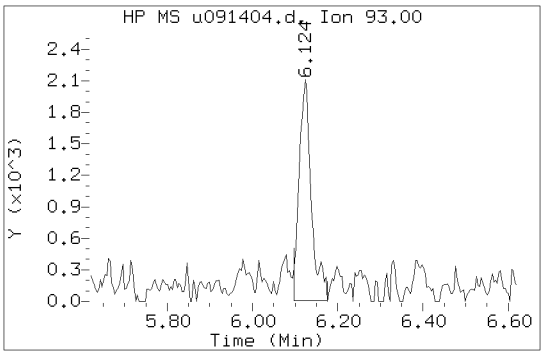
## Dibromomethane (74-95-3)

Reason Code:

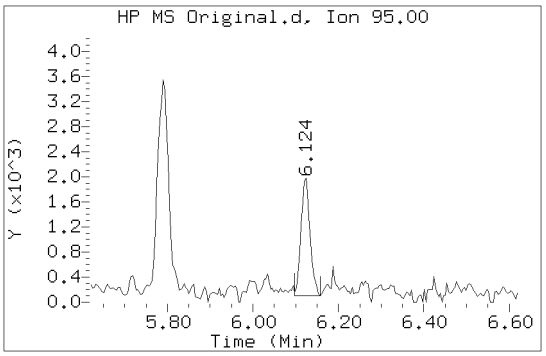
BEFORE
MASS
93
AREA
4246
HEIGHT
2105
18-Sep-2023
12:30
linh
pham



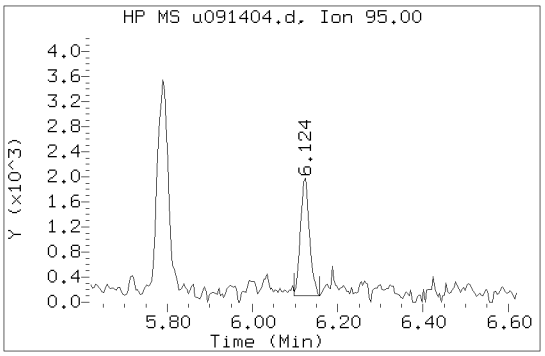

AFTER
MASS
93
AREA
4246
HEIGHT
2105
18-Sep-2023
12:30
linh
pham



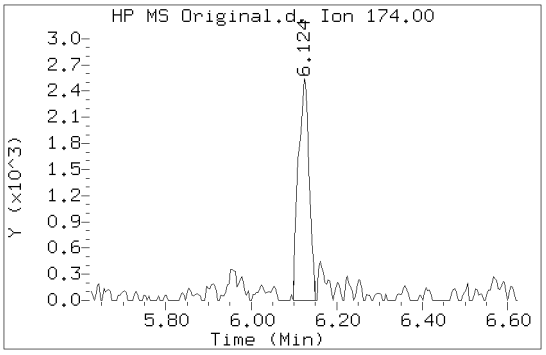

BEFORE
MASS
95
AREA
2839
HEIGHT
1877
18-Sep-2023
12:30
linh
pham



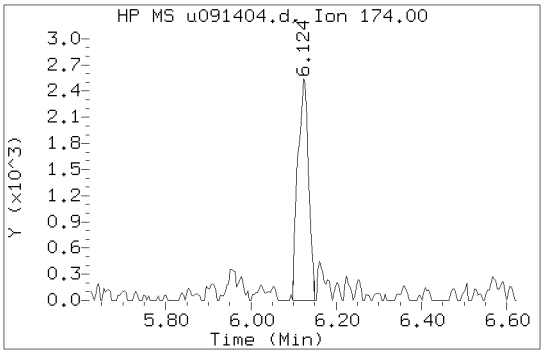

AFTER
MASS
95
AREA
2839
HEIGHT
1877
18-Sep-2023
12:30
linh
pham




BEFORE
MASS
174
AREA
4553
HEIGHT
2542
18-Sep-2023
12:30
linh
pham



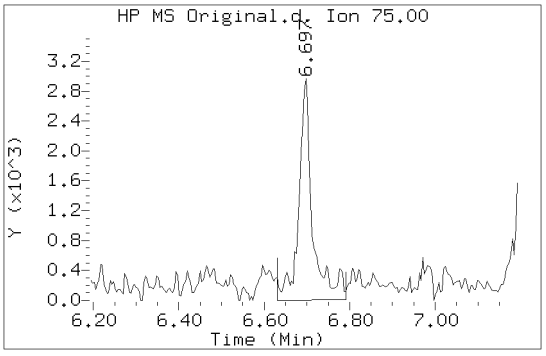

AFTER
MASS
174
AREA
4553
HEIGHT
2542
18-Sep-2023
12:30
linh
pham



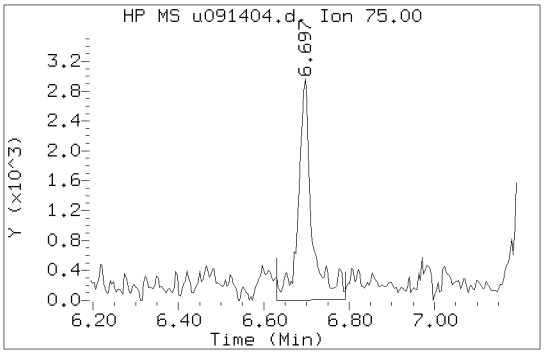

## cis-1,3-Dichloropropene (10061-01-5)

Reason Code:

BEFORE
MASS
75
AREA
6792
HEIGHT
2962
18-Sep-2023
12:30
linh
pham




AFTER
MASS
75
AREA
6792
HEIGHT
2962
18-Sep-2023
12:30
linh
pham



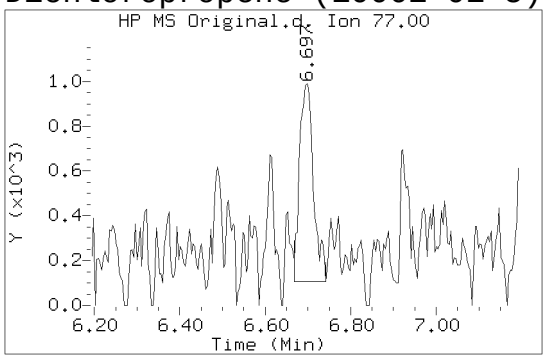
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Inj Date : 14-SEP-2023 16:53
InstruID : VOA9.i
LabSampID : VSTD001

## cis-1,3-Dichloropropene (10061-01-5)

Reason Code:

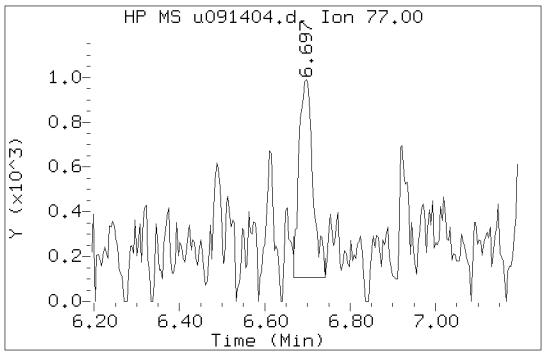
BEFORE

MASS
77
AREA
2047
HEIGHT
885
18-Sep-2023
12:30
linh
pham



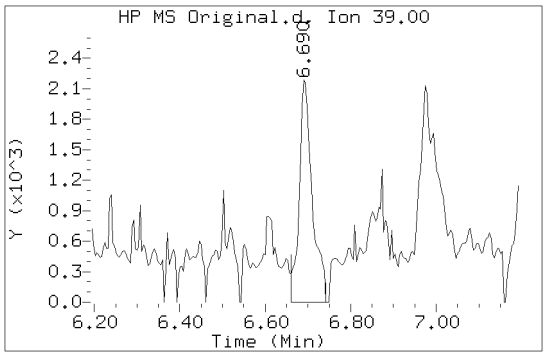

AFTER

MASS
77
AREA
2047
HEIGHT
885
18-Sep-2023
12:30
linh
pham



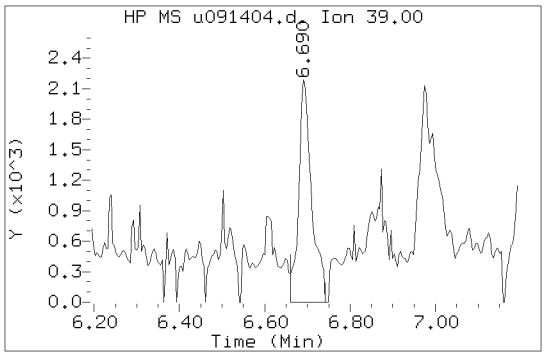

BEFORE

MASS
39
AREA
4707
HEIGHT
2187
18-Sep-2023
12:30
linh
pham




AFTER

MASS
39
AREA
4707
HEIGHT
2187
18-Sep-2023
12:30
linh
pham

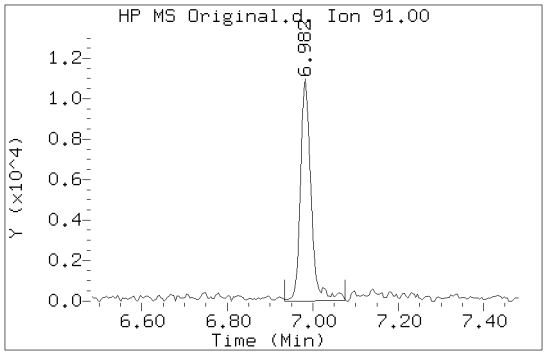



## Toluene (108-88-3)

Reason Code:

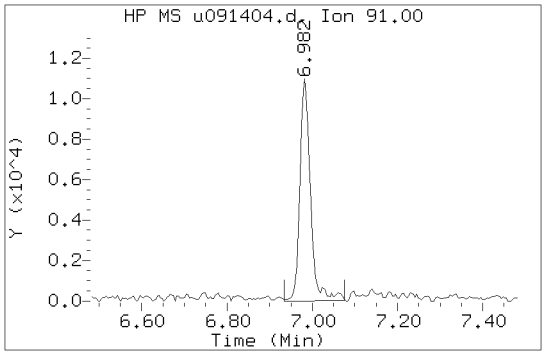
BEFORE

MASS
91
AREA
19537
HEIGHT
10979
18-Sep-2023
12:30
linh
pham



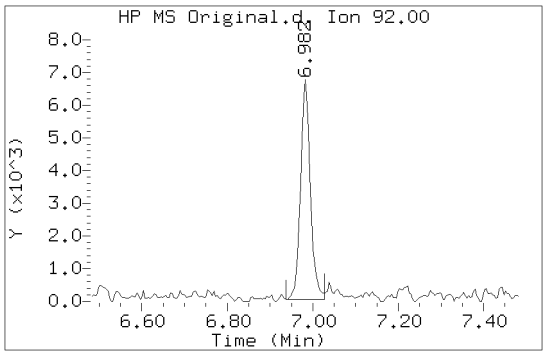

AFTER

MASS
91
AREA
19537
HEIGHT
10979
18-Sep-2023
12:30
linh
pham



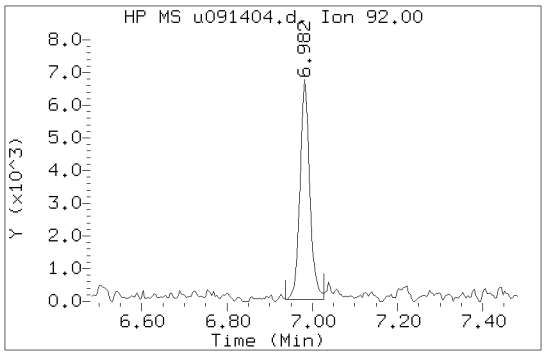

BEFORE

MASS
92
AREA
10970
HEIGHT
6718
18-Sep-2023
12:30
linh
pham




AFTER

MASS
92
AREA
10970
HEIGHT
6718
18-Sep-2023
12:30
linh
pham



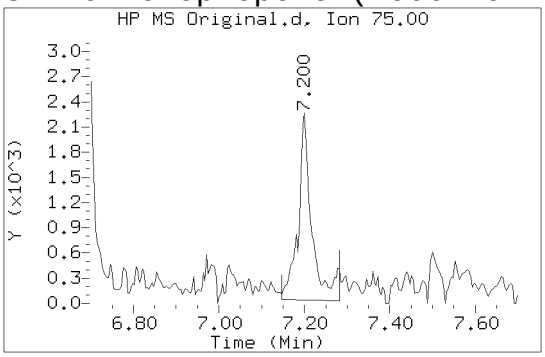
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Inj Date : 14-SEP-2023 16:53
InstruID : VOA9.i
LabSampID : VSTD001

## trans-1,3-Dichloropropene (10061-02-6)

Reason Code:

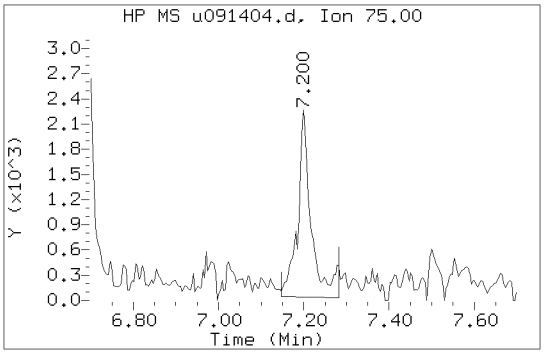
BEFORE

MASS
75
AREA
5013
HEIGHT
2230
18-Sep-2023
12:30
linh
pham



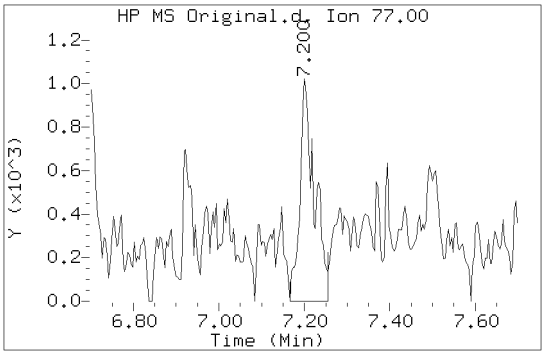

AFTER

MASS
75
AREA
5013
HEIGHT
2230
18-Sep-2023
12:30
linh
pham



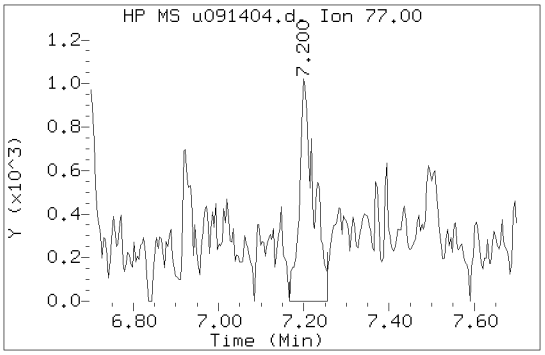

BEFORE

MASS
77
AREA
2458
HEIGHT
1021
18-Sep-2023
12:30
linh
pham



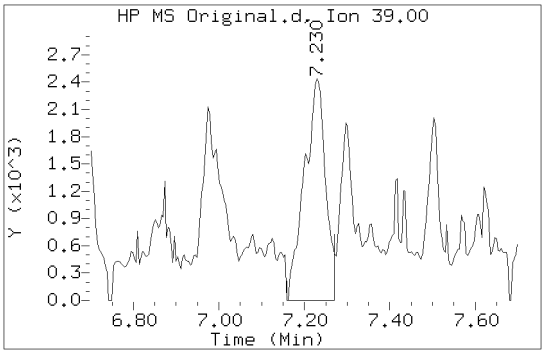

AFTER

MASS
77
AREA
2458
HEIGHT
1021
18-Sep-2023
12:30
linh
pham



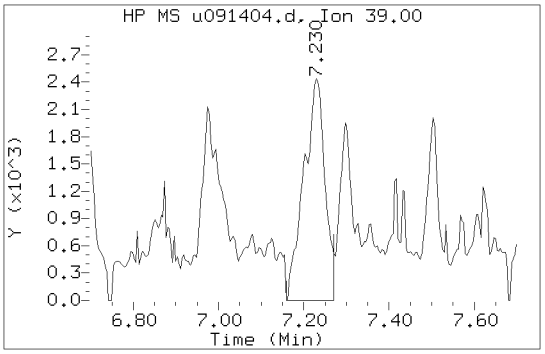

BEFORE

MASS
39
AREA
8449
HEIGHT
2437
18-Sep-2023
12:30
linh
pham




AFTER

MASS
39
AREA
8449
HEIGHT
2437
18-Sep-2023
12:30
linh
pham

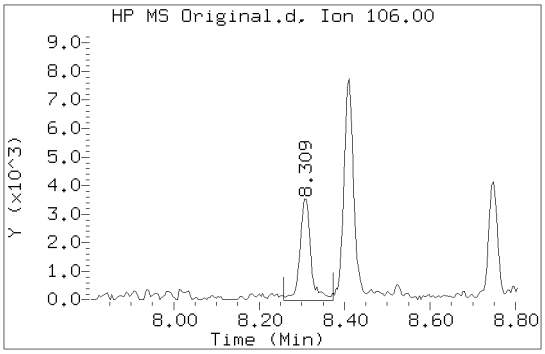



## Ethylbenzene (100-41-4)

Reason Code:

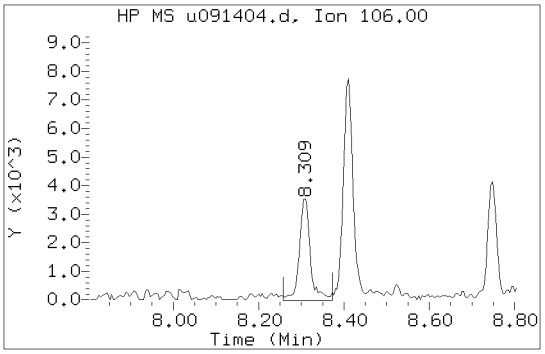
BEFORE

MASS
106
AREA
6608
HEIGHT
3550
18-Sep-2023
12:30
linh
pham




AFTER

MASS
106
AREA
6608
HEIGHT
3550
18-Sep-2023
12:30
linh
pham

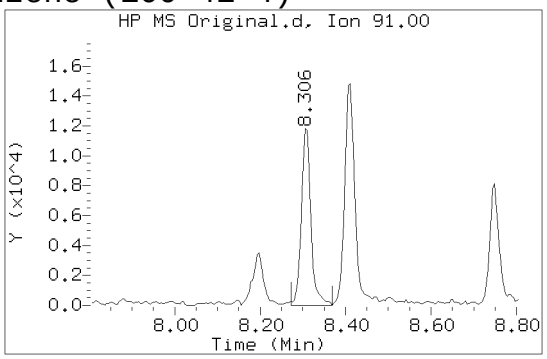


Data File : \\nahstws005\target\chem\voa9.i\u230914.b\u091404.d
Inj Date : 14-SEP-2023 16:53
InstruID : VOA9.i
LabSampID : VSTD001

## Ethylbenzene (100-41-4)

**BEFORE**

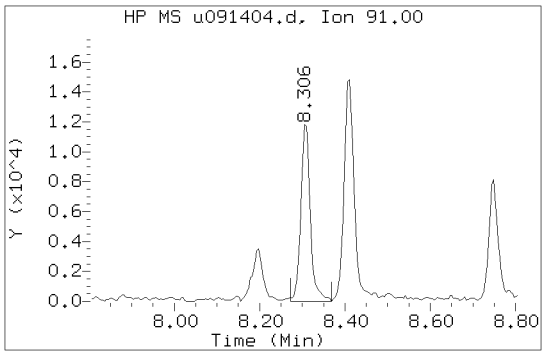
MASS
91
AREA
18837
HEIGHT
11841
18-Sep-2023
12:30
linh
pham




Reason Code:

**AFTER**

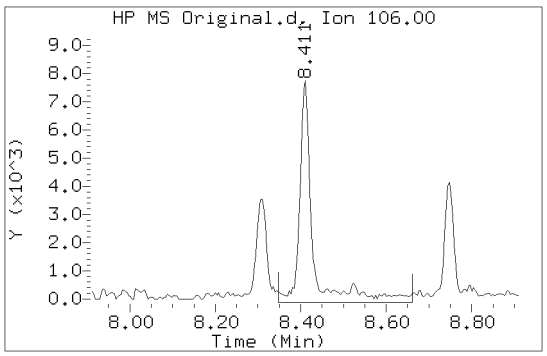
MASS
91
AREA
18837
HEIGHT
11841
18-Sep-2023
12:30
linh
pham




## m,p-Xylenes ()

**BEFORE**

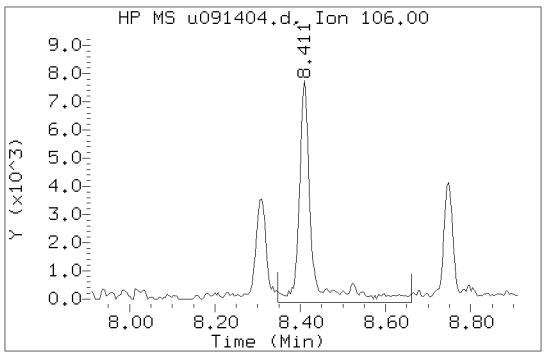
MASS
106
AREA
17428
HEIGHT
7866
18-Sep-2023
12:30
linh
pham




Reason Code:

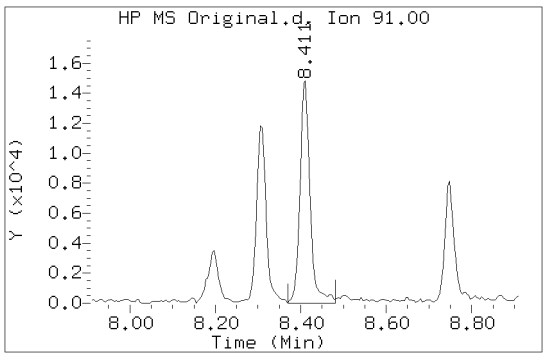
**AFTER**

MASS
106
AREA
17428
HEIGHT
7866
18-Sep-2023
12:30
linh
pham



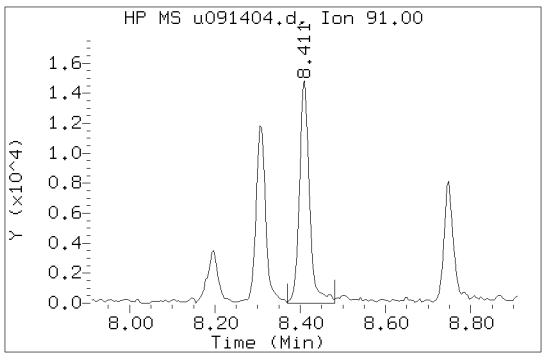

**BEFORE**

MASS
91
AREA
25036
HEIGHT
14820
18-Sep-2023
12:30
linh
pham




**AFTER**

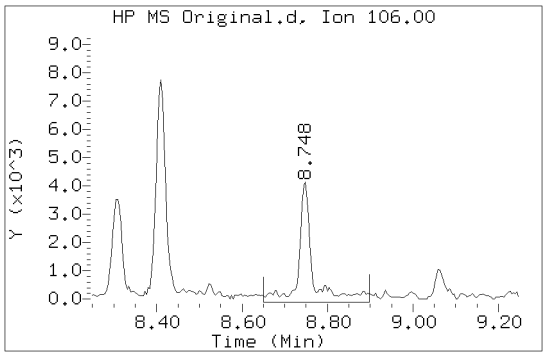
MASS
91
AREA
25036
HEIGHT
14820
18-Sep-2023
12:30
linh
pham




## o-Xylene (95-47-6)

**BEFORE**

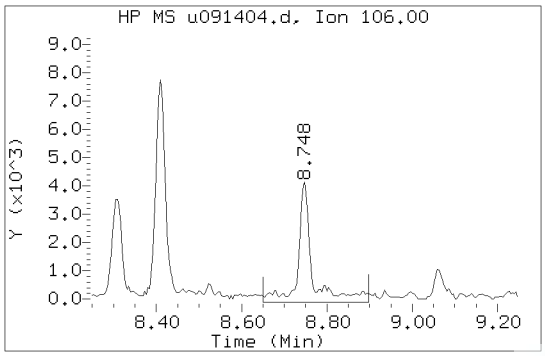
MASS
106
AREA
10098
HEIGHT
4252
18-Sep-2023
12:30
linh
pham




Reason Code:

**AFTER**

MASS
106
AREA
10098
HEIGHT
4252
18-Sep-2023
12:30
linh
pham



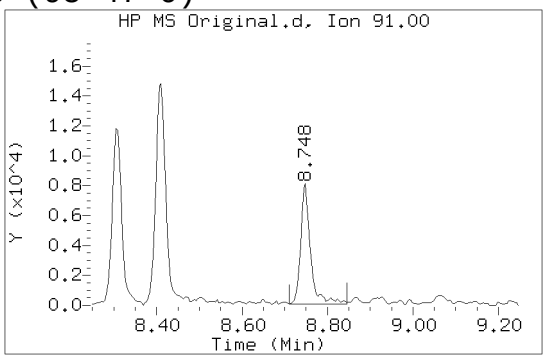
Data File : \\nahstws005\target\chem\voa9.i\u230914.b\u091404.d
Inj Date : 14-SEP-2023 16:53
InstruID : VOA9.i
LabSampID : VSTD001

## o-Xylene (95-47-6)

Reason Code:

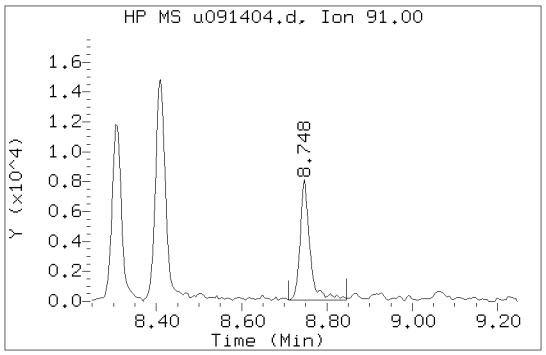
**BEFORE**

MASS
91
AREA
13234
HEIGHT
8071
18-Sep-2023
12:30
linh
pham




**AFTER**

MASS
91
AREA
13234
HEIGHT
8071
18-Sep-2023
12:30
linh
pham

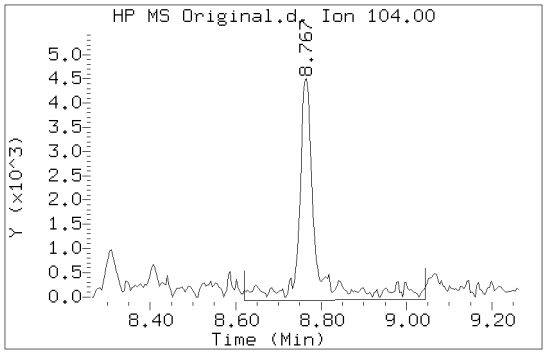



## Styrene (100-42-5)

Reason Code:

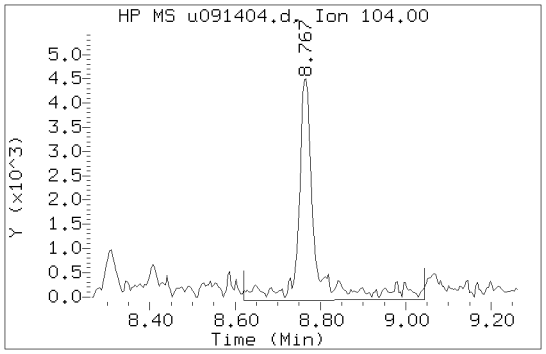
**BEFORE**

MASS
104
AREA
13244
HEIGHT
4573
18-Sep-2023
12:30
linh
pham



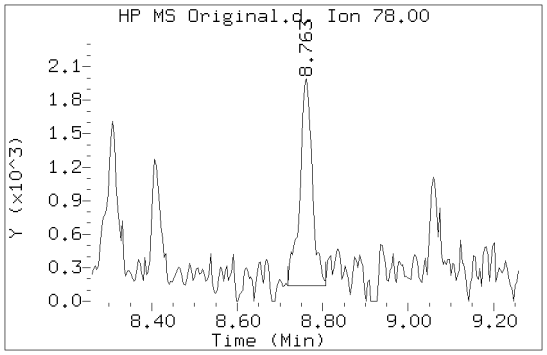

**AFTER**

MASS
104
AREA
13244
HEIGHT
4573
18-Sep-2023
12:30
linh
pham



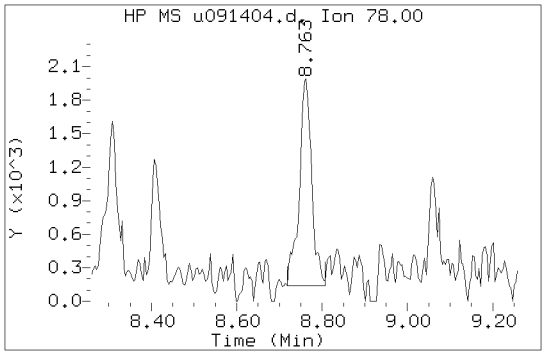

**BEFORE**

MASS
78
AREA
3820
HEIGHT
1855
18-Sep-2023
12:30
linh
pham




**AFTER**

MASS
78
AREA
3820
HEIGHT
1855
18-Sep-2023
12:30
linh
pham

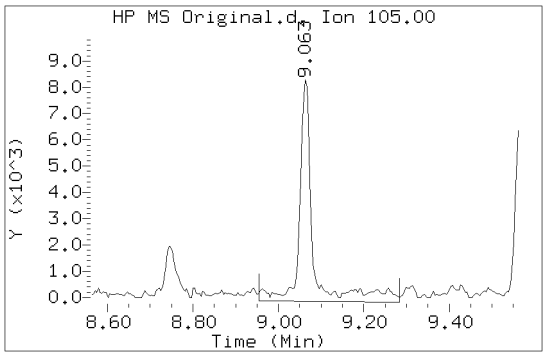



## Isopropylbenzene (98-82-8)

Reason Code:

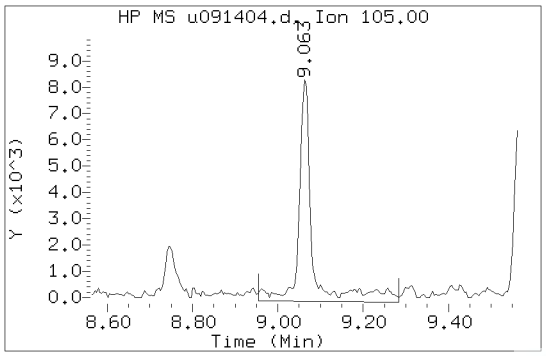
**BEFORE**

MASS
105
AREA
19078
HEIGHT
8430
18-Sep-2023
12:30
linh
pham




**AFTER**

MASS
105
AREA
19078
HEIGHT
8430
18-Sep-2023
12:30
linh
pham



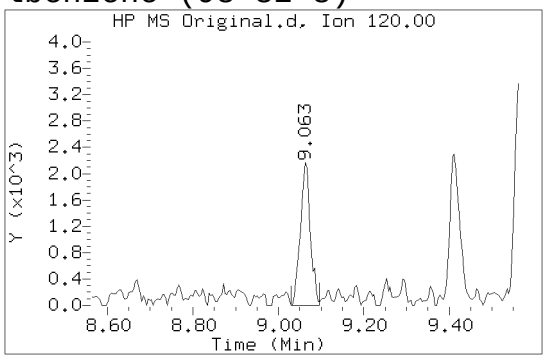
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Inj Date : 14-SEP-2023 16:53
InstruID : VOA9.i
LabSampID : VSTD001

## Isopropylbenzene (98-82-8)

Reason Code:

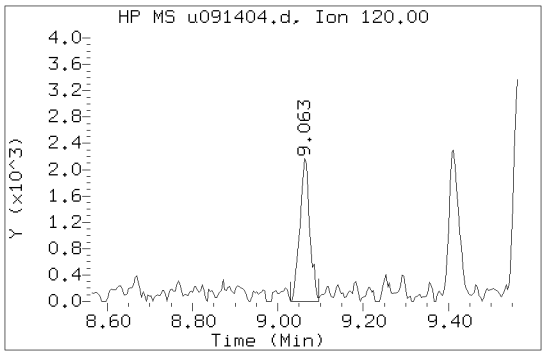
BEFORE

MASS
120
AREA
3600
HEIGHT
2175
18-Sep-2023
12:30
linh
pham




AFTER

MASS
120
AREA
3600
HEIGHT
2175
18-Sep-2023
12:30
linh
pham

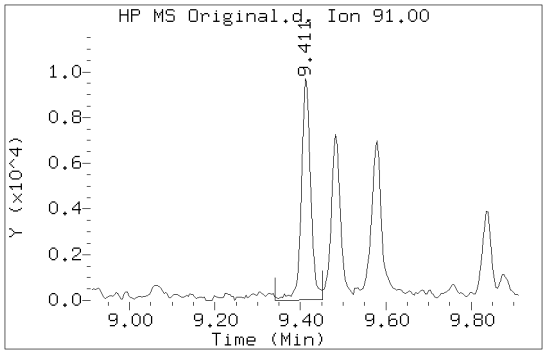



## n-Propylbenzene (106-65-1)

Reason Code:

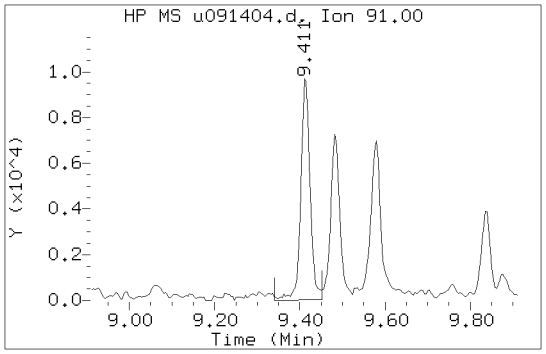
BEFORE

MASS
91
AREA
15066
HEIGHT
9677
18-Sep-2023
12:30
linh
pham



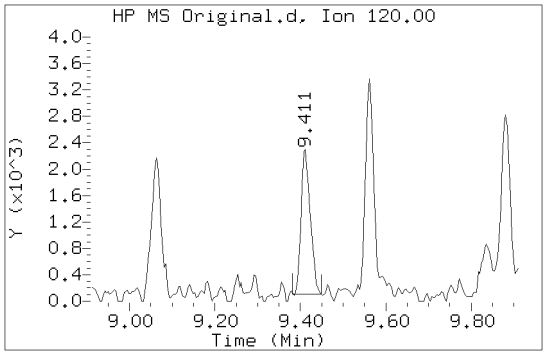

AFTER

MASS
91
AREA
15066
HEIGHT
9677
18-Sep-2023
12:30
linh
pham



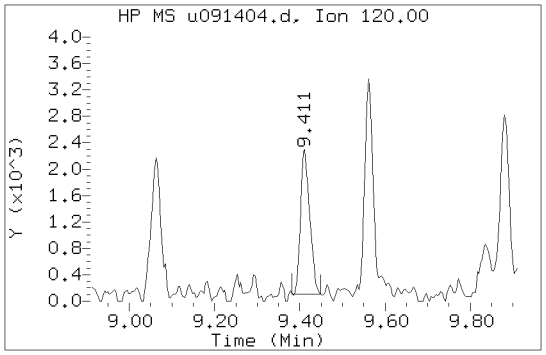

BEFORE

MASS
120
AREA
3359
HEIGHT
2192
18-Sep-2023
12:30
linh
pham




AFTER

MASS
120
AREA
3359
HEIGHT
2192
18-Sep-2023
12:30
linh
pham

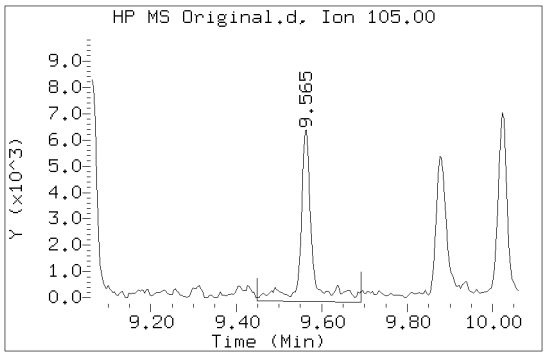



## 1,3,5-Trimethylbenzene (108-67-8)

Reason Code:

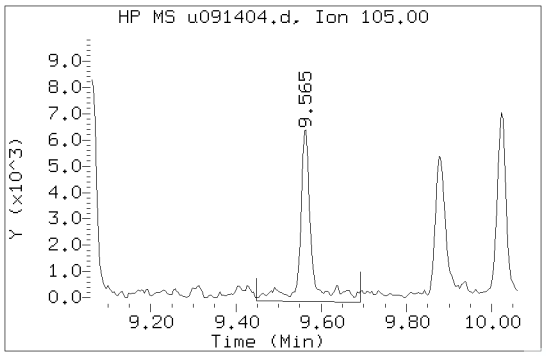
BEFORE

MASS
105
AREA
13057
HEIGHT
6515
18-Sep-2023
12:30
linh
pham




AFTER

MASS
105
AREA
13057
HEIGHT
6515
18-Sep-2023
12:30
linh
pham



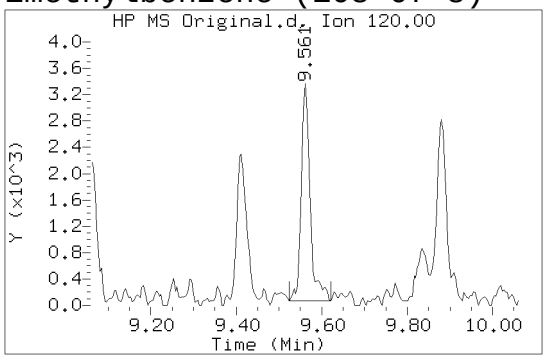
Data File : \\nahstws005\target\chem\voa9.i\u230914.b\u091404.d
Inj Date : 14-SEP-2023 16:53
InstruID : VOA9.i
LabSampID : VSTD001

## 1,3,5-Trimethylbenzene (108-67-8)

Reason Code:

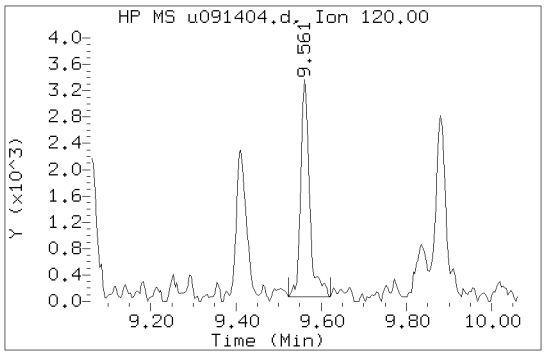
BEFORE

MASS
120
AREA
4890
HEIGHT
3298
18-Sep-2023
12:30
linh
pham




AFTER

MASS
120
AREA
4890
HEIGHT
3298
18-Sep-2023
12:30
linh
pham

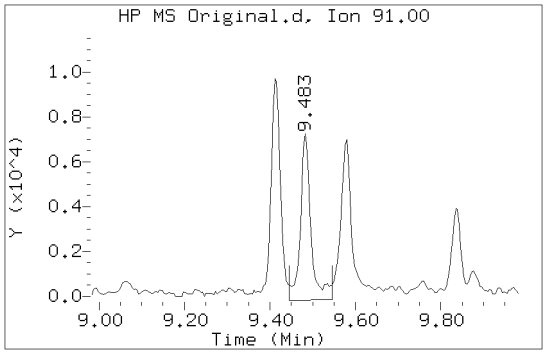



## 2-Chlorotoluene (95-49-8)

Reason Code:

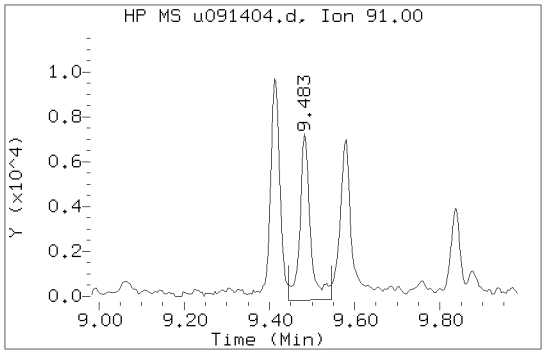
BEFORE

MASS
91
AREA
13160
HEIGHT
7432
18-Sep-2023
12:30
linh
pham



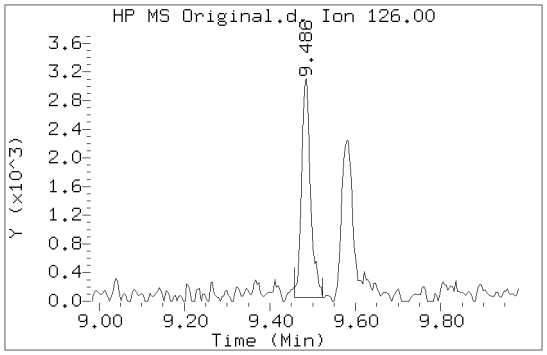

AFTER

MASS
91
AREA
13160
HEIGHT
7432
18-Sep-2023
12:30
linh
pham



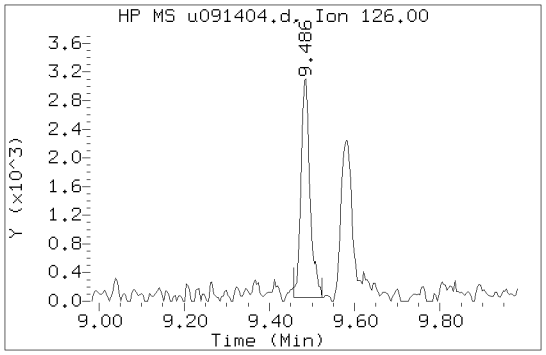

BEFORE

MASS
126
AREA
4570
HEIGHT
3049
18-Sep-2023
12:30
linh
pham




AFTER

MASS
126
AREA
4570
HEIGHT
3049
18-Sep-2023
12:30
linh
pham

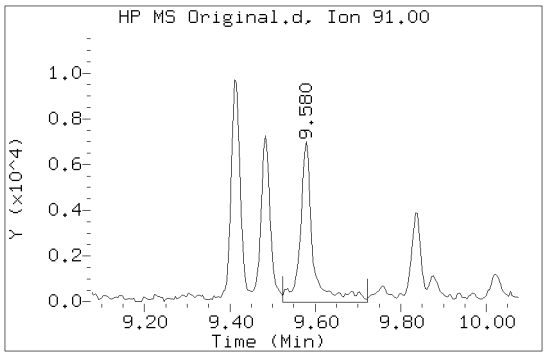



## 4-Chlorotoluene (106-43-4)

Reason Code:

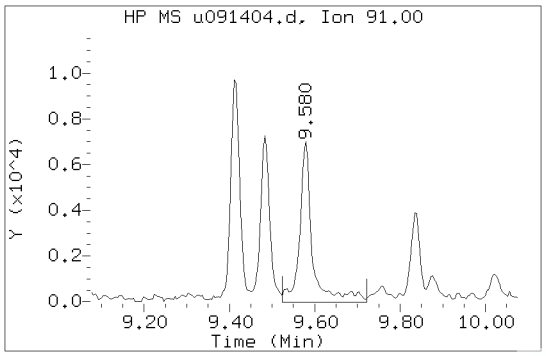
BEFORE

MASS
91
AREA
14951
HEIGHT
7013
18-Sep-2023
12:30
linh
pham




AFTER

MASS
91
AREA
14951
HEIGHT
7013
18-Sep-2023
12:30
linh
pham



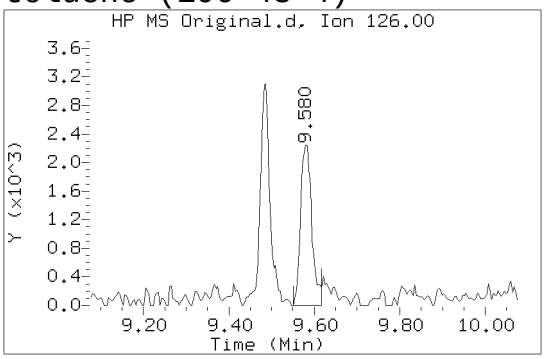
Data File : \\nahstws005\target\chem\voa9.i\u230914.b\u091404.d
Inj Date : 14-SEP-2023 16:53
InstruID : VOA9.i
LabSampID : VSTD001

## 4-Chlorotoluene (106-43-4)

Reason Code:

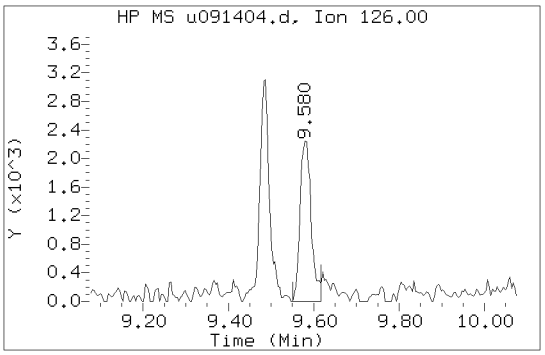
**BEFORE**

MASS
126
AREA
4174
HEIGHT
2241
18-Sep-2023
12:30
linh
pham




**AFTER**

MASS
126
AREA
4174
HEIGHT
2241
18-Sep-2023
12:30
linh
pham

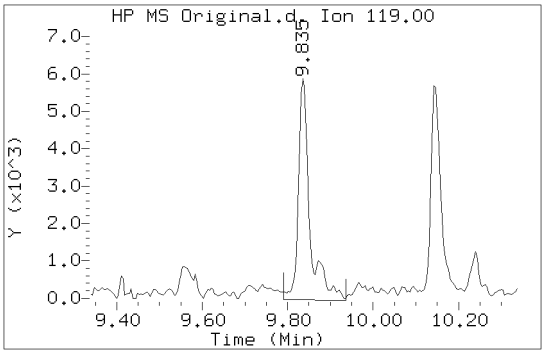



## tert-Butylbenzene (98-06-6)

Reason Code:

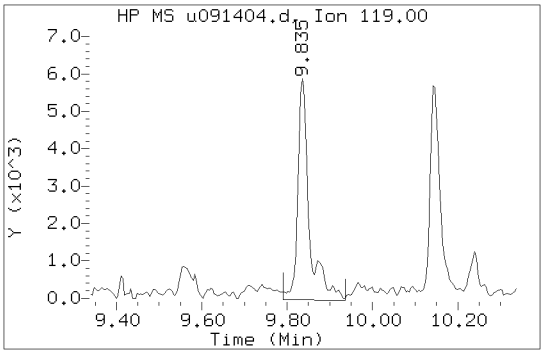
**BEFORE**

MASS
119
AREA
11393
HEIGHT
5910
18-Sep-2023
12:30
linh
pham



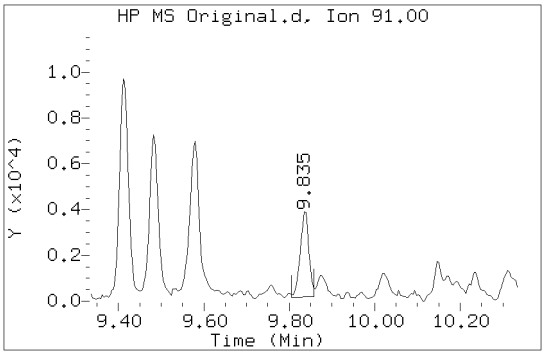

**AFTER**

MASS
119
AREA
11393
HEIGHT
5910
18-Sep-2023
12:30
linh
pham



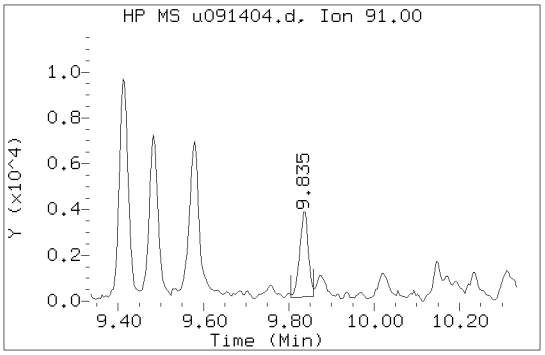

**BEFORE**

MASS
91
AREA
5384
HEIGHT
3707
18-Sep-2023
12:30
linh
pham



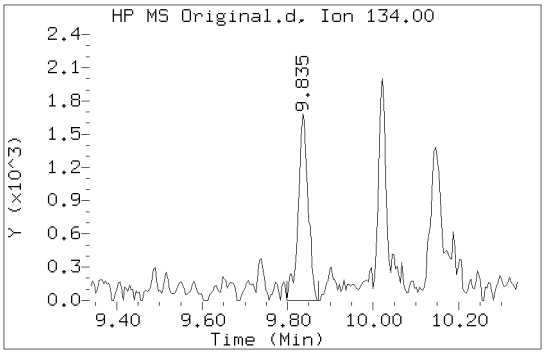

**AFTER**

MASS
91
AREA
5384
HEIGHT
3707
18-Sep-2023
12:30
linh
pham



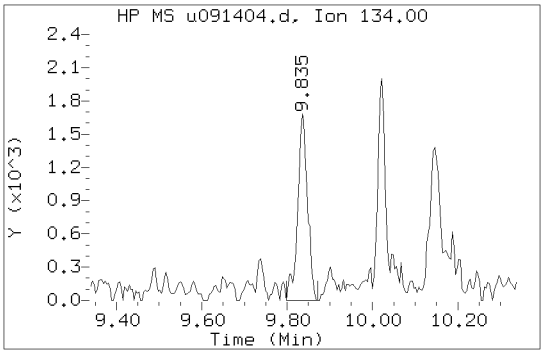

**BEFORE**

MASS
134
AREA
2769
HEIGHT
1683
18-Sep-2023
12:30
linh
pham




**AFTER**

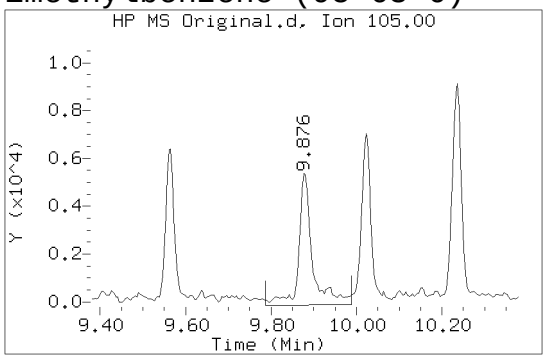
MASS
134
AREA
2769
HEIGHT
1683
18-Sep-2023
12:30
linh
pham



Data File : \\nahstws005\target\chem\voa9.i\u230914.b\u091404.d
Inj Date : 14-SEP-2023 16:53
InstruID : VOA9.i
LabSampID : VSTD001

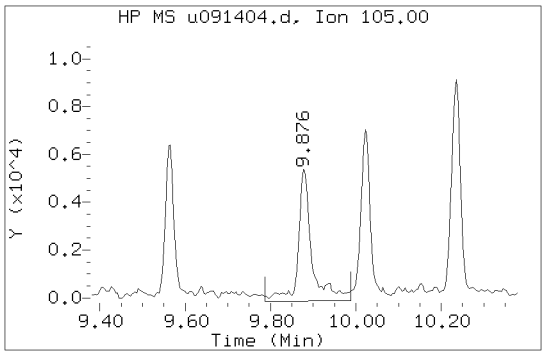
## 1,2,4-Trimethylbenzene (95-63-6)

BEFORE
MASS
105
AREA
12753
HEIGHT
5515
18-Sep-2023
12:30
linh
pham

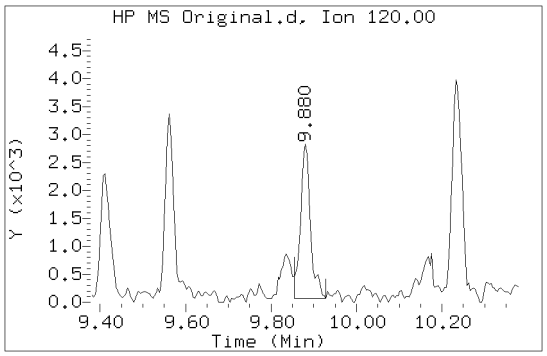



Reason Code:

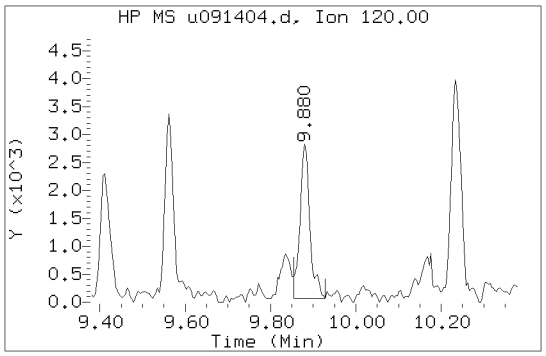
AFTER
MASS
105
AREA
12753
HEIGHT
5515
18-Sep-2023
12:30
linh
pham




BEFORE
MASS
120
AREA
4598
HEIGHT
2753
18-Sep-2023
12:30
linh
pham

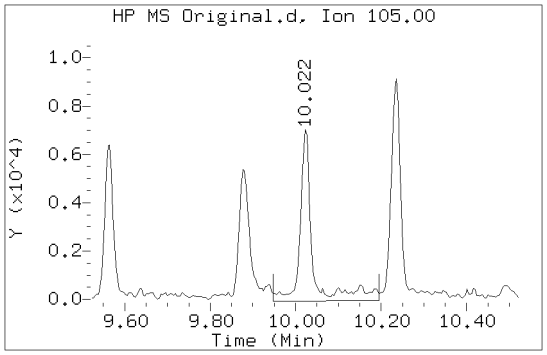



AFTER
MASS
120
AREA
4598
HEIGHT
2753
18-Sep-2023
12:30
linh
pham



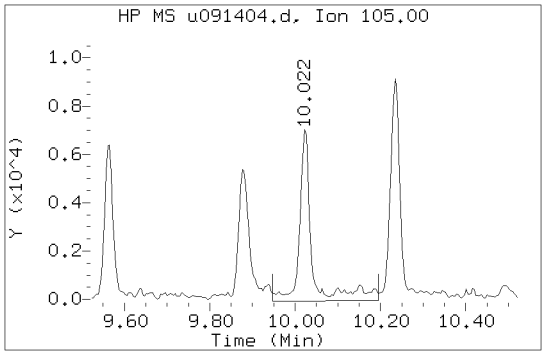

## sec-Butylbenzene (135-98-8)

BEFORE
MASS
105
AREA
14747
HEIGHT
7102
18-Sep-2023
12:30
linh
pham

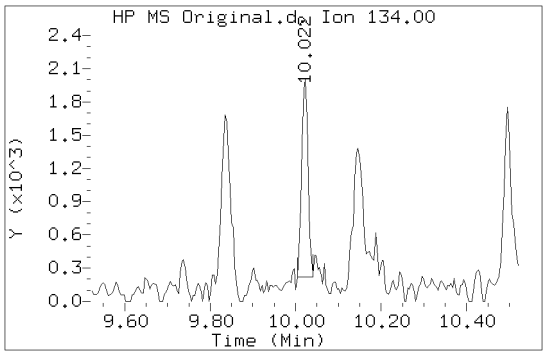



Reason Code:

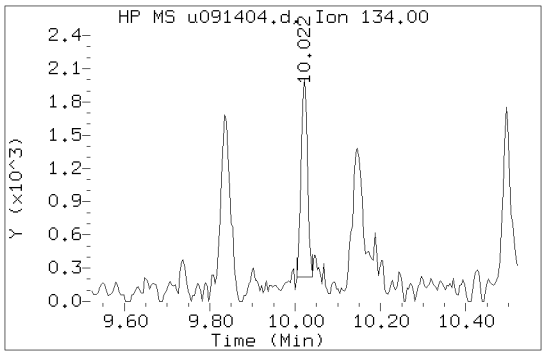
AFTER
MASS
105
AREA
14747
HEIGHT
7102
18-Sep-2023
12:30
linh
pham




BEFORE
MASS
134
AREA
1895
HEIGHT
1783
18-Sep-2023
12:30
linh
pham




AFTER
MASS
134
AREA
1895
HEIGHT
1783
18-Sep-2023
12:30
linh
pham



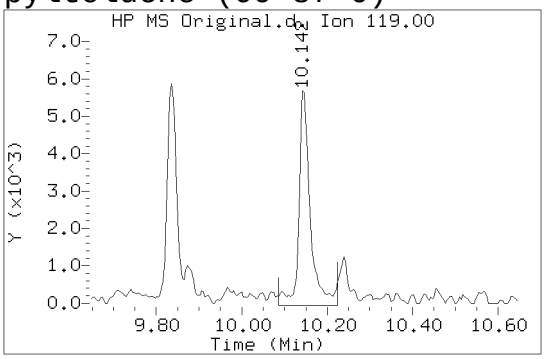
Data File : \\nahstws005\target\chem\voa9.i\u230914.b\u091404.d
Inj Date : 14-SEP-2023 16:53
InstruID : VOA9.i
LabSampID : VSTD001

## p-Isopropyltoluene (99-87-6)

Reason Code:

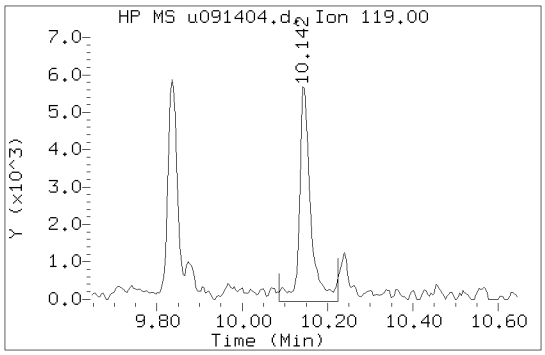
BEFORE

MASS
119
AREA
10971
HEIGHT
5738
18-Sep-2023
12:30
linh
pham



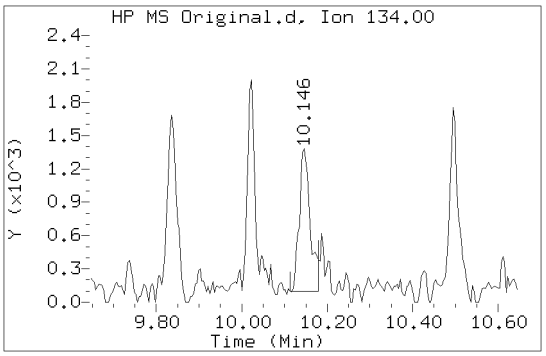

AFTER

MASS
119
AREA
10971
HEIGHT
5738
18-Sep-2023
12:30
linh
pham



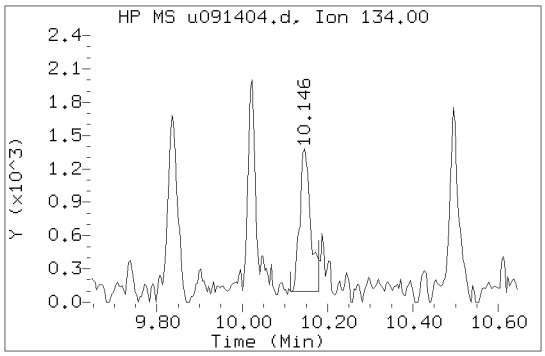

BEFORE

MASS
134
AREA
2324
HEIGHT
1281
18-Sep-2023
12:30
linh
pham



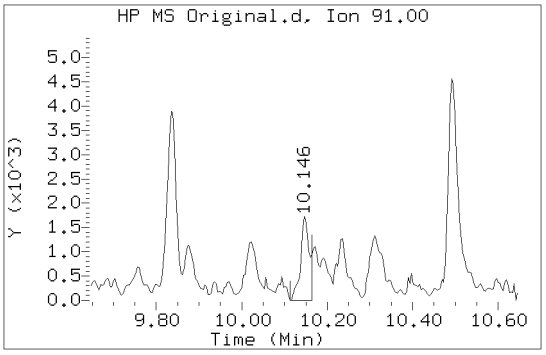

AFTER

MASS
134
AREA
2324
HEIGHT
1281
18-Sep-2023
12:30
linh
pham



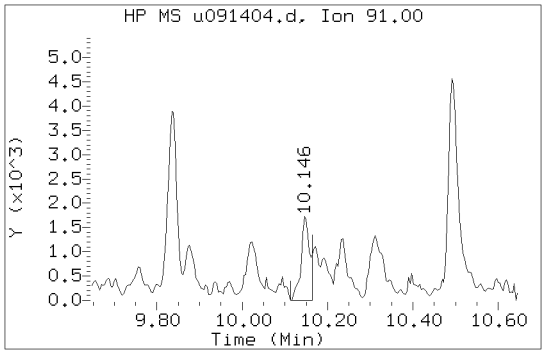

BEFORE

MASS
91
AREA
2549
HEIGHT
1733
18-Sep-2023
12:30
linh
pham




AFTER

MASS
91
AREA
2549
HEIGHT
1733
18-Sep-2023
12:30
linh
pham

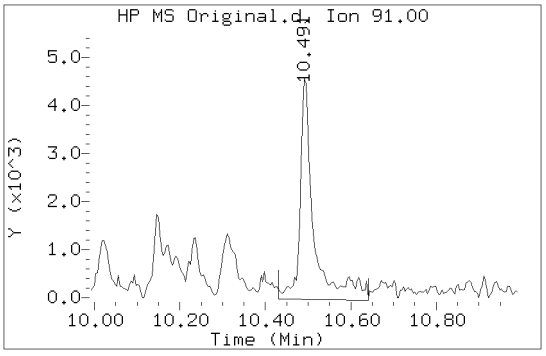



## n-Butylbenzene (104-51-8)

Reason Code:

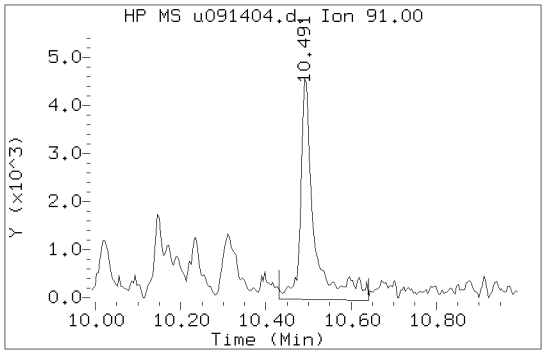
BEFORE

MASS
91
AREA
10524
HEIGHT
4594
18-Sep-2023
12:30
linh
pham




AFTER

MASS
91
AREA
10524
HEIGHT
4594
18-Sep-2023
12:30
linh
pham



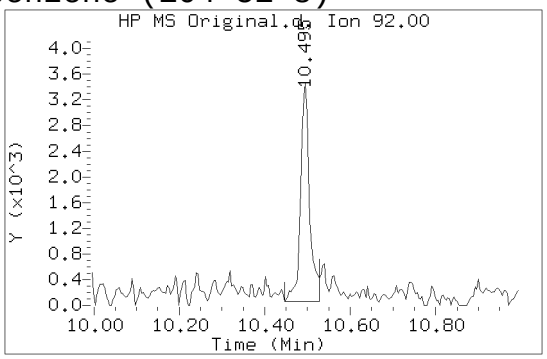
Data File : \\nahstws005\target\chem\voa9.i\u230914.b\u091404.d
Inj Date : 14-SEP-2023 16:53
InstruID : VOA9.i
LabSampID : VSTD001

## n-Butylbenzene (104-51-8)

Reason Code:

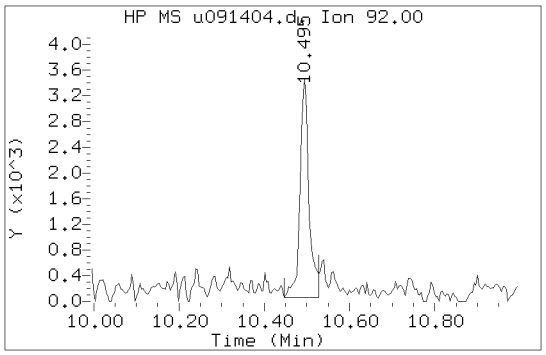
BEFORE

MASS
92
AREA
5135
HEIGHT
3395
18-Sep-2023
12:30
linh
pham



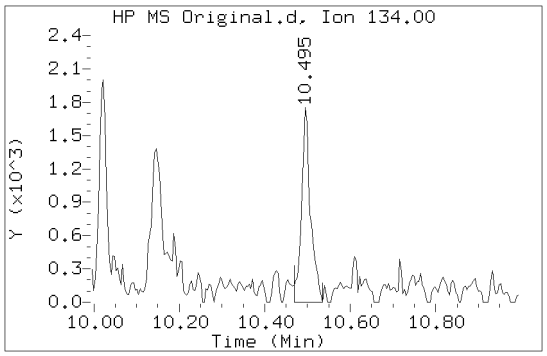

AFTER

MASS
92
AREA
5135
HEIGHT
3395
18-Sep-2023
12:30
linh
pham



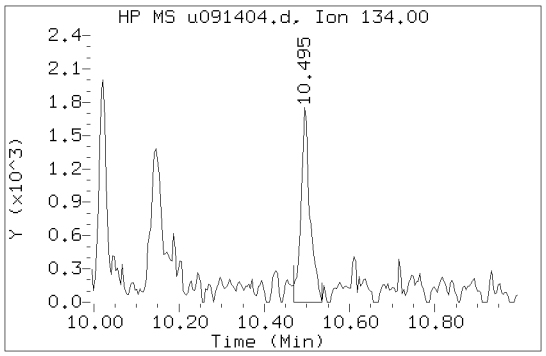

BEFORE

MASS
134
AREA
2625
HEIGHT
1752
18-Sep-2023
12:30
linh
pham




AFTER

MASS
134
AREA
2625
HEIGHT
1752
18-Sep-2023
12:30
linh
pham

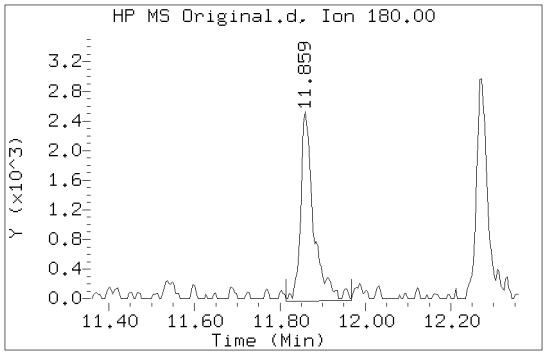



## 1,2,4-Trichlorobenzene (120-82-1)

Reason Code:

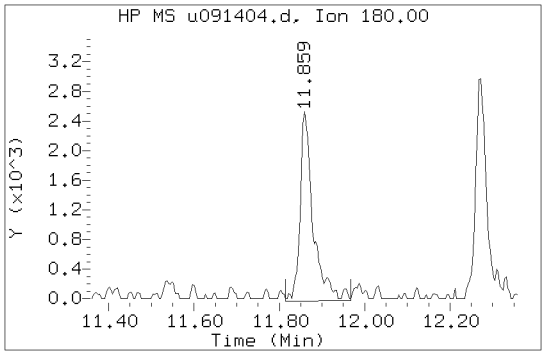
BEFORE

MASS
180
AREA
5578
HEIGHT
2558
18-Sep-2023
12:30
linh
pham



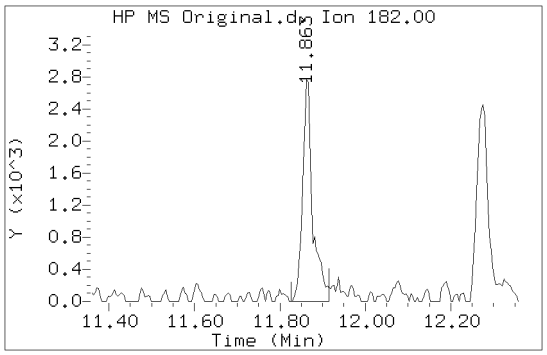

AFTER

MASS
180
AREA
5578
HEIGHT
2558
18-Sep-2023
12:30
linh
pham



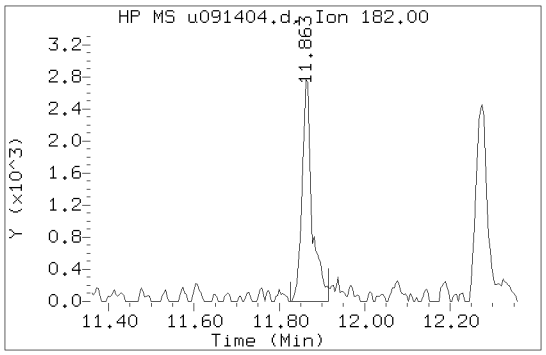

BEFORE

MASS
182
AREA
4594
HEIGHT
2764
18-Sep-2023
12:30
linh
pham




AFTER

MASS
182
AREA
4594
HEIGHT
2764
18-Sep-2023
12:30
linh
pham

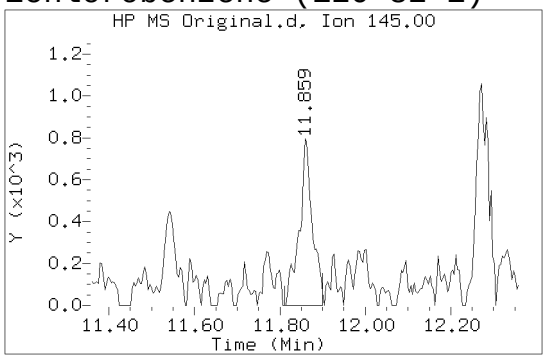


Data File : \\nahstws005\target\chem\voa9.i\u230914.b\u091404.d
Inj Date : 14-SEP-2023 16:53
InstruID : VOA9.i
LabSampID : VSTD001

## 1,2,4-Trichlorobenzene (120-82-1)

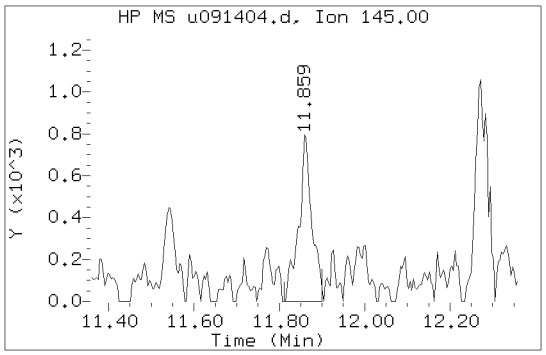
### BEFORE

MASS
145
AREA
1727
HEIGHT
795
18-Sep-2023
12:30
linh
pham




### AFTER

MASS
145
AREA
1727
HEIGHT
795
18-Sep-2023
12:30
linh
pham

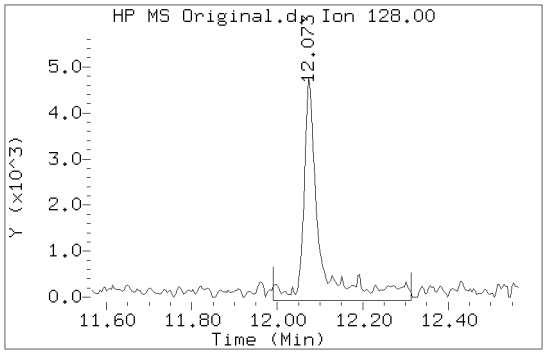



Reason Code:

## Naphthalene (91-20-3)

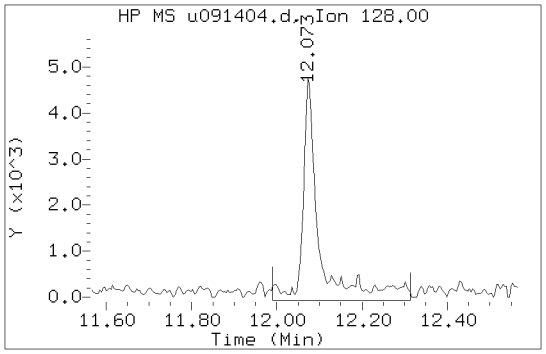
### BEFORE

MASS
128
AREA
13176
HEIGHT
4813
18-Sep-2023
12:30
linh
pham




### AFTER

MASS
128
AREA
13176
HEIGHT
4813
18-Sep-2023
12:30
linh
pham

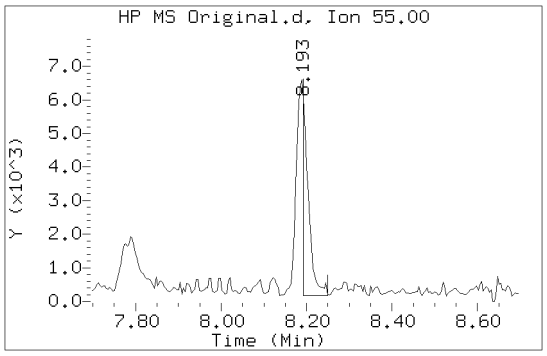



Reason Code:

## 1-Chlorohexane (544-10-5)

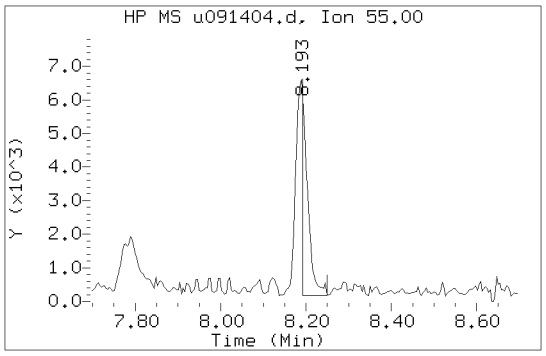
### BEFORE

MASS
55
AREA
5582
HEIGHT
5875
18-Sep-2023
12:30
linh
pham




### AFTER

MASS
55
AREA
5582
HEIGHT
5875
18-Sep-2023
12:30
linh
pham




Reason Code:

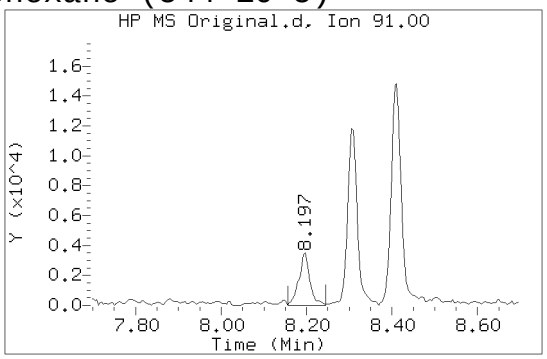
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Inj Date : 14-SEP-2023 16:53
InstruID : VOA9.i
LabSampID : VSTD001

## 1-Chlorohexane (544-10-5)

Reason Code:

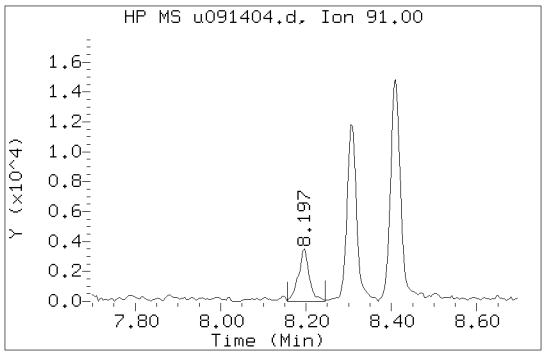
BEFORE

MASS
91
AREA
6348
HEIGHT
3532
18-Sep-2023
12:30
linh
pham




AFTER

MASS
91
AREA
6348
HEIGHT
3532
18-Sep-2023
12:30
linh
pham

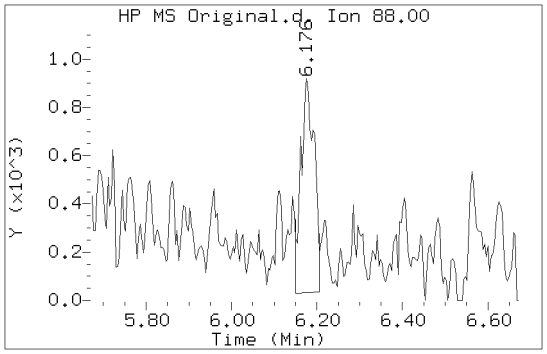



## 1,4-Dioxane ()

Reason Code:

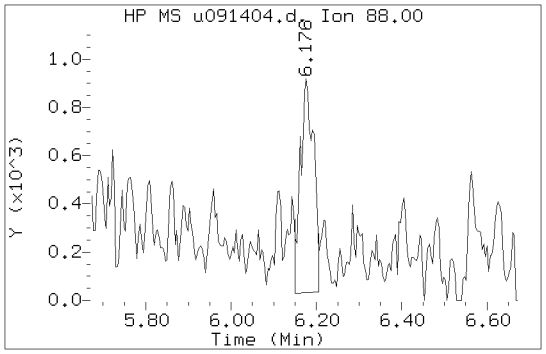
BEFORE

MASS
88
AREA
1976
HEIGHT
888
18-Sep-2023
12:30
linh
pham



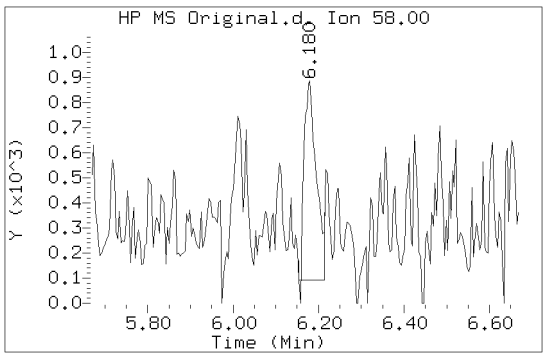

AFTER

MASS
88
AREA
1976
HEIGHT
888
18-Sep-2023
12:30
linh
pham



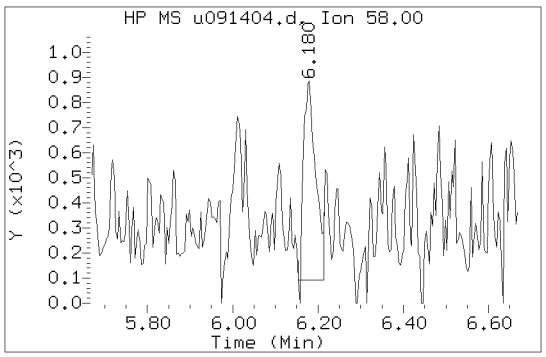

BEFORE

MASS
58
AREA
1583
HEIGHT
793
18-Sep-2023
12:30
linh
pham




AFTER

MASS
58
AREA
1583
HEIGHT
793
18-Sep-2023
12:30
linh
pham

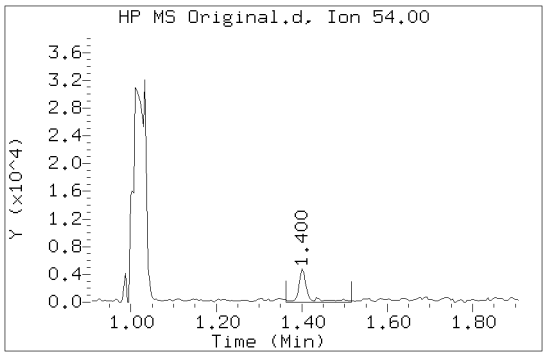



## 1,3-Butadiene (106-99-0)

Reason Code:

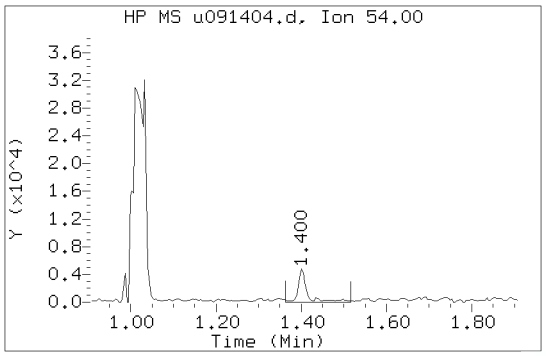
BEFORE

MASS
54
AREA
6763
HEIGHT
4736
18-Sep-2023
12:30
linh
pham




AFTER

MASS
54
AREA
6763
HEIGHT
4736
18-Sep-2023
12:30
linh
pham



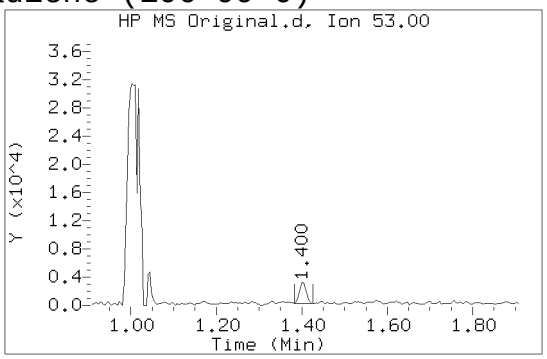
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Inj Date : 14-SEP-2023 16:53
InstruID : VOA9.i
LabSampID : VSTD001

## 1,3-Butadiene (106-99-0)

Reason Code:

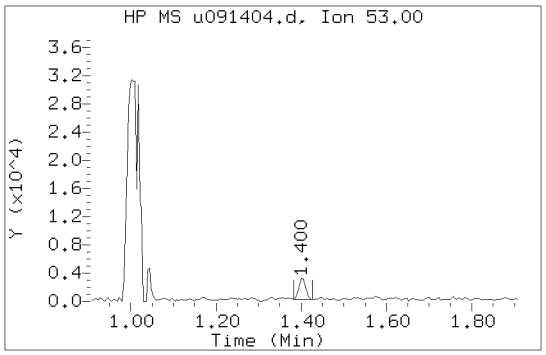
BEFORE

MASS
53
AREA
3441
HEIGHT
3057
18-Sep-2023
12:30
linh
pham




AFTER

MASS
53
AREA
3441
HEIGHT
3057
18-Sep-2023
12:30
linh
pham

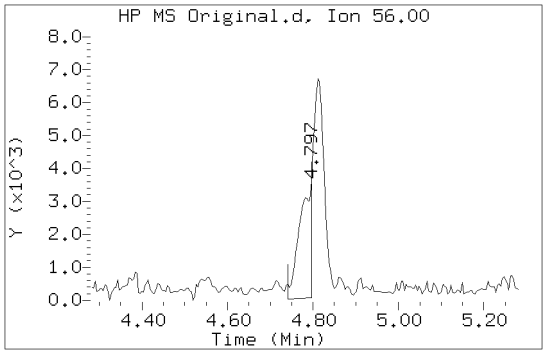



## Cyclohexane (110-82-7)

Reason Code:

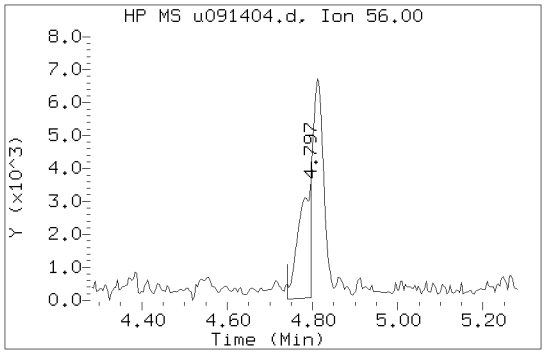
BEFORE

MASS
56
AREA
7153
HEIGHT
3541
18-Sep-2023
12:30
linh
pham



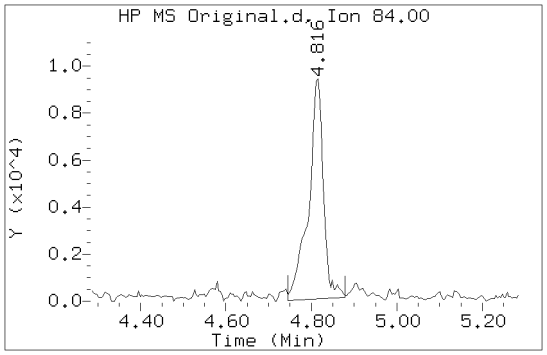

AFTER

MASS
56
AREA
7153
HEIGHT
3541
18-Sep-2023
12:30
linh
pham



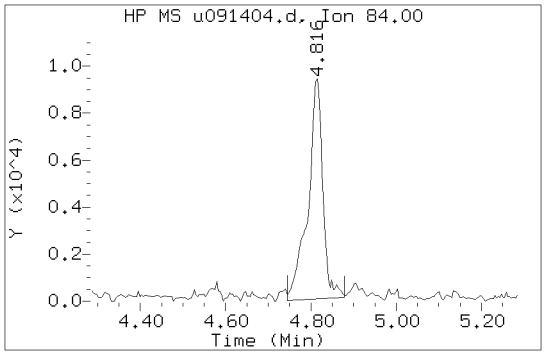

BEFORE

MASS
84
AREA
22774
HEIGHT
9358
18-Sep-2023
12:30
linh
pham



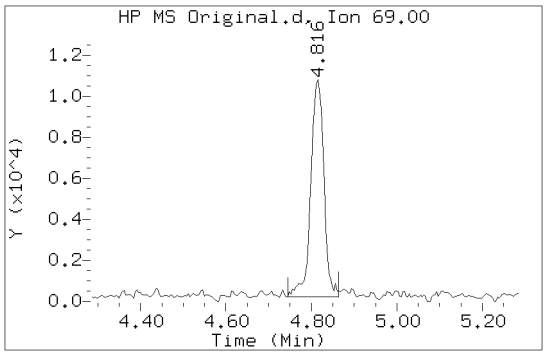

AFTER

MASS
84
AREA
22774
HEIGHT
9358
18-Sep-2023
12:30
linh
pham



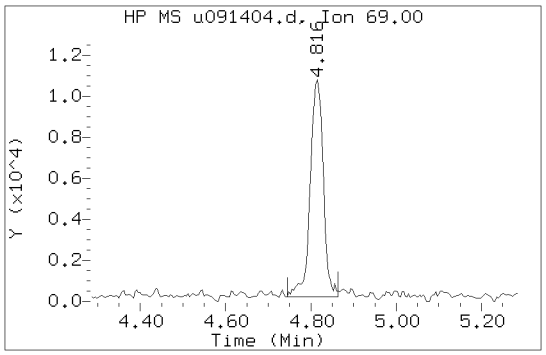

BEFORE

MASS
69
AREA
22855
HEIGHT
10596
18-Sep-2023
12:30
linh
pham




AFTER

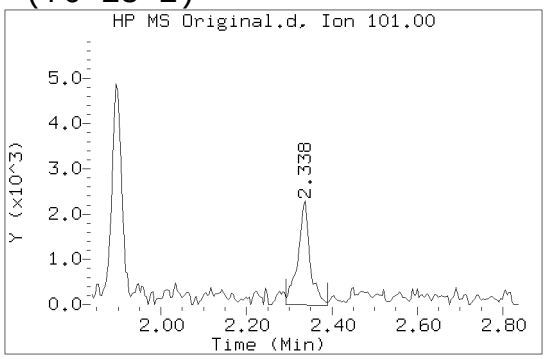
MASS
69
AREA
22855
HEIGHT
10596
18-Sep-2023
12:30
linh
pham



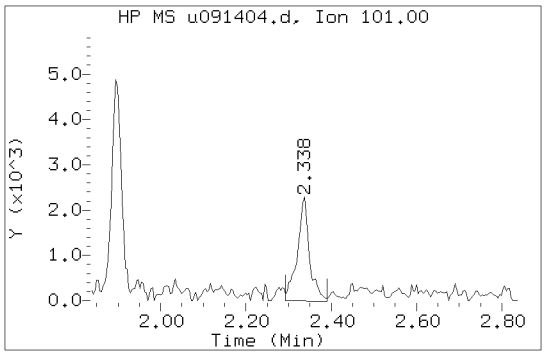
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Inj Date : 14-SEP-2023 16:53
InstruID : VOA9.i
LabSampID : VSTD001

## Freon TF (76-13-1)

BEFORE
MASS
101
AREA
4663
HEIGHT
2302
18-Sep-2023
12:30
linh
pham

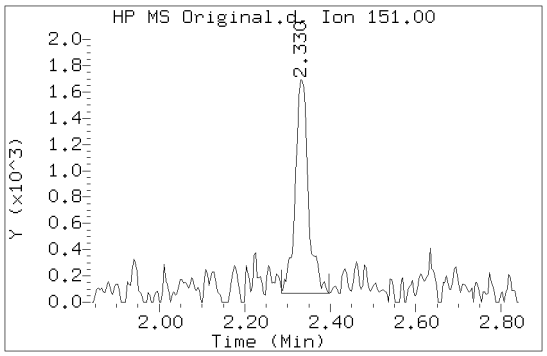



AFTER
MASS
101
AREA
4663
HEIGHT
2302
18-Sep-2023
12:30
linh
pham

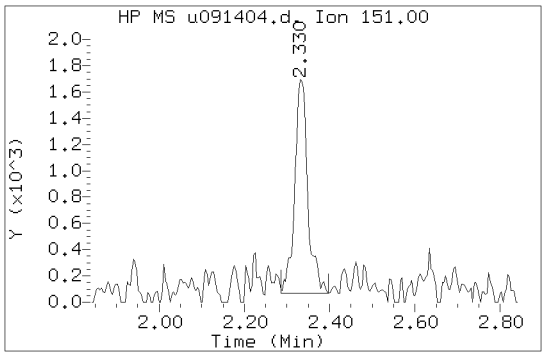



Reason Code:

BEFORE
MASS
151
AREA
3526
HEIGHT
1622
18-Sep-2023
12:30
linh
pham

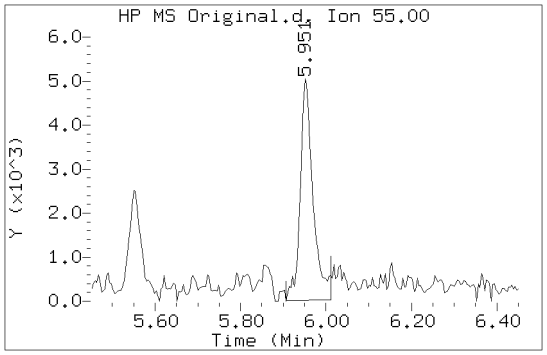



AFTER
MASS
151
AREA
3526
HEIGHT
1622
18-Sep-2023
12:30
linh
pham

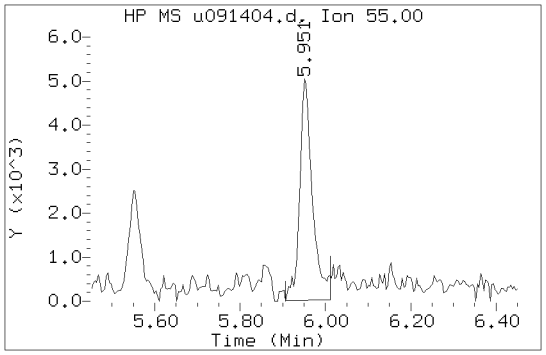



## Methylcyclohexane (108-87-2)

BEFORE
MASS
55
AREA
10616
HEIGHT
5027
18-Sep-2023
12:30
linh
pham

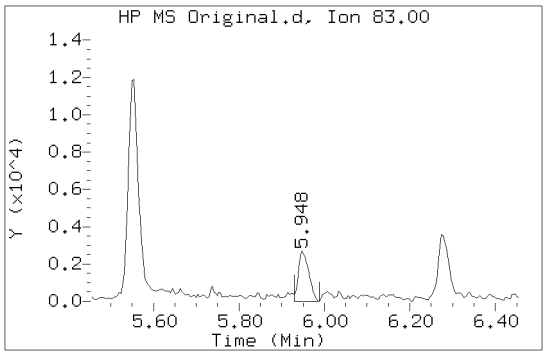



AFTER
MASS
55
AREA
10616
HEIGHT
5027
18-Sep-2023
12:30
linh
pham

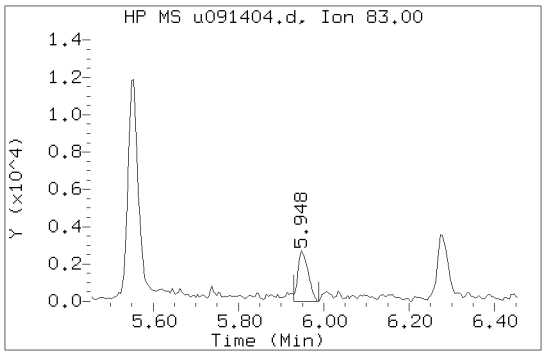



Reason Code:

BEFORE
MASS
83
AREA
4682
HEIGHT
2721
18-Sep-2023
12:30
linh
pham




AFTER
MASS
83
AREA
4682
HEIGHT
2721
18-Sep-2023
12:30
linh
pham

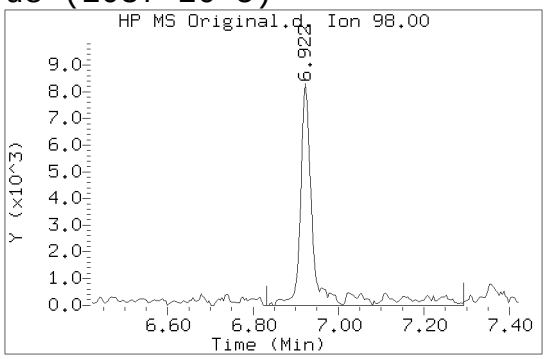


Data File : \\nahstws005\target\chem\voa9.i\u230914.b\u091404.d
Inj Date : 14-SEP-2023 16:53
InstruID : VOA9.i
LabSampID : VSTD001

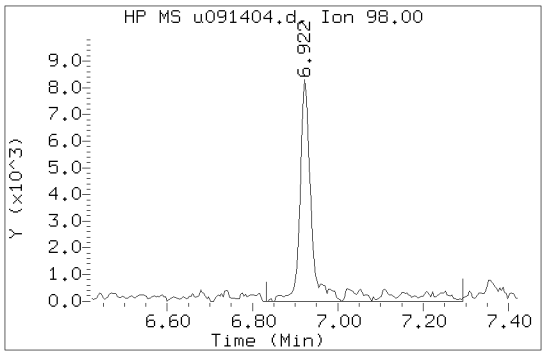
Toluene-d8 (2037-26-5)

Reason Code:

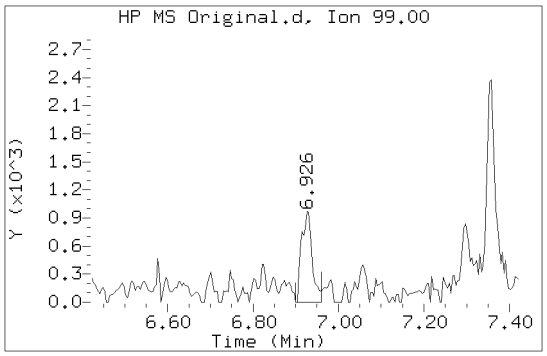
BEFORE
MASS
98
AREA
19157
HEIGHT
8311
18-Sep-2023
12:30
linh
pham



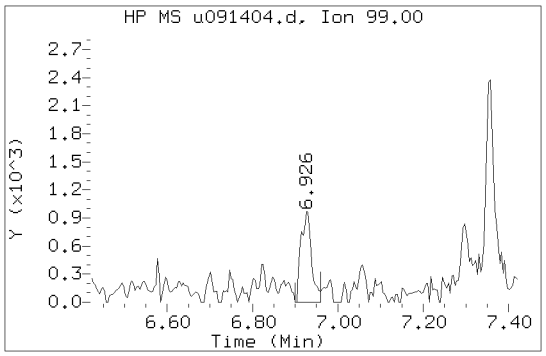

AFTER
MASS
98
AREA
19157
HEIGHT
8311
18-Sep-2023
12:30
linh
pham



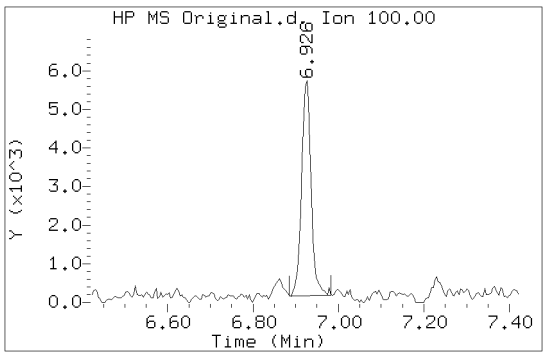

BEFORE
MASS
99
AREA
1718
HEIGHT
965
18-Sep-2023
12:30
linh
pham



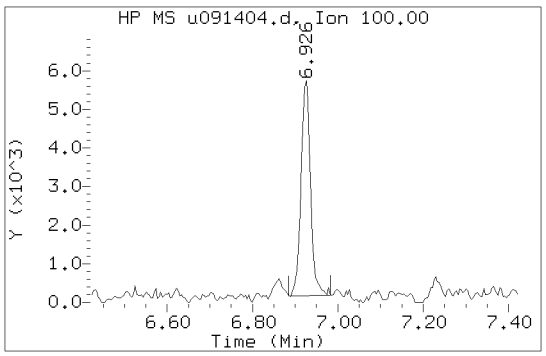

AFTER
MASS
99
AREA
1718
HEIGHT
965
18-Sep-2023
12:30
linh
pham




BEFORE
MASS
100
AREA
8885
HEIGHT
5569
18-Sep-2023
12:30
linh
pham




AFTER
MASS
100
AREA
8885
HEIGHT
5569
18-Sep-2023
12:30
linh
pham



Data File: \\NAHSTWS005\Target\chem\voa9.i\U230914.b\U091405.D  Page 1
Report Date: 18-Sep-2023 12:31

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa9.i\U230914.b\U091405.D
Lab Smp Id: VSTD002  Client Smp ID: VSTD002
Inj Date  : 14-SEP-2023 17:15
Operator  : PC  Inst ID: VOA9.i
Smp Info  : VSTD002;VSTD002;1;4;
Misc Info : V9;WATER;0;1;
Comment   :
Method    : \\NAHSTWS005\Target\chem\voa9.i\U230914.b\8260C.m
Meth Date : 18-Sep-2023 12:31 VOA9.i  Quant Type: ISTD
Cal Date  : 14-SEP-2023 16:53  Cal File: U091404.D
Als bottle: 6  Calibration Sample, Level: 4
Dil Factor: 1.00000
Integrator: HP RTE  Compound Sublist: 08260V9.sub
Target Version:  4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

| Name | Value | Description |
|---|---|---|
| DF | 1.000 | Dilution Factor |
| Uf | 5.000 | ng unit correction factor |
| Vo | 5.000 | sample purged |
| Cpnd Variable | | Local Compound Variable |

| | Compounds | QUANT SIG MASS | RT | EXP RT | REL RT | RESPONSE | AMOUNTS CAL-AMT ( ug/l) | ON-COL ( ug/l) |
|---|---|---|---|---|---|---|---|---|
| * 1 | Pentafluorobenzene | 168 | 4.815 | 4.815 | (1.000) | 606881 | 50.0000 | |
| 2 | Dichlorodifluoromethane | 85 | 1.168 | 1.168 | (0.243) | 13431 | 2.00000 | 3.30(M) |
| 3 | Chloromethane | 50 | 1.299 | 1.299 | (0.270) | 29214 | 2.00000 | 1.68 |
| 5 | Vinyl Chloride | 62 | 1.382 | 1.382 | (0.287) | 14895 | 2.00000 | 1.93 |
| 6 | Bromomethane | 94 | 1.625 | 1.625 | (0.338) | 10105 | 2.00000 | 3.11(M) |
| 7 | Chloroethane | 64 | 1.704 | 1.704 | (0.354) | 11821 | 2.00000 | 2.08 |
| 8 | Trichlorofluoromethane | 101 | 1.899 | 1.899 | (0.394) | 20825 | 2.00000 | 2.10(M) |
| 9 | Acrolein | 56 | 2.274 | 2.274 | (0.472) | 2075 | 4.00000 | 3.98(M) |
| 10 | Acetone | 43 | 2.416 | 2.416 | (0.502) | 19383 | 4.00000 | 4.27 |
| 11 | 1,1-Dichloroethene | 96 | 2.337 | 2.337 | (0.485) | 12933 | 2.00000 | 2.15(M) |
| 15 | Iodomethane | 142 | 2.472 | 2.472 | (0.513) | 12296 | 4.00000 | 6.93 |
| 16 | Acrylonitrile | 53 | 3.068 | 3.068 | (0.637) | 12211 | 4.00000 | 3.44 |
| 17 | Methylene Chloride | 84 | 2.799 | 2.799 | (0.581) | 21334 | 2.00000 | 4.39(M) |
| 18 | Methyl tert-butyl ether | 73 | 3.087 | 3.087 | (0.641) | 27689 | 2.00000 | 1.62 |
| 19 | Carbon Disulfide | 76 | 2.525 | 2.525 | (0.524) | 70966 | 4.00000 | 4.37 |
| 20 | trans-1,2-Dichloroethene | 96 | 3.061 | 3.061 | (0.636) | 12553 | 2.00000 | 1.99 |
| 21 | Vinyl Acetate | 43 | 3.616 | 3.616 | (0.751) | 80121 | 4.00000 | 3.59 |
| 22 | 1,1-Dichloroethane | 63 | 3.518 | 3.518 | (0.731) | 27731 | 2.00000 | 2.19 |
| 24 | 2-Butanone | 43 | 4.276 | 4.276 | (0.888) | 14473 | 4.00000 | 3.93(M) |
| 26 | 2,2-Dichloropropane | 77 | 4.182 | 4.182 | (0.868) | 14529 | 2.00000 | 1.89 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 27 cis-1,2-Dichloroethene | 96 | 4.201 | 4.201 (0.872) | 14265 | 2.00000 | 1.97 |
| 28 Chloroform | 83 | 4.575 | 4.575 (0.950) | 26651 | 2.00000 | 2.17 |

Data File: \\NAHSTWS005\Target\chem\voa9.i\U230914.b\U091405.D Page 2
Report Date: 18-Sep-2023 12:31

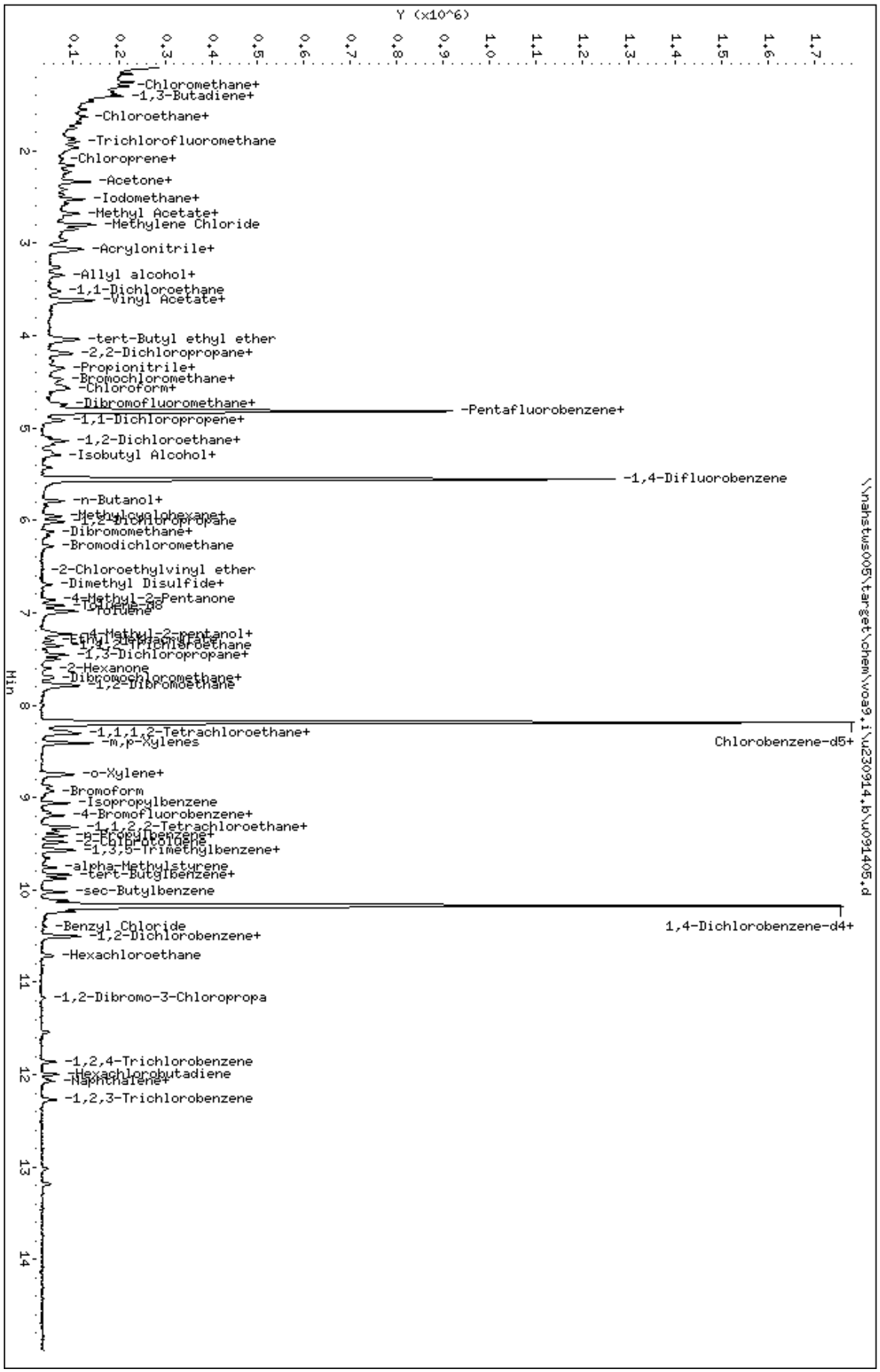
| | Compounds | QUANT SIG MASS | RT | EXP RT | REL RT | RESPONSE | AMOUNTS CAL-AMT ( ug/l) | ON-COL ( ug/l) |
|---|---|---|---|---|---|---|---|---|
| | 29 Bromochloromethane | 128 | 4.470 | 4.470 | (0.928) | 8526 | 2.00000 | 2.25(M) |
| $ | 30 Dibromofluoromethane | 113 | 4.748 | 4.748 | (0.986) | 11893 | 2.00000 | 2.34 |
| | 31 1,1,1-Trichloroethane | 97 | 4.740 | 4.740 | (0.984) | 17998 | 2.00000 | 2.15(M) |
| | 32 1,1-Dichloropropene | 75 | 4.920 | 4.920 | (0.886) | 15645 | 2.00000 | 2.09 |
| | 33 1,2-Dichloroethane | 62 | 5.179 | 5.179 | (0.933) | 17735 | 2.00000 | 1.95 |
| | 34 Carbon Tetrachloride | 117 | 4.913 | 4.913 | (0.885) | 12927 | 2.00000 | 1.93 |
| $ | 35 1,2-Dichloroethane-d4 | 65 | 5.104 | 5.104 | (1.060) | 13220 | 2.00000 | 1.97 |
| * | 36 1,4-Difluorobenzene | 114 | 5.554 | 5.554 | (1.000) | 939835 | 50.0000 | |
| | 37 Benzene | 78 | 5.141 | 5.141 | (0.926) | 47178 | 2.00000 | 1.99 |
| | 38 Trichloroethene | 130 | 5.794 | 5.794 | (1.043) | 15066 | 2.00000 | 2.19(M) |
| | 39 Bromodichloromethane | 83 | 6.281 | 6.281 | (1.131) | 14635 | 2.00000 | 1.91 |
| | 41 2-Chloroethylvinyl ether | 63 | 6.543 | 6.543 | (1.178) | 139 | 4.00000 | 4.59(M) |
| | 42 1,2-Dichloropropane | 63 | 6.011 | 6.011 | (1.082) | 13398 | 2.00000 | 2.14(M) |
| | 44 Dibromomethane | 93 | 6.120 | 6.120 | (1.102) | 8803 | 2.00000 | 2.05 |
| | 45 4-Methyl-2-Pentanone | 43 | 6.862 | 6.862 | (0.838) | 19237 | 4.00000 | 5.33 |
| | 46 cis-1,3-Dichloropropene | 75 | 6.697 | 6.697 | (1.206) | 14220 | 2.00000 | 4.55(M) |
| * | 47 Chlorobenzene-d5 | 117 | 8.185 | 8.185 | (1.000) | 901567 | 50.0000 | |
| $ | 48 Toluene-d8 | 98 | 6.922 | 6.922 | (0.846) | 35573 | 2.00000 | 1.78(M) |
| | 50 Toluene | 91 | 6.982 | 6.982 | (0.853) | 44481 | 2.00000 | 1.83 |
| | 51 trans-1,3-Dichloropropene | 75 | 7.199 | 7.199 | (1.296) | 11642 | 2.00000 | 3.82(M) |
| | 52 2-Hexanone | 43 | 7.601 | 7.601 | (0.929) | 15646 | 4.00000 | 3.82 |
| | 53 1,1,2-Trichloroethane | 83 | 7.357 | 7.357 | (0.899) | 11142 | 2.00000 | 2.11 |
| | 54 1,3-Dichloropropane | 76 | 7.499 | 7.499 | (0.916) | 21891 | 2.00000 | 2.06 |
| | 55 Dibromochloromethane | 129 | 7.691 | 7.691 | (0.940) | 11356 | 2.00000 | 1.80 |
| | 56 Tetrachloroethene | 164 | 7.458 | 7.458 | (0.911) | 11547 | 2.00000 | 2.04 |
| | 57 1,2-Dibromoethane | 107 | 7.788 | 7.788 | (0.951) | 11608 | 2.00000 | 1.82 |
| | 58 1-Chlorohexane | 55 | 8.193 | 8.193 | (1.475) | 10420 | 2.00000 | 1.83(M) |
| | 59 Chlorobenzene | 112 | 8.212 | 8.212 | (1.003) | 37490 | 2.00000 | 2.09 |
| | 60 1,1,1,2-Tetrachloroethane | 131 | 8.283 | 8.283 | (1.012) | 11197 | 2.00000 | 1.86 |
| | 61 Ethylbenzene | 106 | 8.305 | 8.305 | (1.015) | 14914 | 2.00000 | 1.86(M) |
| | 62 m,p-Xylenes | 106 | 8.410 | 8.410 | (1.027) | 38808 | 4.00000 | 3.84(M) |
| | 63 o-Xylene | 106 | 8.748 | 8.748 | (1.069) | 19710 | 2.00000 | 1.88(M) |
| | 64 Styrene | 104 | 8.763 | 8.763 | (1.071) | 30031 | 2.00000 | 1.86(M) |
| | 66 Bromoform | 173 | 8.920 | 8.920 | (1.090) | 7208 | 2.00000 | 4.97 |
| | 67 Isopropylbenzene | 105 | 9.063 | 9.063 | (1.107) | 40776 | 2.00000 | 3.11(M) |
| | 68 1,1,2,2-Tetrachloroethane | 83 | 9.329 | 9.329 | (0.917) | 17491 | 2.00000 | 1.97 |
| $ | 69 4-Bromofluorobenzene | 95 | 9.194 | 9.194 | (1.123) | 14167 | 2.00000 | 1.57 |
| * | 70 1,4-Dichlorobenzene-d4 | 152 | 10.172 | 10.172 | (1.000) | 454839 | 50.0000 | |
| | 71 1,2,3-Trichloropropane | 75 | 9.362 | 9.362 | (0.920) | 13247 | 2.00000 | 1.75 |
| | 73 n-Propylbenzene | 91 | 9.411 | 9.411 | (0.925) | 40048 | 2.00000 | 4.35(M) |
| | 74 Bromobenzene | 156 | 9.321 | 9.321 | (0.916) | 13813 | 2.00000 | 1.91 |
| | 75 1,3,5-Trimethylbenzene | 105 | 9.565 | 9.565 | (0.940) | 30884 | 2.00000 | 1.80(M) |
| | 76 2-Chlorotoluene | 91 | 9.482 | 9.482 | (0.932) | 33180 | 2.00000 | 1.96(M) |
| | 77 4-Chlorotoluene | 91 | 9.576 | 9.576 | (0.941) | 33779 | 2.00000 | 1.70(M) |
| | 78 tert-Butylbenzene | 119 | 9.835 | 9.835 | (0.967) | 30827 | 2.00000 | 1.87(M) |
| | 79 1,2,4-Trimethylbenzene | 105 | 9.876 | 9.876 | (0.971) | 30377 | 2.00000 | 1.72(M) |
| | 81 sec-Butylbenzene | 105 | 10.022 | 10.022 | (0.985) | 37386 | 2.00000 | 3.42(M) |
| | 82 p-Isopropyltoluene | 119 | 10.146 | 10.146 | (0.997) | 30473 | 2.00000 | 3.46(M) |
| | 83 1,3-Dichlorobenzene | 146 | 10.116 | 10.116 | (0.994) | 25618 | 2.00000 | 2.00 |
| | 84 1,4-Dichlorobenzene | 146 | 10.191 | 10.191 | (1.002) | 30440 | 2.00000 | 2.12 |
| | 87 n-Butylbenzene | 91 | 10.495 | 10.495 | (1.032) | 25685 | 2.00000 | 3.60(M) |
| | 88 1,2-Dichlorobenzene | 146 | 10.506 | 10.506 | (1.033) | 26803 | 2.00000 | 2.05 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 89 | 1,2-Dibromo-3-Chloropropane | 155 | 11.173 | 11.173 (1.098) | 2172 | 2.00000 | 1.97 |
| 90 | 1,2,4-Trichlorobenzene | 180 | 11.859 | 11.859 (1.166) | 14590 | 2.00000 | 1.96(M) |

| | Compounds | QUANT SIG MASS | RT | EXP RT | REL RT | RESPONSE | AMOUNTS CAL-AMT ( ug/l) | ON-COL ( ug/l) |
|---|---|---|---|---|---|---|---|---|
| | 91 Hexachlorobutadiene | 225 | 11.998 | 11.998 | (1.179) | 7172 | 2.00000 | 2.15 |
| | 92 Naphthalene | 128 | 12.069 | 12.069 | (1.186) | 27784 | 2.00000 | 4.02(M) |
| | 93 1,2,3-Trichlorobenzene | 180 | 12.275 | 12.275 | (1.207) | 11584 | 2.00000 | 1.64 |
| M | 94 1,2-Dichloroethylene (total) | 96 | | | | 26818 | 4.00000 | |
| M | 95 Xylenes (total) | 106 | | | | 58518 | 6.00000 | |
| | 135 1,4-Dioxane | 88 | 6.176 | 6.176 | (1.283) | 3297 | 40.0000 | 37.37(M) |
| | 141 Cyclohexane | 56 | 4.782 | 4.782 | (0.993) | 16765 | 2.00000 | 2.60(H) |
| | 138 Freon TF | 101 | 2.337 | 2.337 | (0.485) | 11603 | 2.00000 | 2.57(M) |
| | 140 1,3-Butadiene | 54 | 1.404 | 1.404 | (0.292) | 13976 | 2.00000 | 1.94 |
| | 147 Methylcyclohexane | 55 | 5.951 | 5.951 | (1.072) | 23709 | 2.00000 | 1.72(M) |
| | 146 Methyl Acetate | 43 | 2.720 | 2.720 | (0.565) | 15728 | 2.00000 | 2.13 |
| | 148 Tert-Butyl alcohol | 59 | 2.975 | 2.975 | (0.618) | 29883 | 40.0000 | 40.18(a) |
| | 149 Isopropyl Alcohol | 45 | 2.566 | 2.566 | (0.533) | 23428 | 40.0000 | 43.91(T) |

## QC Flag Legend

T - Target compound detected outside RT window.
a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.
H - Operator selected an alternate compound hit.


Y (x10^6)
Min
-Chloromethane+
-1,3-Butadiene+
-Chloroethane+
-Trichlorofluoromethane
-Chloroprene+
-Acetone+
-Iodomethane+
-Methyl Acetate+
-Methylene Chloride
-Acrylonitrile+
-Allyl alcohol+
-1,1-Dichloroethane
-Vinyl Acetate+
-tert-Butyl ethyl ether
-2,2-Dichloropropane+
-Propionitrile+
-Bromochloromethane+
-Chloroform+
-Dibromofluoromethane+
-Pentafluorobenzene+
-1,1-Dichloropropene+
-1,2-Dichloroethane+
-Isobutyl Alcohol+
-1,4-Difluorobenzene
-n-Butanol+
-Methylcyclohexane+
-1,2-Dichloropropane
-Dibromomethane+
-Bromodichloromethane
-2-Chloroethylvinyl ether
-Dimethyl Disulfide+
-4-Methyl-2-Pentanone
-Toluene-d8
-Toluene
-4-Methyl-2-pentanol+
-Ethyl Methacrylate+
-1,1,2-Trichloroethane
-1,3-Dichloropropane+
-2-Hexanone
-Dibromochloromethane+
-1,2-Dibromoethane
-1,1,1,2-Tetrachloroethane+
-m,p-Xylenes
Chlorobenzene-d5+
-o-Xylene+
-Bromoform
-Isopropylbenzene
-4-Bromofluorobenzene+
-1,1,2,2-Tetrachloroethane+
-n-Propylbenzene+
-2-Chlorotoluene
-1,3,5-Trimethylbenzene+
-alpha-Methylstyrene
-tert-Butylbenzene+
-sec-Butylbenzene
-Benzyl Chloride
1,4-Dichlorobenzene-d4+
-1,2-Dichlorobenzene+
-Hexachloroethane
-1,2-Dibromo-3-Chloropropa
-1,2,4-Trichlorobenzene
-Hexachlorobutadiene
-Naphthalene+
-1,2,3-Trichlorobenzene
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Instrument: VOA9.i
Operator: PC
Column diameter: 0.18
Page 1

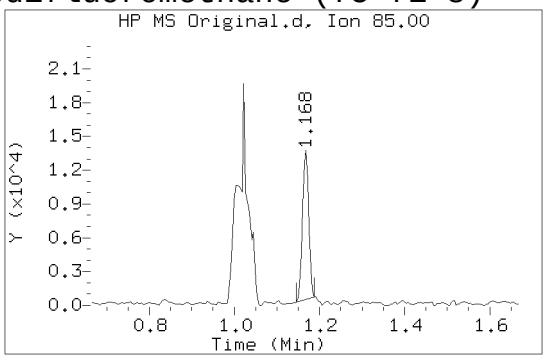
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LabSampID : VSTD002

## Dichlorodifluoromethane (75-71-8)

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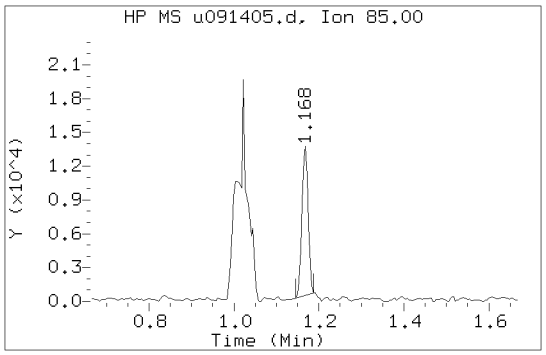
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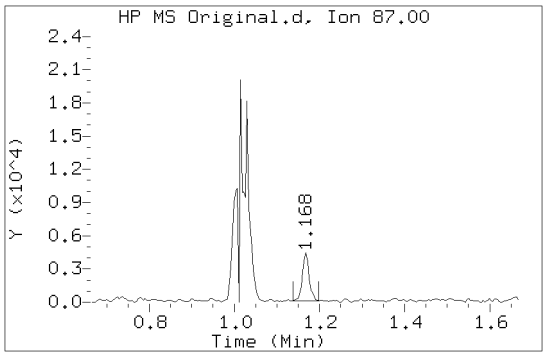

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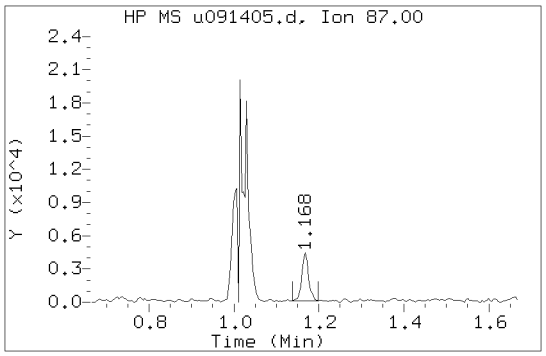

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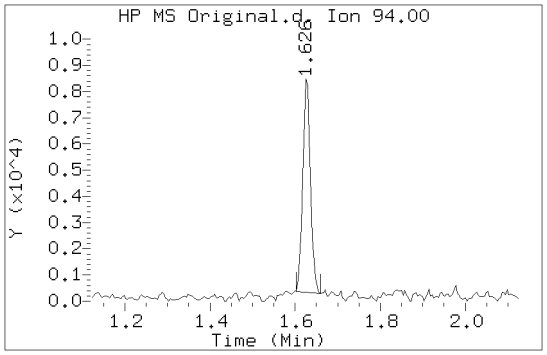



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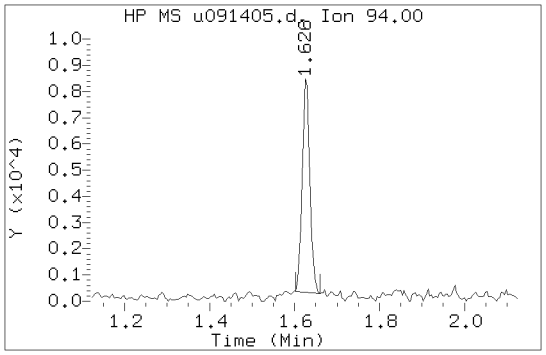
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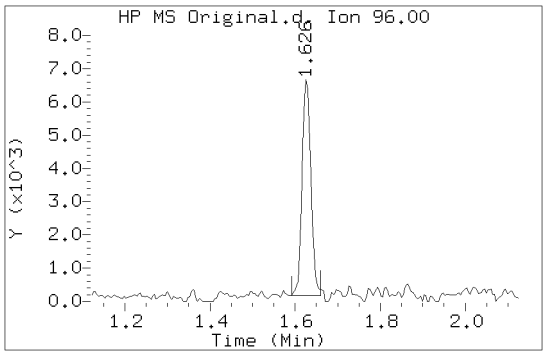

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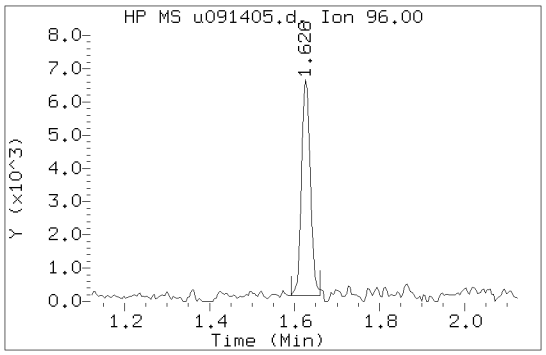

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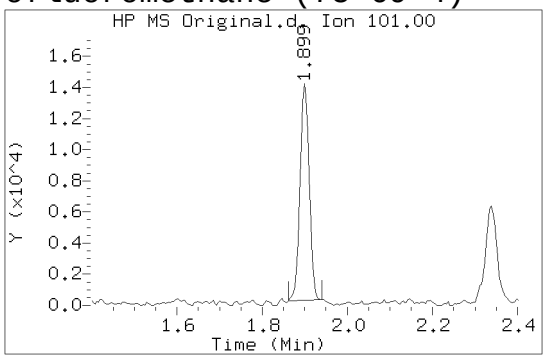


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LabSampID : VSTD002

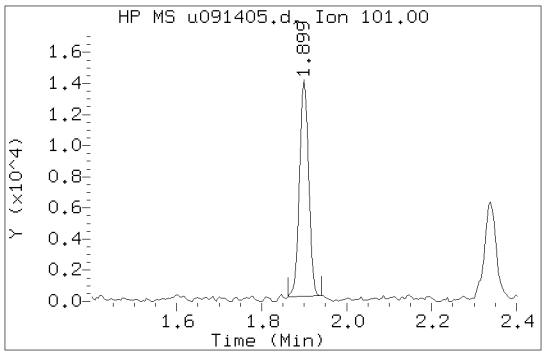
## Trichlorofluoromethane (75-69-4)

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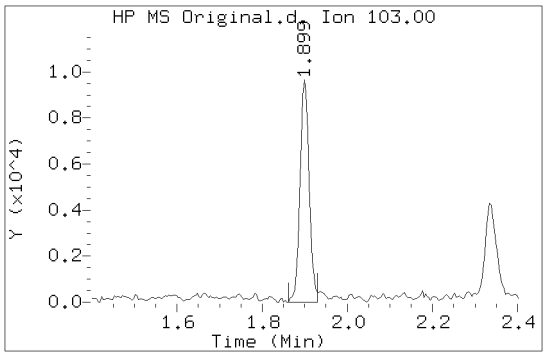
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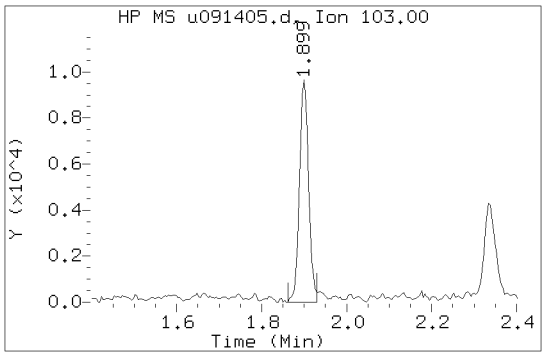

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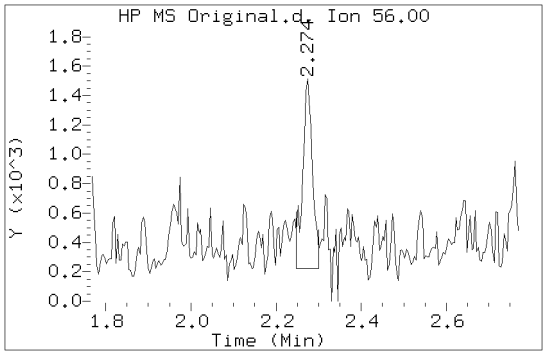

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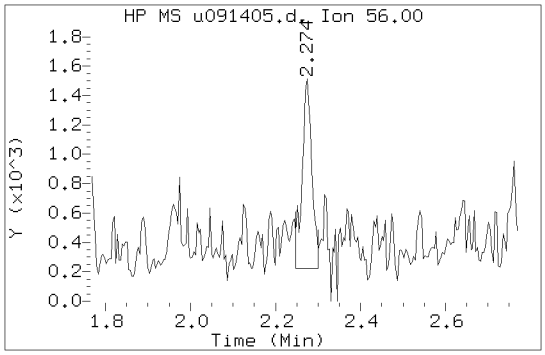

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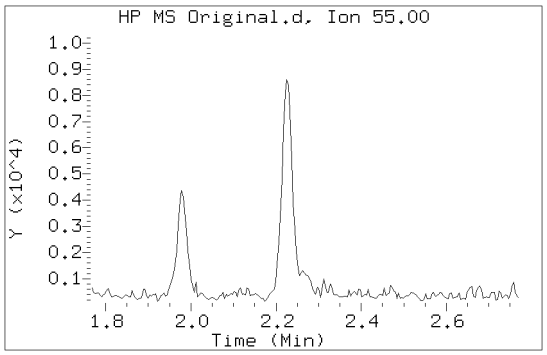
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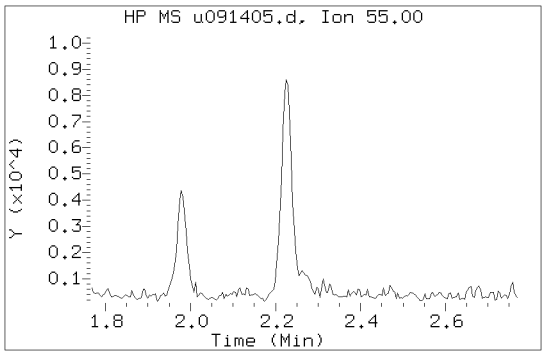

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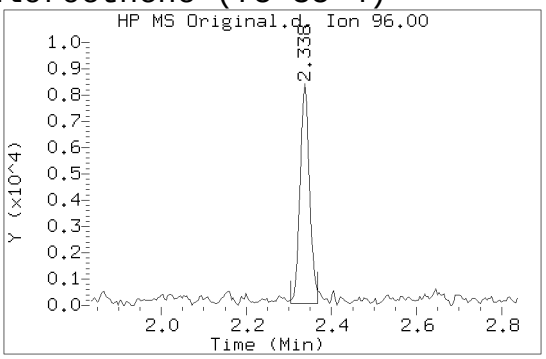


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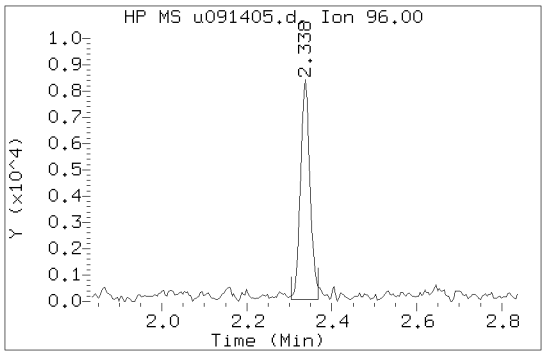
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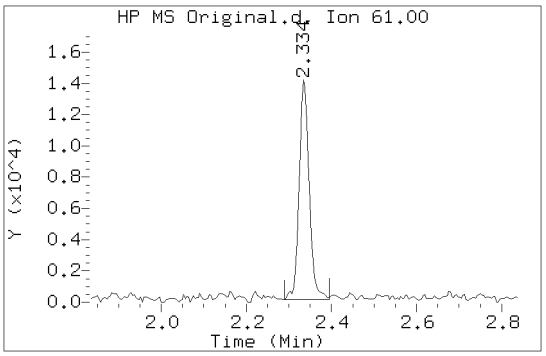
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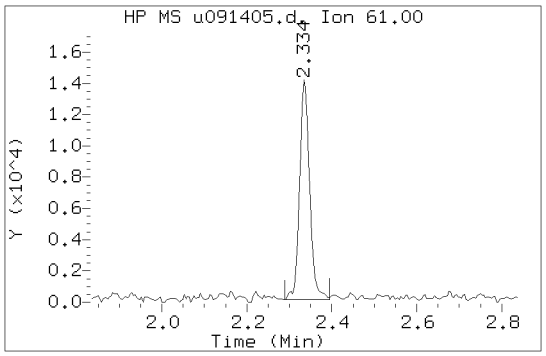

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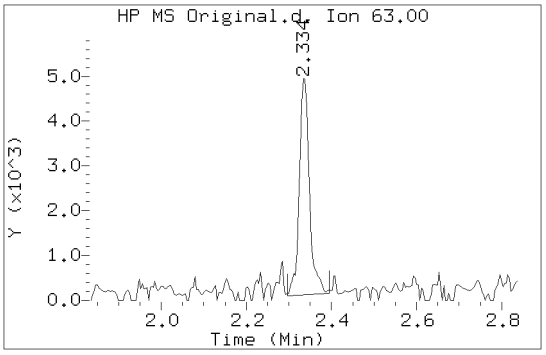

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pham



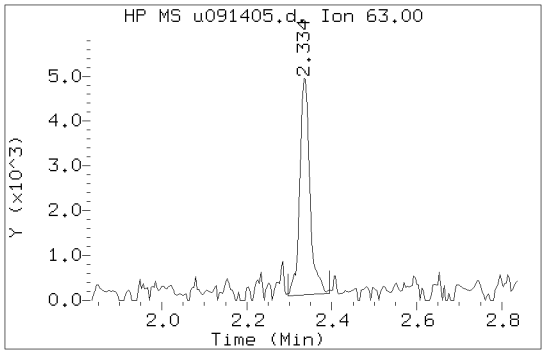

AFTER
MASS
61
AREA
22923
HEIGHT
14042
18-Sep-2023
12:30
linh
pham




BEFORE
MASS
63
AREA
8018
HEIGHT
4827
18-Sep-2023
12:30
linh
pham



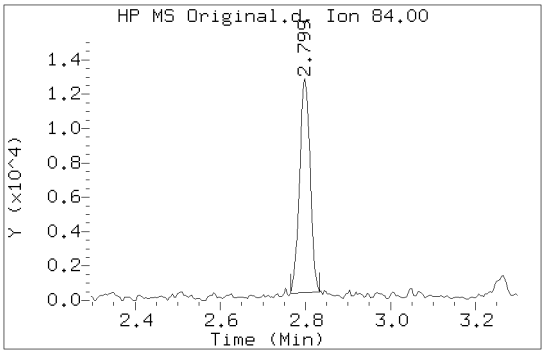

AFTER
MASS
63
AREA
8018
HEIGHT
4827
18-Sep-2023
12:30
linh
pham



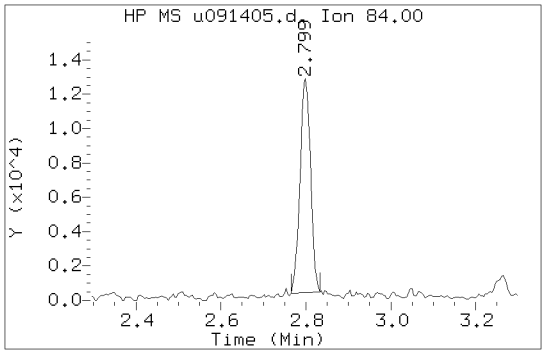

## Methylene Chloride (75-09-2)

Reason Code:

BEFORE
MASS
84
AREA
21334
HEIGHT
12461
18-Sep-2023
12:30
linh
pham




AFTER
MASS
84
AREA
21334
HEIGHT
12461
18-Sep-2023
12:30
linh
pham



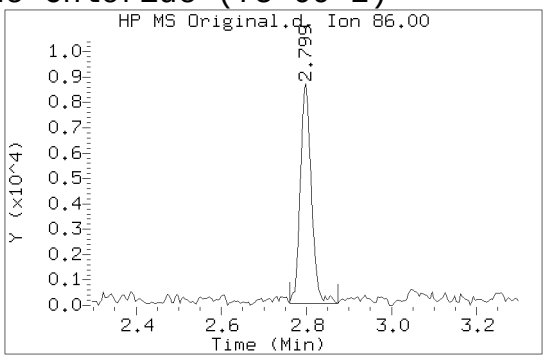
Data File : \\nahstws005\target\chem\voa9.i\u230914.b\u091405.d
Inj Date : 14-SEP-2023 17:15
InstruID : VOA9.i
LabSampID : VSTD002

## Methylene Chloride (75-09-2)

Reason Code:

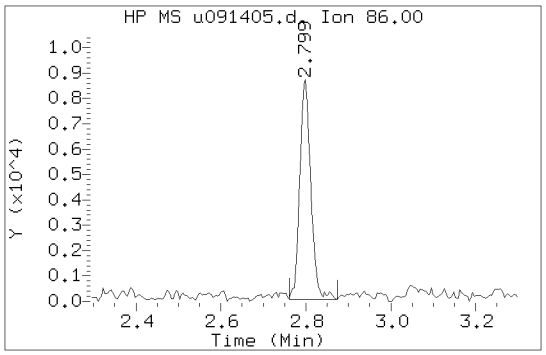
BEFORE

MASS
86
AREA
15642
HEIGHT
8668
18-Sep-2023
12:30
linh
pham



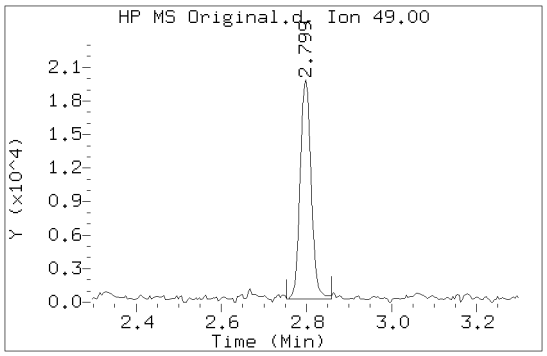

AFTER

MASS
86
AREA
15642
HEIGHT
8668
18-Sep-2023
12:30
linh
pham



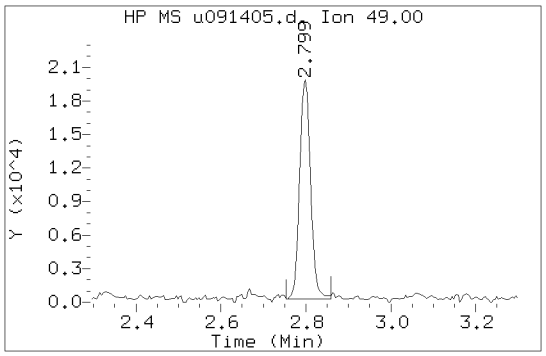

BEFORE

MASS
49
AREA
35009
HEIGHT
19575
18-Sep-2023
12:30
linh
pham




AFTER

MASS
49
AREA
35009
HEIGHT
19575
18-Sep-2023
12:30
linh
pham

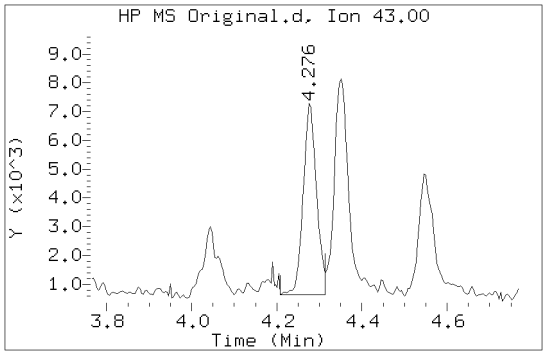



## 2-Butanone (78-93-3)

Reason Code:

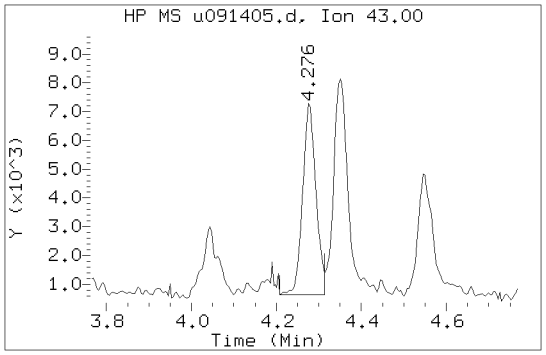
BEFORE

MASS
43
AREA
14473
HEIGHT
6657
18-Sep-2023
12:30
linh
pham



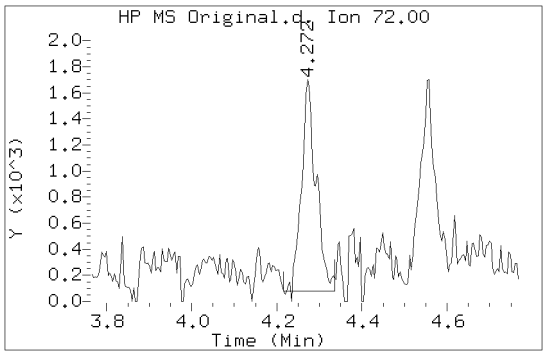

AFTER

MASS
43
AREA
14473
HEIGHT
6657
18-Sep-2023
12:30
linh
pham



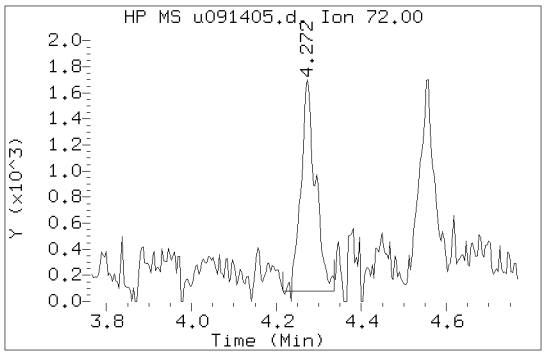

BEFORE

MASS
72
AREA
3852
HEIGHT
1624
18-Sep-2023
12:30
linh
pham




AFTER

MASS
72
AREA
3852
HEIGHT
1624
18-Sep-2023
12:30
linh
pham



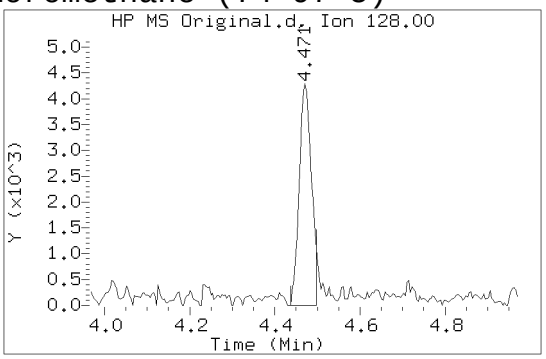
Data File : \\nahstws005\target\chem\voa9.i\u230914.b\u091405.d
Inj Date : 14-SEP-2023 17:15
InstruID : VOA9.i
LabSampID : VSTD002

## Bromochloromethane (74-97-5)

Reason Code:

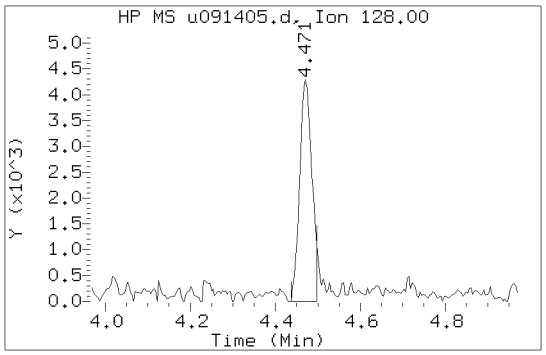
BEFORE

MASS
128
AREA
8526
HEIGHT
4291
18-Sep-2023
12:30
linh
pham



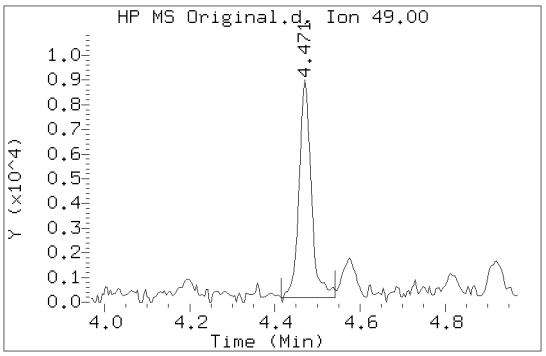

AFTER

MASS
128
AREA
8526
HEIGHT
4291
18-Sep-2023
12:30
linh
pham



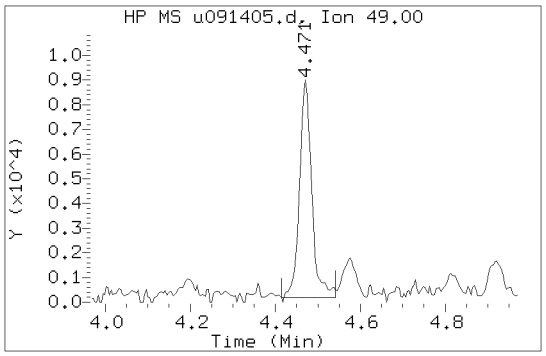

BEFORE

MASS
49
AREA
17595
HEIGHT
8817
18-Sep-2023
12:30
linh
pham



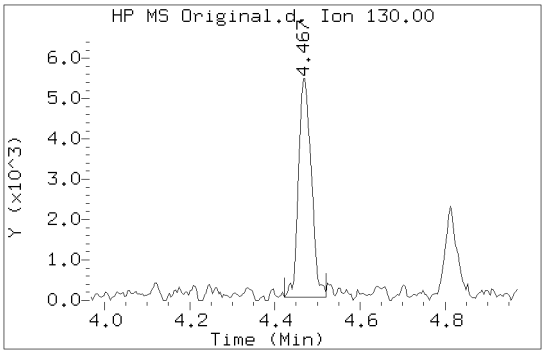

AFTER

MASS
49
AREA
17595
HEIGHT
8817
18-Sep-2023
12:30
linh
pham



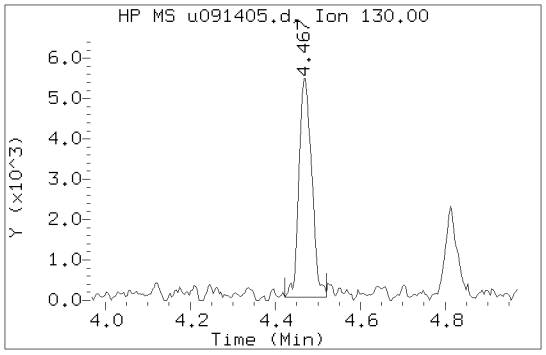

BEFORE

MASS
130
AREA
11331
HEIGHT
5416
18-Sep-2023
12:30
linh
pham




AFTER

MASS
130
AREA
11331
HEIGHT
5416
18-Sep-2023
12:30
linh
pham

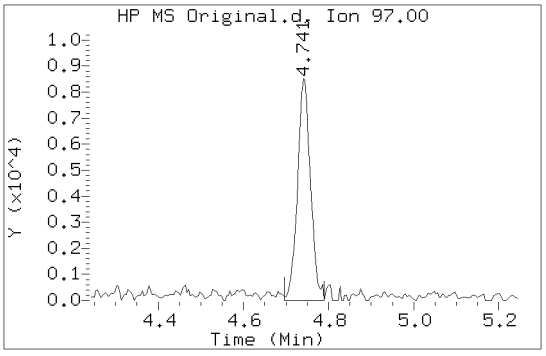



## 1,1,1-Trichloroethane (71-55-6)

Reason Code:

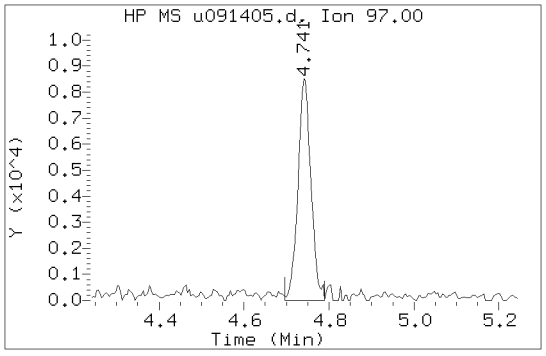
BEFORE

MASS
97
AREA
17998
HEIGHT
8513
18-Sep-2023
12:30
linh
pham




AFTER

MASS
97
AREA
17998
HEIGHT
8513
18-Sep-2023
12:30
linh
pham



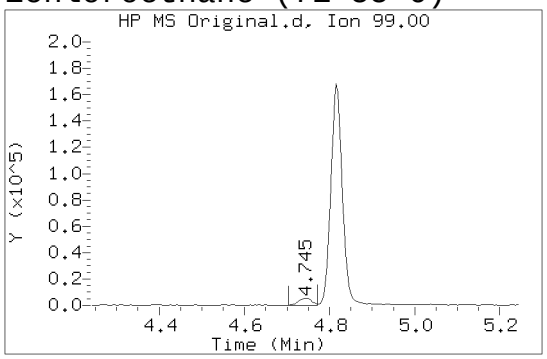
Data File : \\nahstws005\target\chem\voa9.i\u230914.b\u091405.d
Inj Date : 14-SEP-2023 17:15
InstruID : VOA9.i
LabSampID : VSTD002

## 1,1,1-Trichloroethane (71-55-6)

Reason Code:

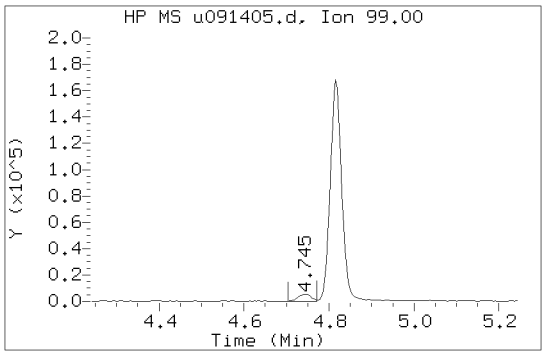
BEFORE

MASS
99
AREA
11140
HEIGHT
5410
18-Sep-2023
12:30
linh
pham



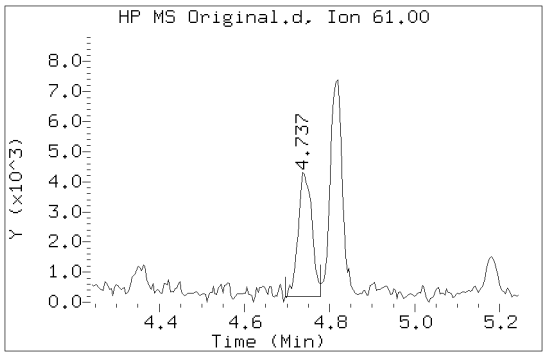

AFTER

MASS
99
AREA
11140
HEIGHT
5410
18-Sep-2023
12:30
linh
pham



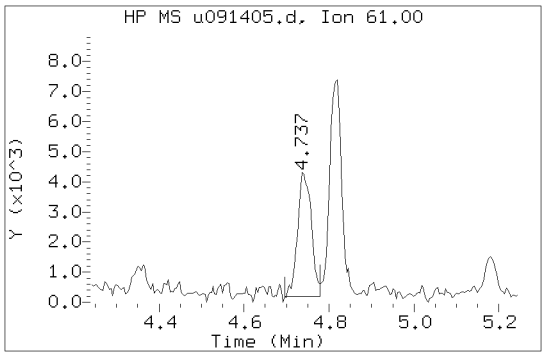

BEFORE

MASS
61
AREA
9216
HEIGHT
4125
18-Sep-2023
12:30
linh
pham




AFTER

MASS
61
AREA
9216
HEIGHT
4125
18-Sep-2023
12:30
linh
pham

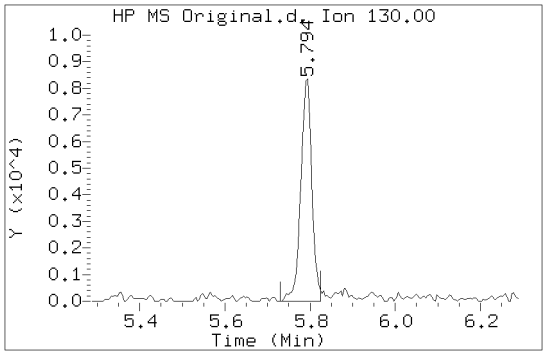



## Trichloroethene (79-01-6)

Reason Code:

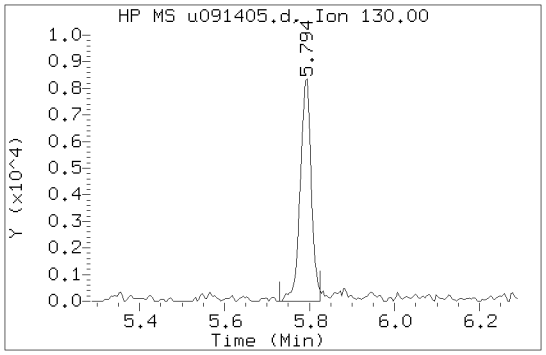
BEFORE

MASS
130
AREA
15066
HEIGHT
8354
18-Sep-2023
12:30
linh
pham



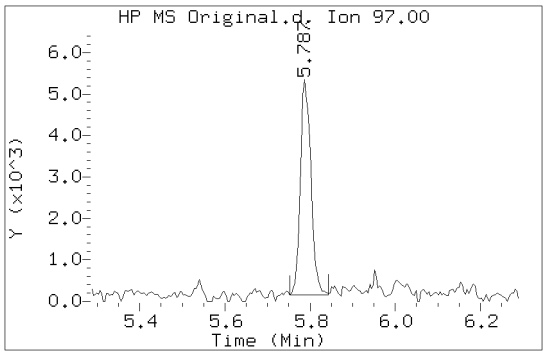

AFTER

MASS
130
AREA
15066
HEIGHT
8354
18-Sep-2023
12:30
linh
pham



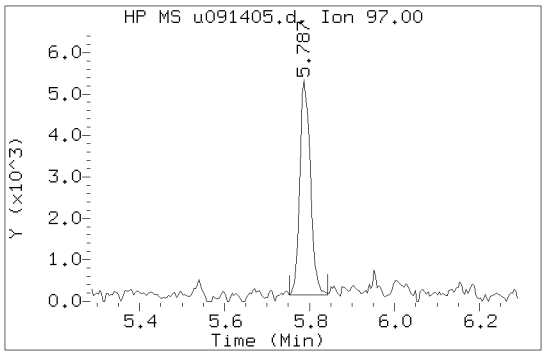

BEFORE

MASS
97
AREA
8937
HEIGHT
5190
18-Sep-2023
12:30
linh
pham




AFTER

MASS
97
AREA
8937
HEIGHT
5190
18-Sep-2023
12:30
linh
pham



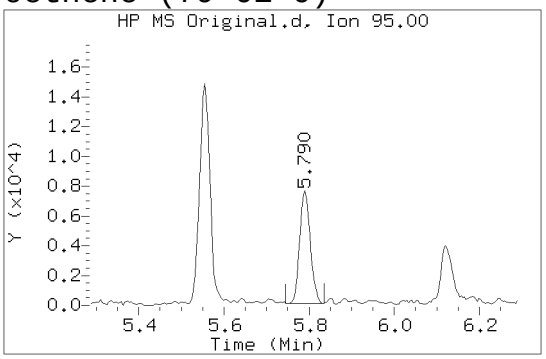
Data File : \\nahstws005\target\chem\voa9.i\u230914.b\u091405.d
Inj Date : 14-SEP-2023 17:15
InstruID : VOA9.i
LabSampID : VSTD002

## Trichloroethene (79-01-6)

Reason Code:

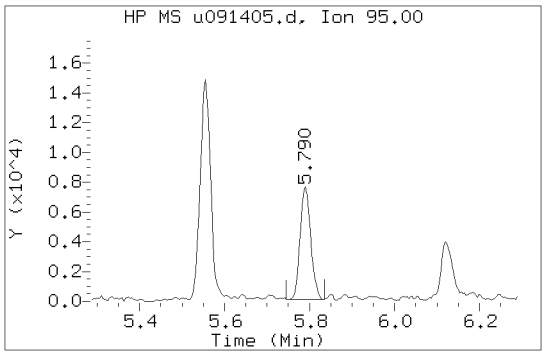
BEFORE

MASS
95
AREA
13039
HEIGHT
7554
18-Sep-2023
12:30
linh
pham




AFTER

MASS
95
AREA
13039
HEIGHT
7554
18-Sep-2023
12:30
linh
pham

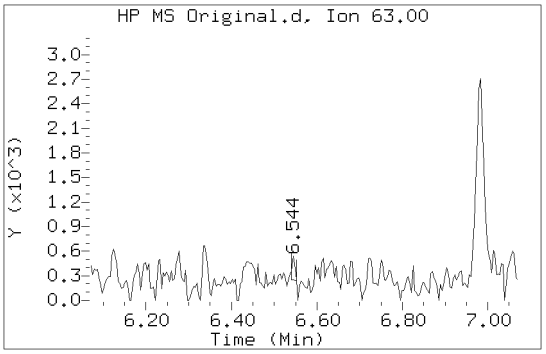



## 2-Chloroethylvinyl ether (110-75-8)

Reason Code:

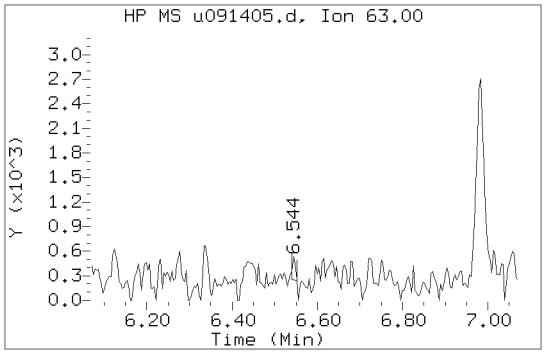
BEFORE

MASS
63
AREA
139
HEIGHT
291
18-Sep-2023
12:30
linh
pham



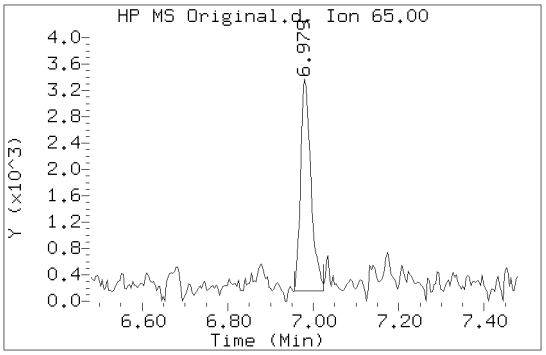

AFTER

MASS
63
AREA
139
HEIGHT
291
18-Sep-2023
12:30
linh
pham



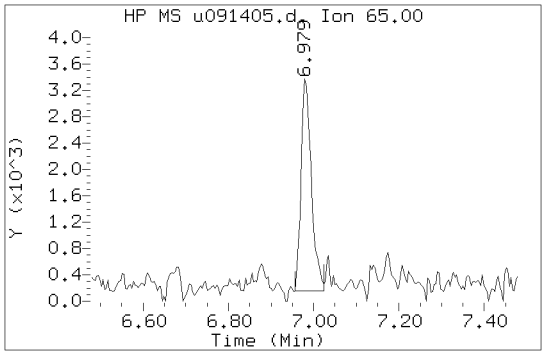

BEFORE

MASS
65
AREA
5530
HEIGHT
3214
18-Sep-2023
12:30
linh
pham



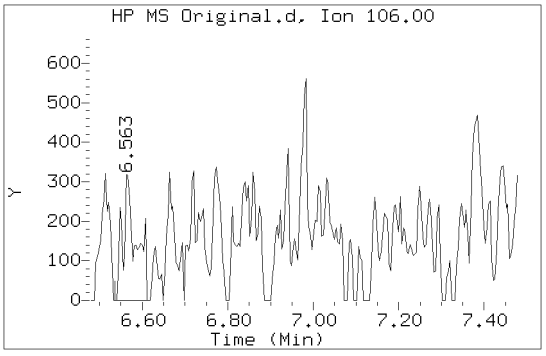

AFTER

MASS
65
AREA
5530
HEIGHT
3214
18-Sep-2023
12:30
linh
pham



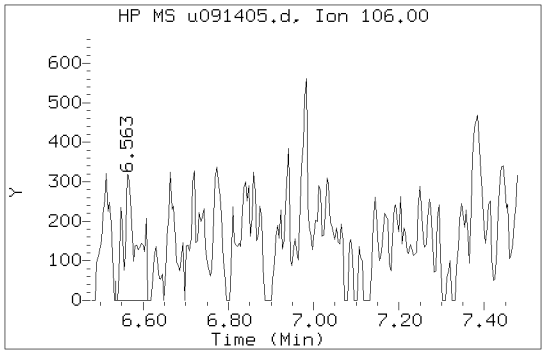

BEFORE

MASS
106
AREA
680
HEIGHT
318
18-Sep-2023
12:30
linh
pham




AFTER

MASS
106
AREA
680
HEIGHT
318
18-Sep-2023
12:30
linh
pham



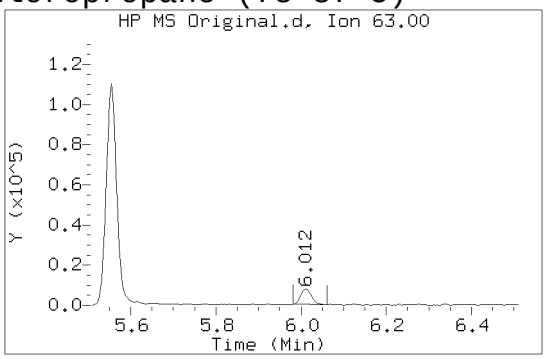
Data File : \\nahstws005\target\chem\voa9.i\u230914.b\u091405.d
Inj Date : 14-SEP-2023 17:15
InstruID : VOA9.i
LabSampID : VSTD002

## 1,2-Dichloropropane (78-87-5)

Reason Code:

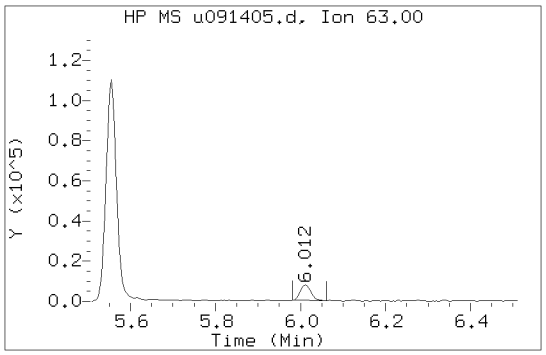
BEFORE

MASS
63
AREA
13398
HEIGHT
7758
18-Sep-2023
12:30
linh
pham



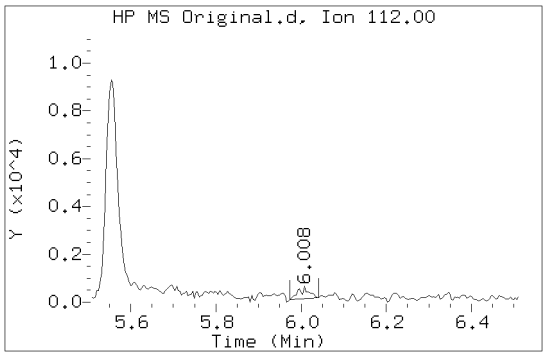

AFTER

MASS
63
AREA
13398
HEIGHT
7758
18-Sep-2023
12:30
linh
pham



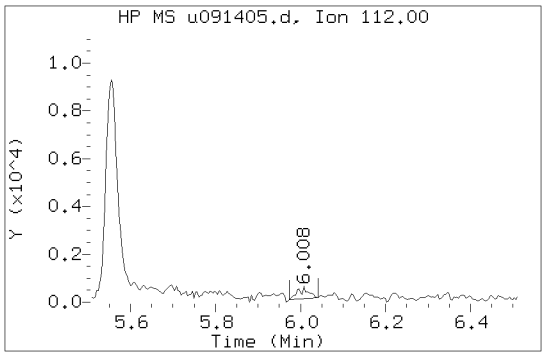

BEFORE

MASS
112
AREA
841
HEIGHT
513
18-Sep-2023
12:30
linh
pham




AFTER

MASS
112
AREA
841
HEIGHT
513
18-Sep-2023
12:30
linh
pham

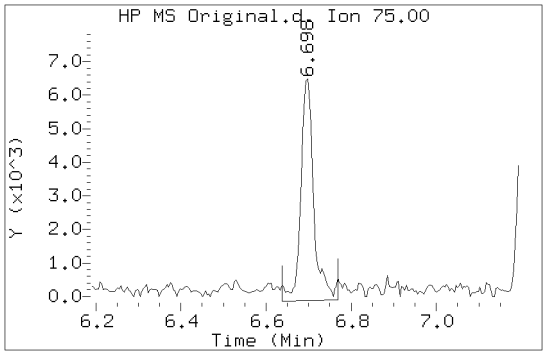



## cis-1,3-Dichloropropene (10061-01-5)

Reason Code:

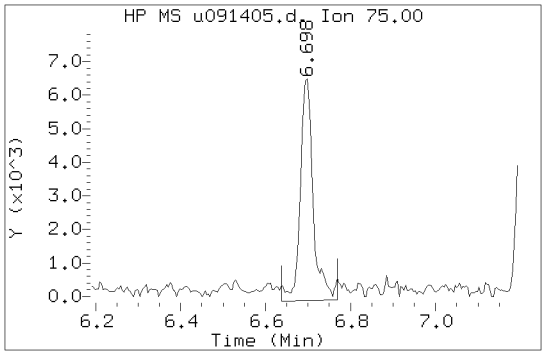
BEFORE

MASS
75
AREA
14220
HEIGHT
6609
18-Sep-2023
12:30
linh
pham



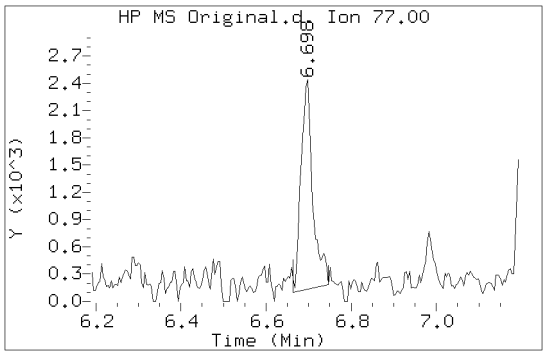

AFTER

MASS
75
AREA
14220
HEIGHT
6609
18-Sep-2023
12:30
linh
pham



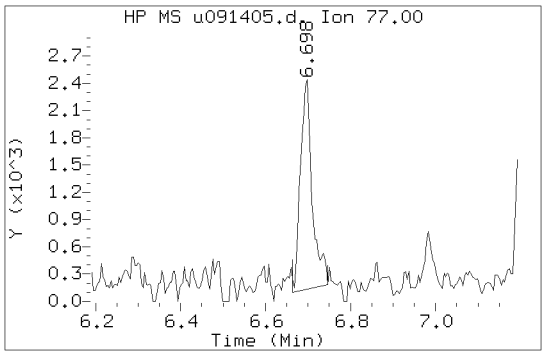

BEFORE

MASS
77
AREA
4432
HEIGHT
2307
18-Sep-2023
12:30
linh
pham




AFTER

MASS
77
AREA
4432
HEIGHT
2307
18-Sep-2023
12:30
linh
pham



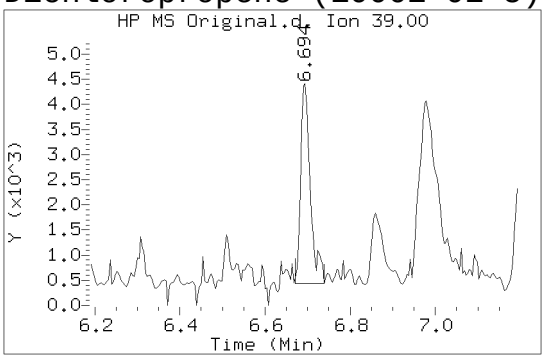
Data File : \\nahstws005\target\chem\voa9.i\u230914.b\u091405.d
Inj Date : 14-SEP-2023 17:15
InstruID : VOA9.i
LabSampID : VSTD002

## cis-1,3-Dichloropropene (10061-01-5)

Reason Code:

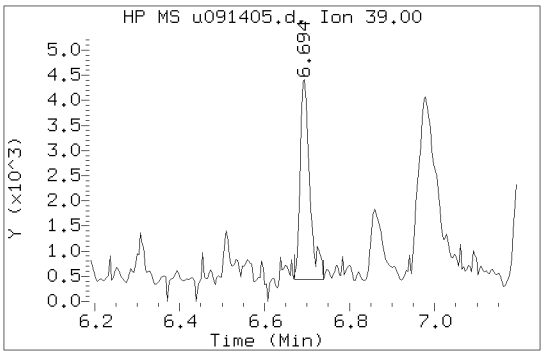
BEFORE

MASS
39
AREA
6245
HEIGHT
3975
18-Sep-2023
12:30
linh
pham




AFTER

MASS
39
AREA
6245
HEIGHT
3975
18-Sep-2023
12:30
linh
pham

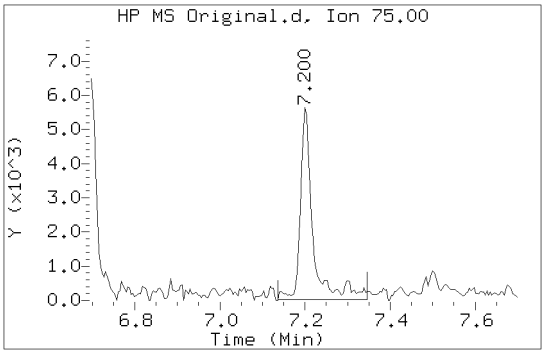



## trans-1,3-Dichloropropene (10061-02-6)

Reason Code:

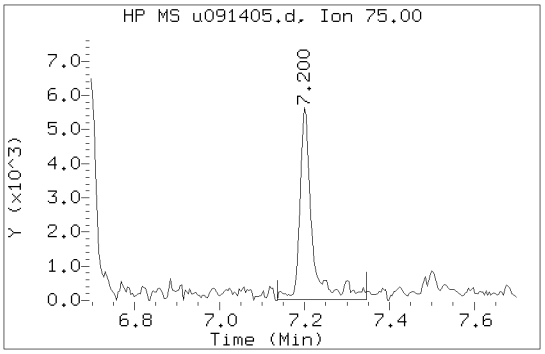
BEFORE

MASS
75
AREA
11642
HEIGHT
5619
18-Sep-2023
12:30
linh
pham



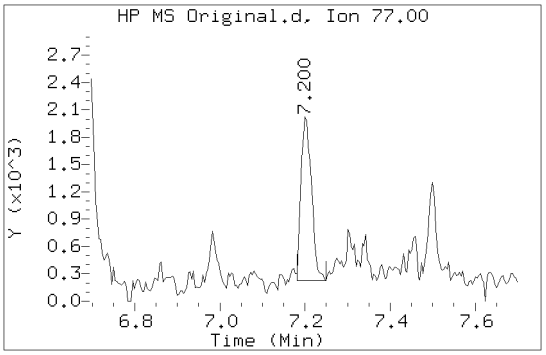

AFTER

MASS
75
AREA
11642
HEIGHT
5619
18-Sep-2023
12:30
linh
pham



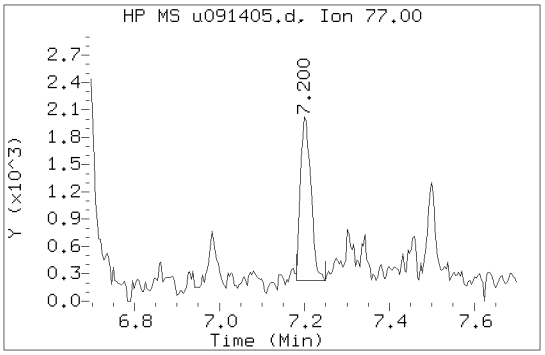

BEFORE

MASS
77
AREA
3067
HEIGHT
1799
18-Sep-2023
12:30
linh
pham



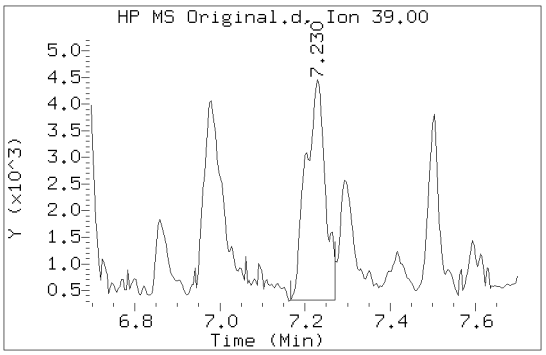

AFTER

MASS
77
AREA
3067
HEIGHT
1799
18-Sep-2023
12:30
linh
pham



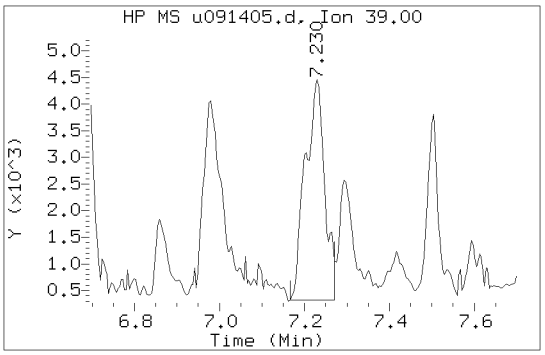

BEFORE

MASS
39
AREA
13138
HEIGHT
4140
18-Sep-2023
12:30
linh
pham




AFTER

MASS
39
AREA
13138
HEIGHT
4140
18-Sep-2023
12:30
linh
pham

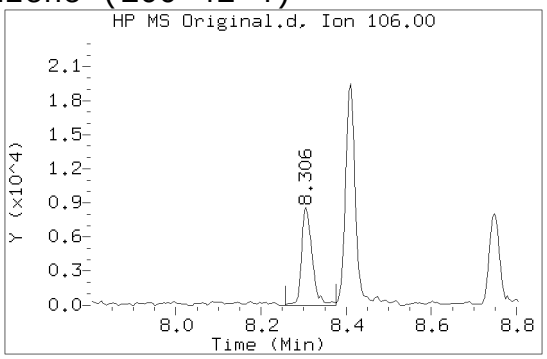


Data File : \\nahstws005\target\chem\voa9.i\u230914.b\u091405.d
Inj Date : 14-SEP-2023 17:15
InstruID : VOA9.i
LabSampID : VSTD002

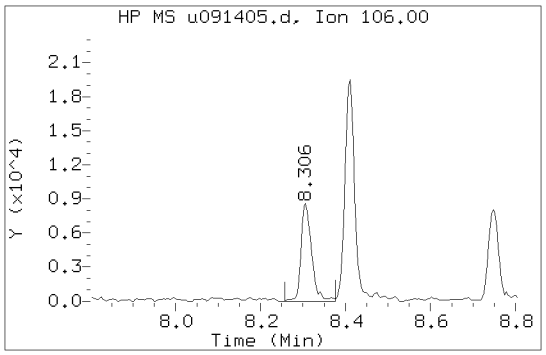
## Ethylbenzene (100-41-4)

Reason Code:

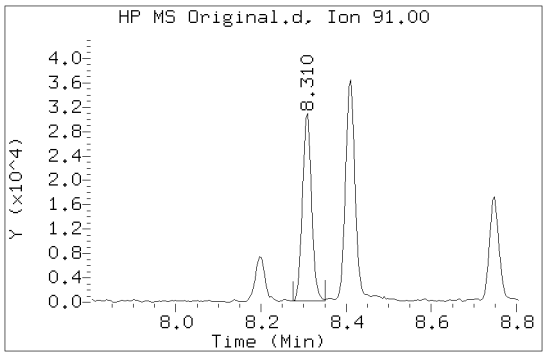
BEFORE
MASS
106
AREA
14914
HEIGHT
8633
18-Sep-2023
12:30
linh
pham



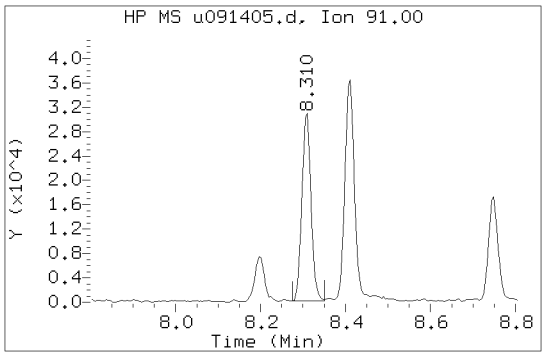

AFTER
MASS
106
AREA
14914
HEIGHT
8633
18-Sep-2023
12:30
linh
pham




BEFORE
MASS
91
AREA
45649
HEIGHT
30852
18-Sep-2023
12:30
linh
pham



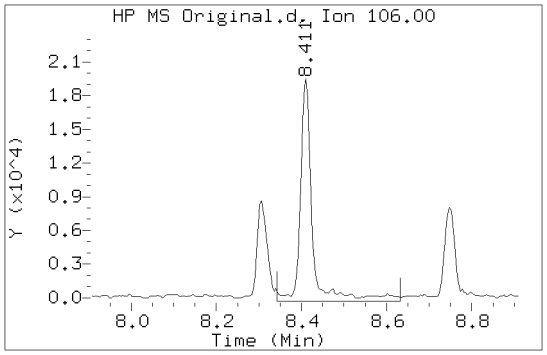

AFTER
MASS
91
AREA
45649
HEIGHT
30852
18-Sep-2023
12:30
linh
pham



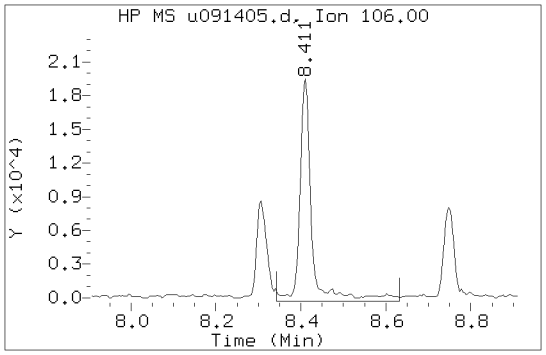

## m,p-Xylenes ()

Reason Code:

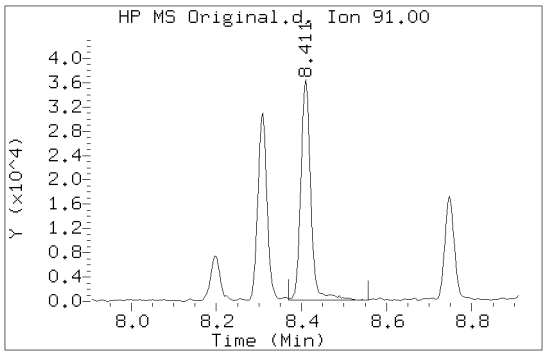
BEFORE
MASS
106
AREA
38808
HEIGHT
19783
18-Sep-2023
12:30
linh
pham



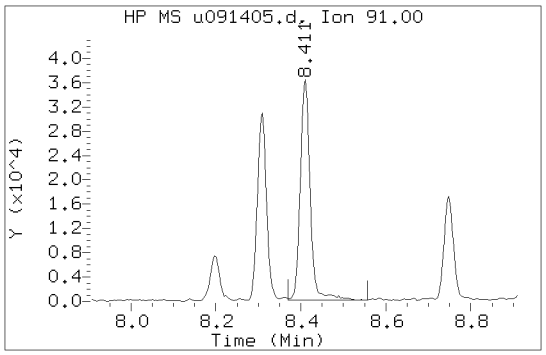

AFTER
MASS
106
AREA
38808
HEIGHT
19783
18-Sep-2023
12:30
linh
pham




BEFORE
MASS
91
AREA
58496
HEIGHT
36279
18-Sep-2023
12:30
linh
pham




AFTER
MASS
91
AREA
58496
HEIGHT
36279
18-Sep-2023
12:30
linh
pham



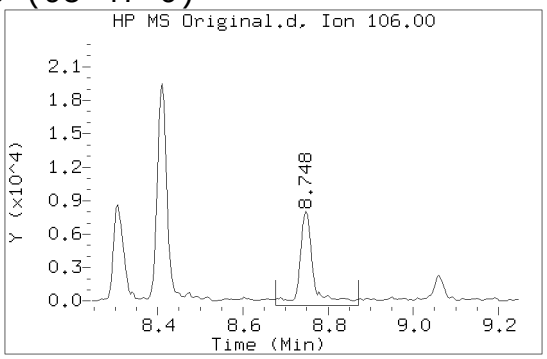
Data File : \\nahstws005\target\chem\voa9.i\u230914.b\u091405.d
Inj Date : 14-SEP-2023 17:15
InstruID : VOA9.i
LabSampID : VSTD002

## o-Xylene (95-47-6)

Reason Code:

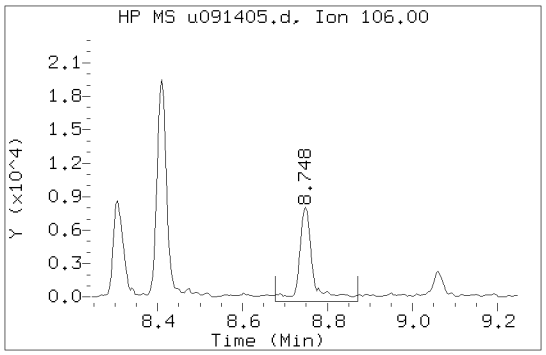
BEFORE

MASS
106
AREA
19710
HEIGHT
8443
18-Sep-2023
12:30
linh
pham



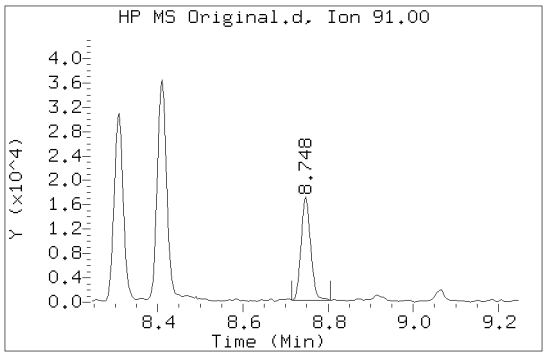

AFTER

MASS
106
AREA
19710
HEIGHT
8443
18-Sep-2023
12:30
linh
pham



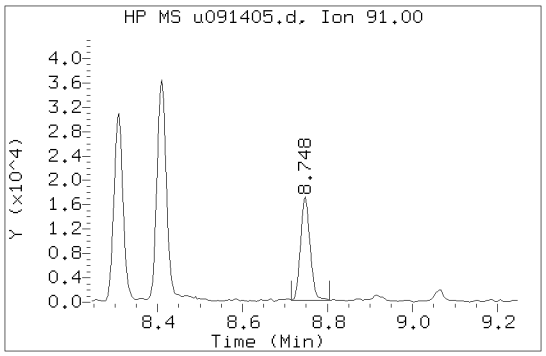

BEFORE

MASS
91
AREA
26164
HEIGHT
17001
18-Sep-2023
12:30
linh
pham




AFTER

MASS
91
AREA
26164
HEIGHT
17001
18-Sep-2023
12:30
linh
pham

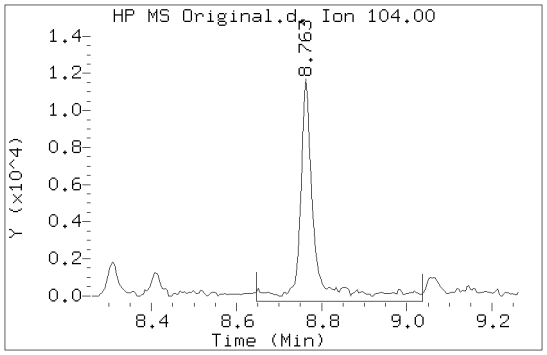



## Styrene (100-42-5)

Reason Code:

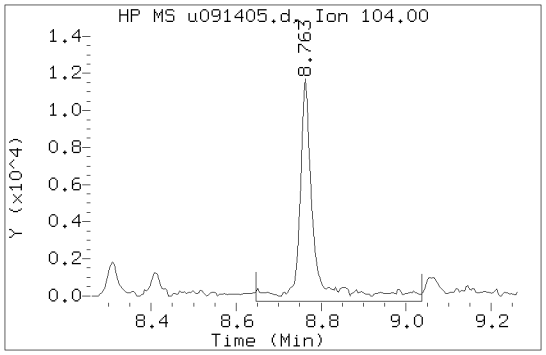
BEFORE

MASS
104
AREA
30031
HEIGHT
11988
18-Sep-2023
12:30
linh
pham



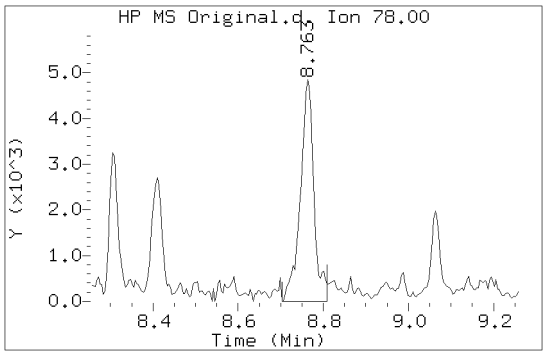

AFTER

MASS
104
AREA
30031
HEIGHT
11988
18-Sep-2023
12:30
linh
pham



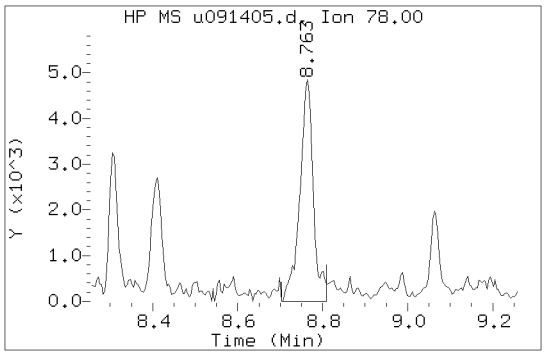

BEFORE

MASS
78
AREA
10635
HEIGHT
4848
18-Sep-2023
12:30
linh
pham




AFTER

MASS
78
AREA
10635
HEIGHT
4848
18-Sep-2023
12:30
linh
pham



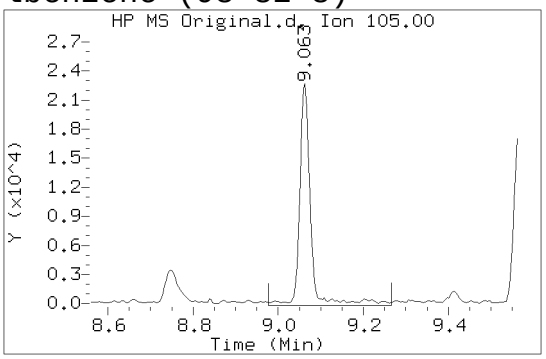
Data File : \\nahstws005\target\chem\voa9.i\u230914.b\u091405.d
Inj Date : 14-SEP-2023 17:15
InstruID : VOA9.i
LabSampID : VSTD002

## Isopropylbenzene (98-82-8)

Reason Code:

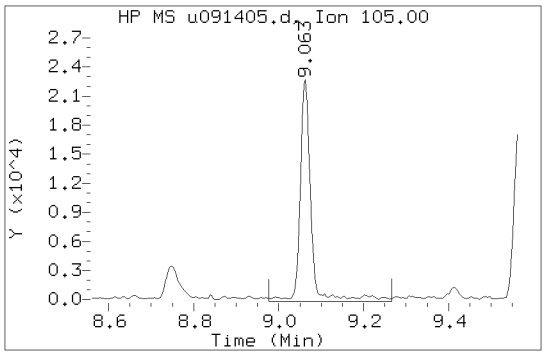
BEFORE

MASS
105
AREA
40776
HEIGHT
22862
18-Sep-2023
12:30
linh
pham



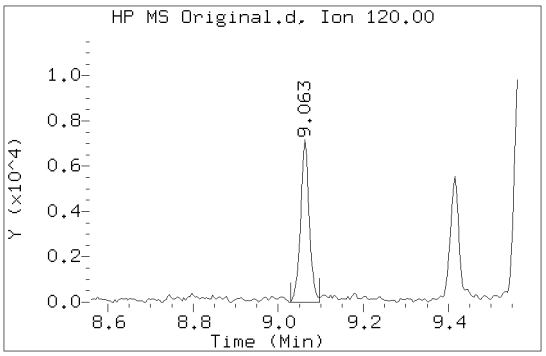

AFTER

MASS
105
AREA
40776
HEIGHT
22862
18-Sep-2023
12:30
linh
pham



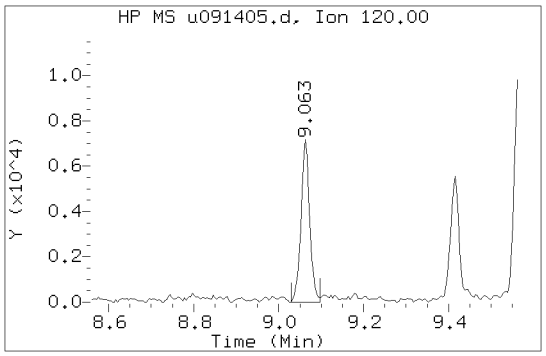

BEFORE

MASS
120
AREA
10093
HEIGHT
7186
18-Sep-2023
12:30
linh
pham




AFTER

MASS
120
AREA
10093
HEIGHT
7186
18-Sep-2023
12:30
linh
pham

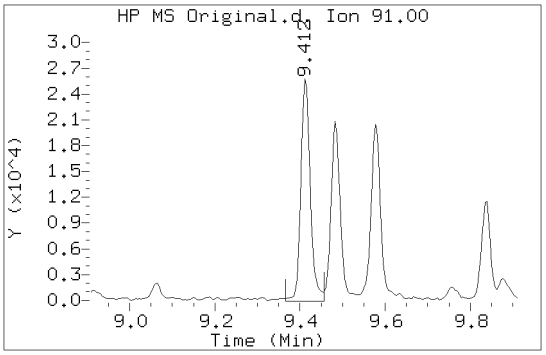



## n-Propylbenzene (106-65-1)

Reason Code:

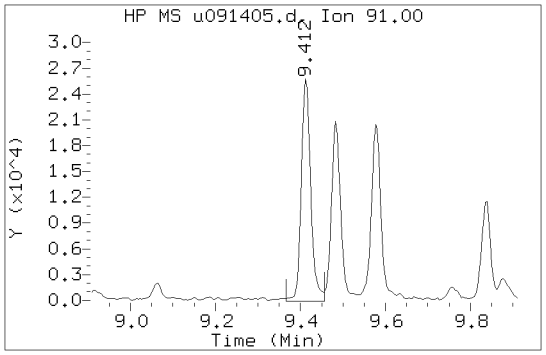
BEFORE

MASS
91
AREA
40048
HEIGHT
25844
18-Sep-2023
12:30
linh
pham



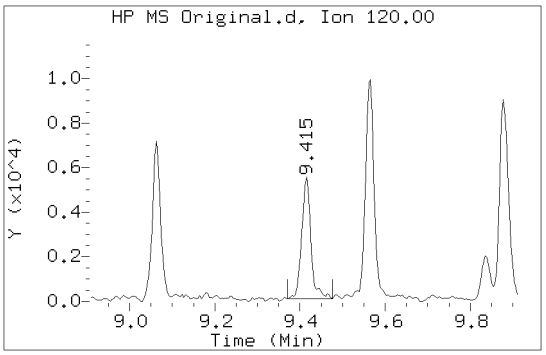

AFTER

MASS
91
AREA
40048
HEIGHT
25844
18-Sep-2023
12:30
linh
pham



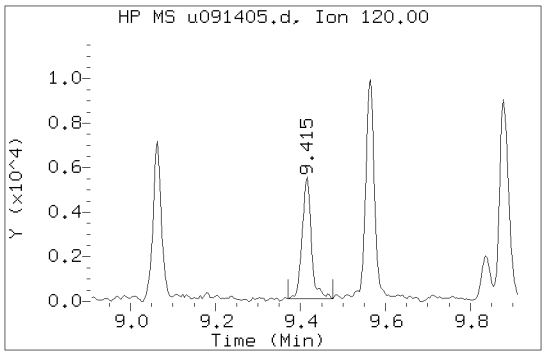

BEFORE

MASS
120
AREA
8282
HEIGHT
5468
18-Sep-2023
12:30
linh
pham




AFTER

MASS
120
AREA
8282
HEIGHT
5468
18-Sep-2023
12:30
linh
pham



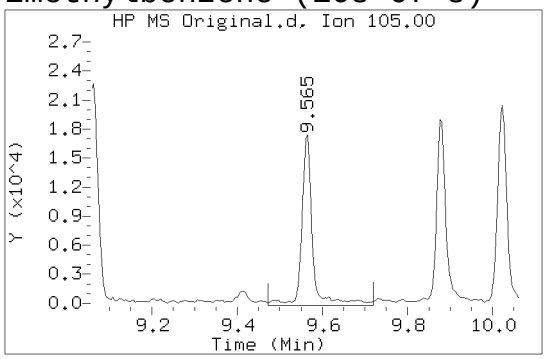
Data File : \\nahstws005\target\chem\voa9.i\u230914.b\u091405.d
Inj Date : 14-SEP-2023 17:15
InstruID : VOA9.i
LabSampID : VSTD002

## 1,3,5-Trimethylbenzene (108-67-8)

Reason Code:

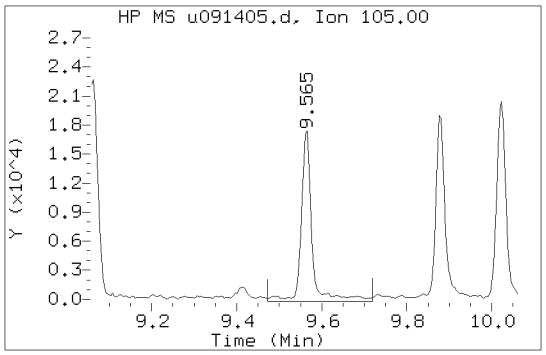
BEFORE

MASS
105
AREA
30884
HEIGHT
17593
18-Sep-2023
12:30
linh
pham



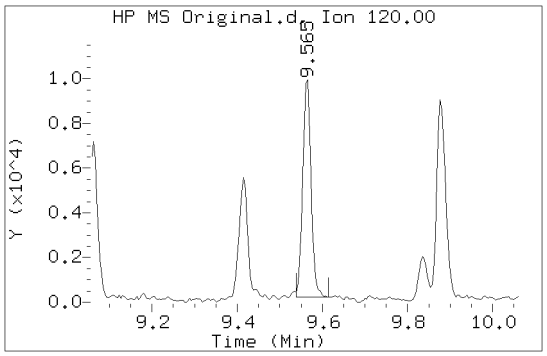

AFTER

MASS
105
AREA
30884
HEIGHT
17593
18-Sep-2023
12:30
linh
pham



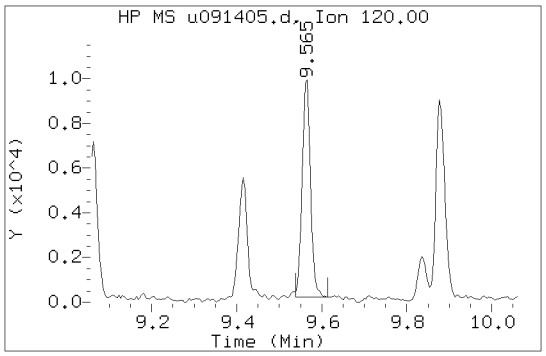

BEFORE

MASS
120
AREA
13262
HEIGHT
9724
18-Sep-2023
12:30
linh
pham




AFTER

MASS
120
AREA
13262
HEIGHT
9724
18-Sep-2023
12:30
linh
pham

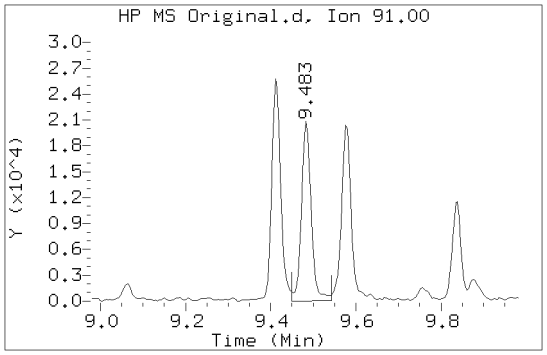



## 2-Chlorotoluene (95-49-8)

Reason Code:

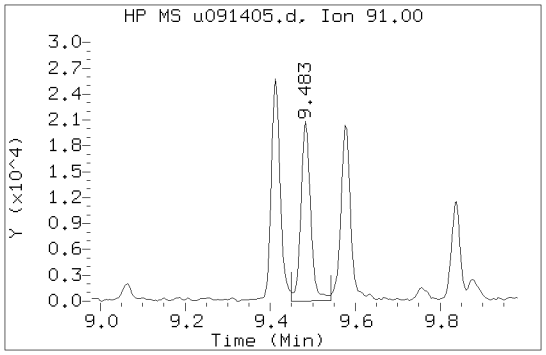
BEFORE

MASS
91
AREA
33180
HEIGHT
20846
18-Sep-2023
12:30
linh
pham



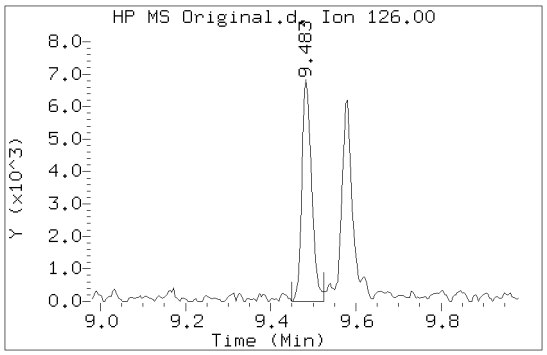

AFTER

MASS
91
AREA
33180
HEIGHT
20846
18-Sep-2023
12:30
linh
pham



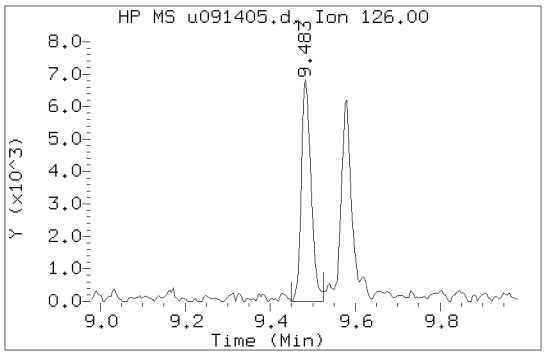

BEFORE

MASS
126
AREA
10850
HEIGHT
6830
18-Sep-2023
12:30
linh
pham




AFTER

MASS
126
AREA
10850
HEIGHT
6830
18-Sep-2023
12:30
linh
pham



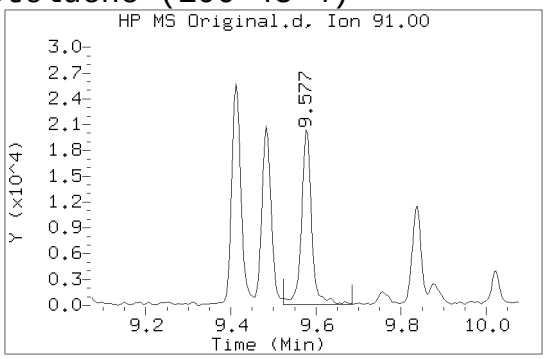
Data File : \\nahstws005\target\chem\voa9.i\u230914.b\u091405.d
Inj Date : 14-SEP-2023 17:15
InstruID : VOA9.i
LabSampID : VSTD002

## 4-Chlorotoluene (106-43-4)

Reason Code:

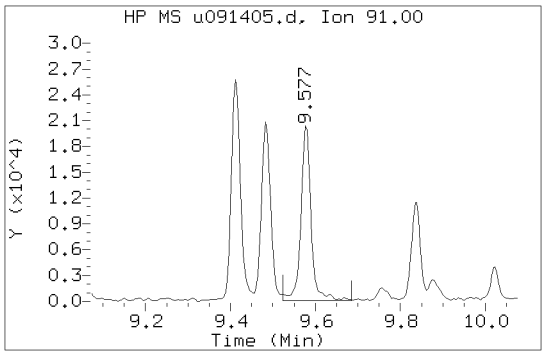
BEFORE

MASS
91
AREA
33779
HEIGHT
20346
18-Sep-2023
12:30
linh
pham



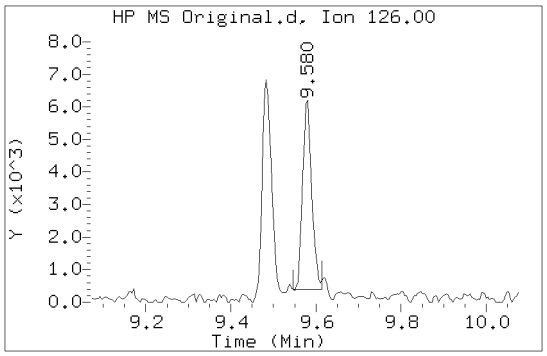

AFTER

MASS
91
AREA
33779
HEIGHT
20346
18-Sep-2023
12:30
linh
pham



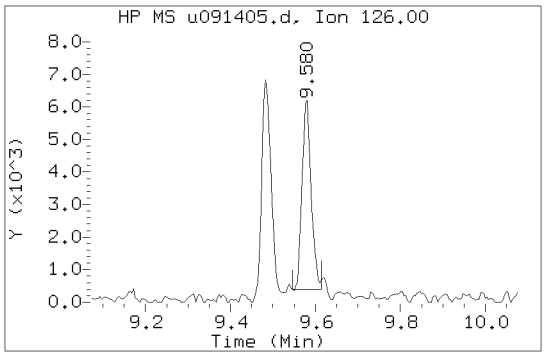

BEFORE

MASS
126
AREA
8669
HEIGHT
5811
18-Sep-2023
12:30
linh
pham




AFTER

MASS
126
AREA
8669
HEIGHT
5811
18-Sep-2023
12:30
linh
pham

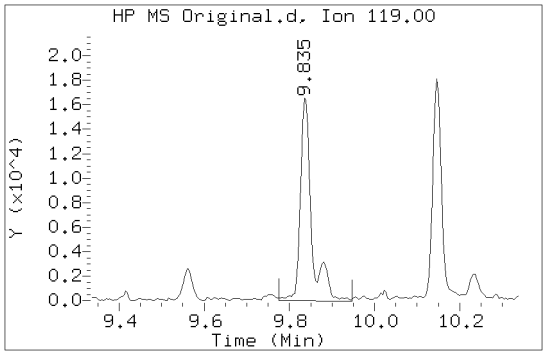



## tert-Butylbenzene (98-06-6)

Reason Code:

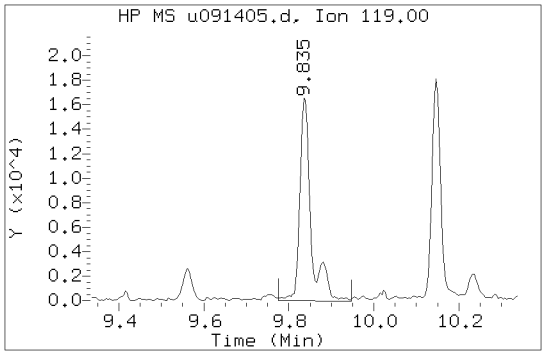
BEFORE

MASS
119
AREA
30827
HEIGHT
16520
18-Sep-2023
12:30
linh
pham



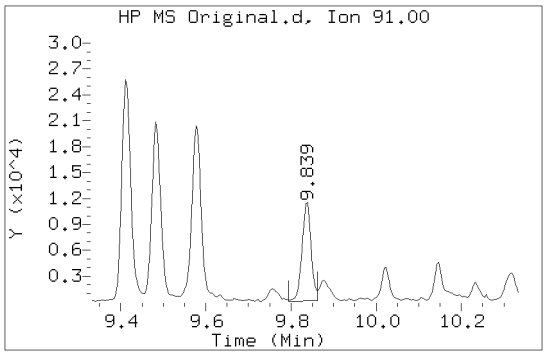

AFTER

MASS
119
AREA
30827
HEIGHT
16520
18-Sep-2023
12:30
linh
pham



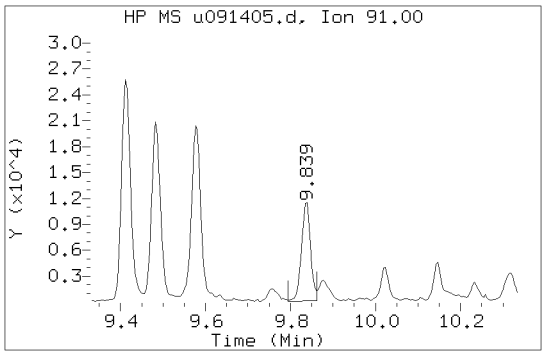

BEFORE

MASS
91
AREA
16917
HEIGHT
11357
18-Sep-2023
12:30
linh
pham




AFTER

MASS
91
AREA
16917
HEIGHT
11357
18-Sep-2023
12:30
linh
pham



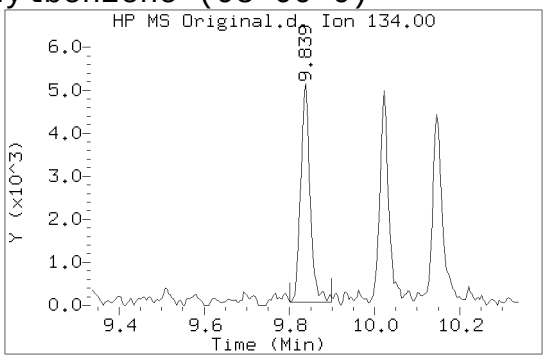
Data File : \\nahstws005\target\chem\voa9.i\u230914.b\u091405.d
Inj Date : 14-SEP-2023 17:15
InstruID : VOA9.i
LabSampID : VSTD002

## tert-Butylbenzene (98-06-6)

Reason Code:

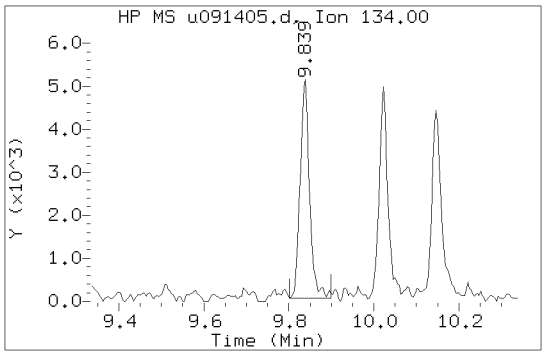
BEFORE

MASS
134
AREA
7780
HEIGHT
5075
18-Sep-2023
12:30
linh
pham




AFTER

MASS
134
AREA
7780
HEIGHT
5075
18-Sep-2023
12:30
linh
pham

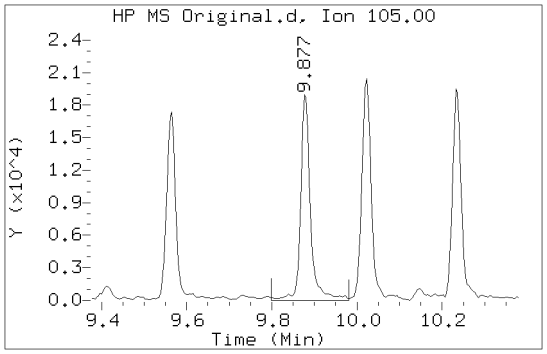



## 1,2,4-Trimethylbenzene (95-63-6)

Reason Code:

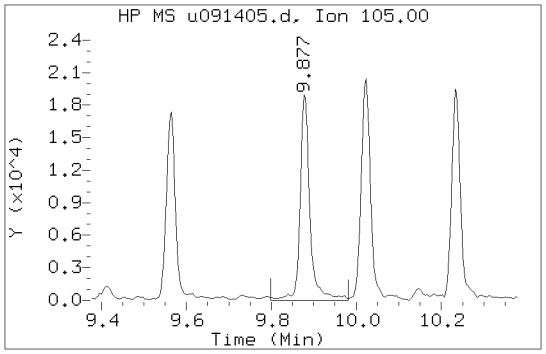
BEFORE

MASS
105
AREA
30377
HEIGHT
18980
18-Sep-2023
12:30
linh
pham



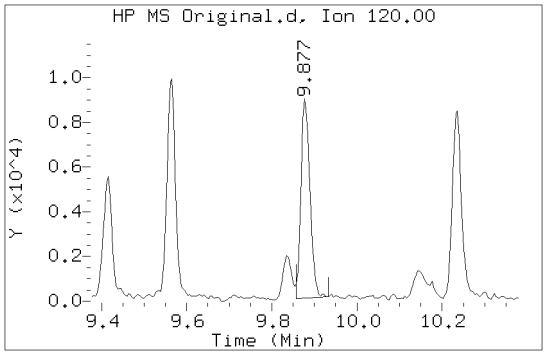

AFTER

MASS
105
AREA
30377
HEIGHT
18980
18-Sep-2023
12:30
linh
pham



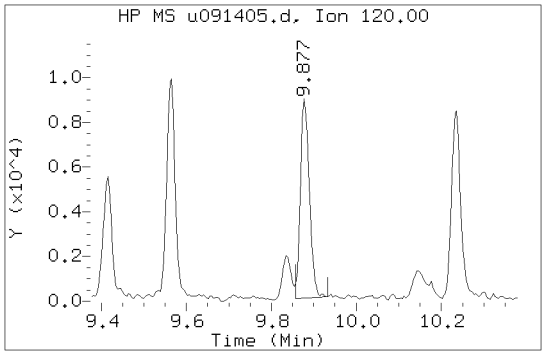

BEFORE

MASS
120
AREA
13034
HEIGHT
8920
18-Sep-2023
12:30
linh
pham




AFTER

MASS
120
AREA
13034
HEIGHT
8920
18-Sep-2023
12:30
linh
pham

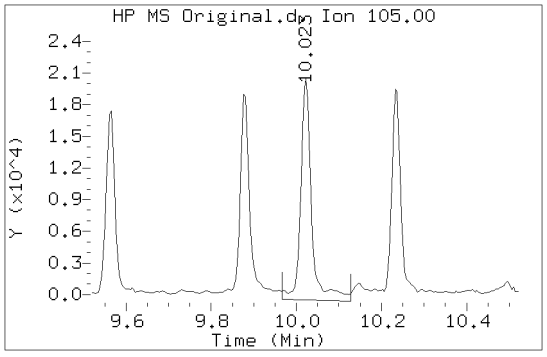



## sec-Butylbenzene (135-98-8)

Reason Code:

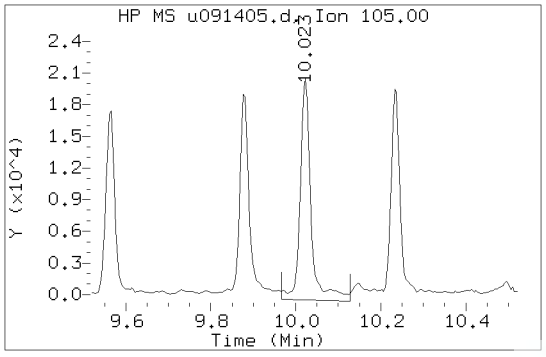
BEFORE

MASS
105
AREA
37386
HEIGHT
20926
18-Sep-2023
12:30
linh
pham




AFTER

MASS
105
AREA
37386
HEIGHT
20926
18-Sep-2023
12:30
linh
pham



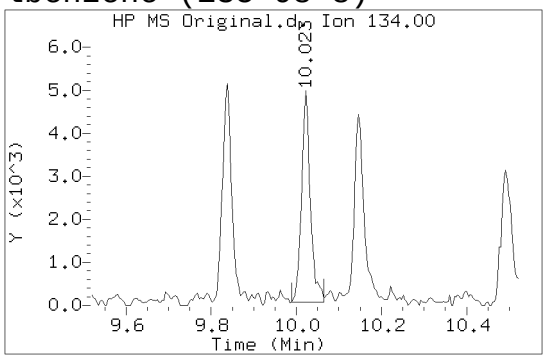
Data File : \\nahstws005\target\chem\voa9.i\u230914.b\u091405.d
Inj Date : 14-SEP-2023 17:15
InstruID : VOA9.i
LabSampID : VSTD002

## sec-Butylbenzene (135-98-8)

Reason Code:

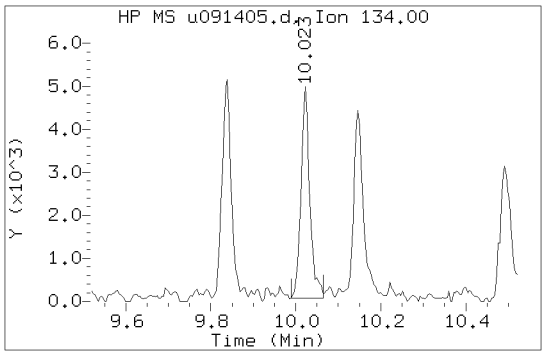
BEFORE

MASS
134
AREA
7013
HEIGHT
4913
18-Sep-2023
12:30
linh
pham




AFTER

MASS
134
AREA
7013
HEIGHT
4913
18-Sep-2023
12:30
linh
pham

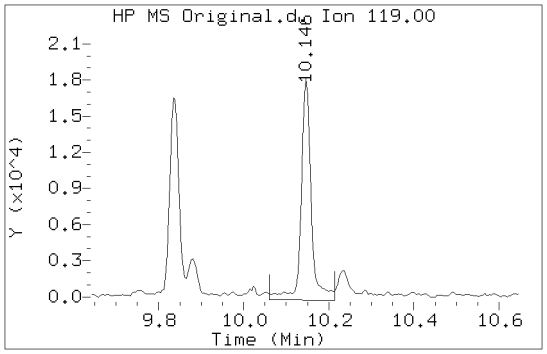



## p-Isopropyltoluene (99-87-6)

Reason Code:

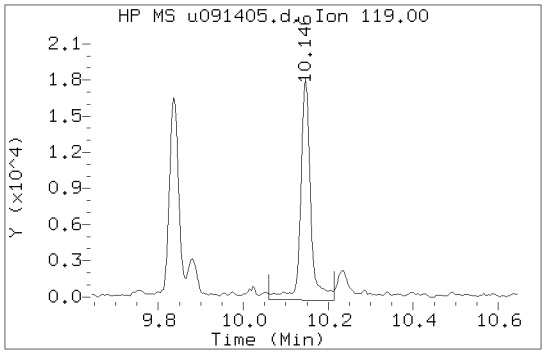
BEFORE

MASS
119
AREA
30473
HEIGHT
18370
18-Sep-2023
12:30
linh
pham



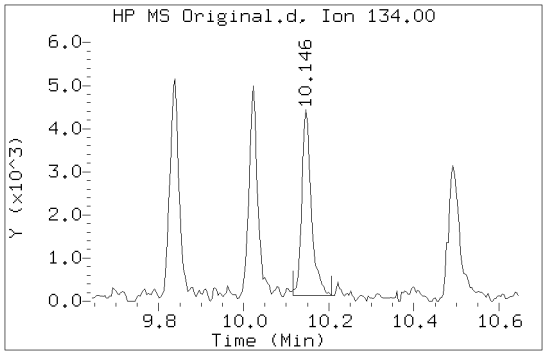

AFTER

MASS
119
AREA
30473
HEIGHT
18370
18-Sep-2023
12:30
linh
pham



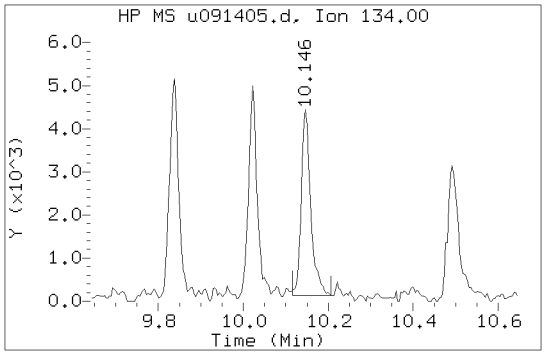

BEFORE

MASS
134
AREA
6684
HEIGHT
4315
18-Sep-2023
12:30
linh
pham



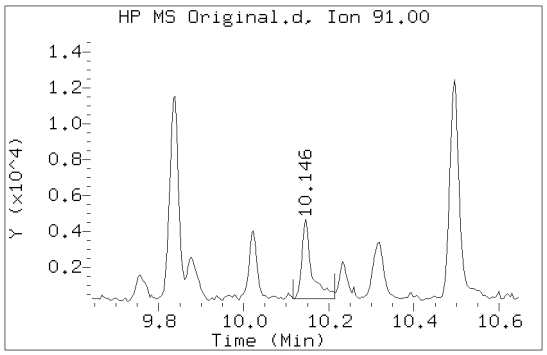

AFTER

MASS
134
AREA
6684
HEIGHT
4315
18-Sep-2023
12:30
linh
pham



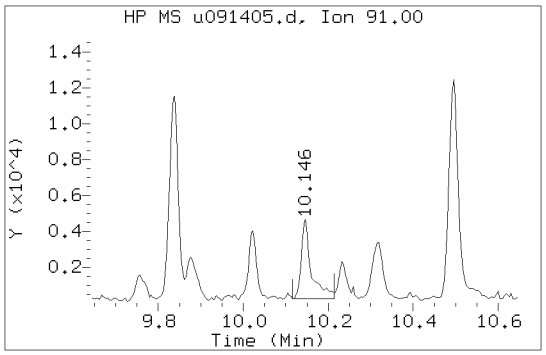

BEFORE

MASS
91
AREA
7318
HEIGHT
4419
18-Sep-2023
12:30
linh
pham




AFTER

MASS
91
AREA
7318
HEIGHT
4419
18-Sep-2023
12:30
linh
pham



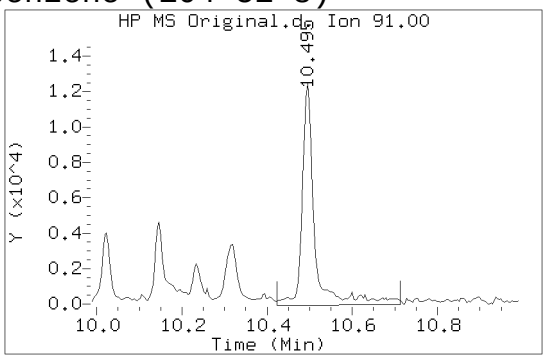
Data File : \\nahstws005\target\chem\voa9.i\u230914.b\u091405.d
Inj Date : 14-SEP-2023 17:15
InstruID : VOA9.i
LabSampID : VSTD002

## n-Butylbenzene (104-51-8)

Reason Code:

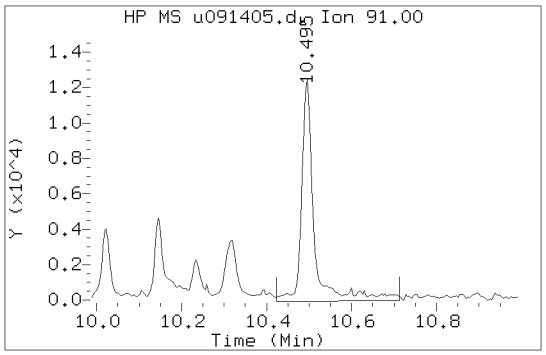
BEFORE

MASS
91
AREA
25685
HEIGHT
12495
18-Sep-2023
12:30
linh
pham



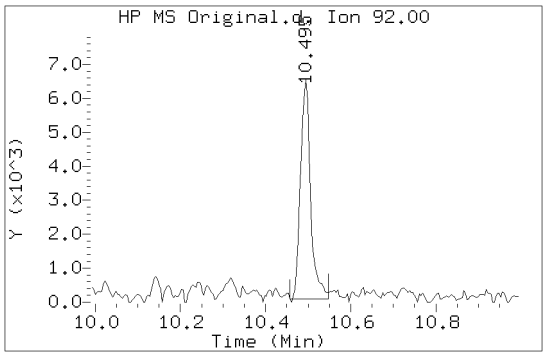

AFTER

MASS
91
AREA
25685
HEIGHT
12495
18-Sep-2023
12:30
linh
pham



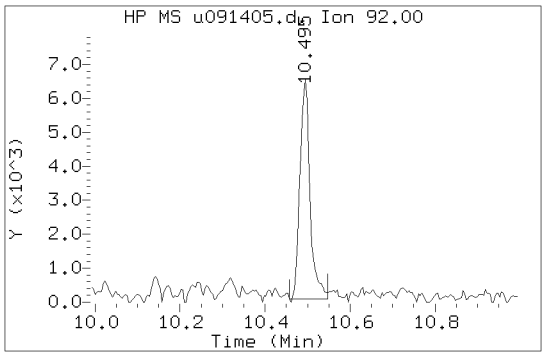

BEFORE

MASS
92
AREA
10649
HEIGHT
6452
18-Sep-2023
12:30
linh
pham



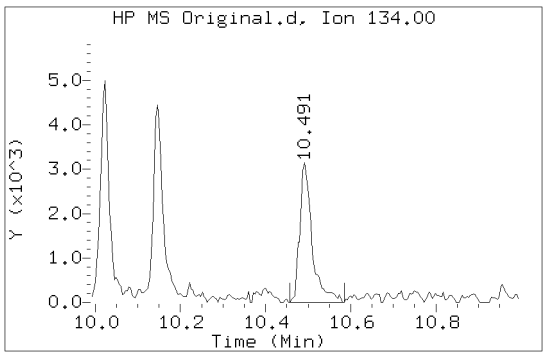

AFTER

MASS
92
AREA
10649
HEIGHT
6452
18-Sep-2023
12:30
linh
pham



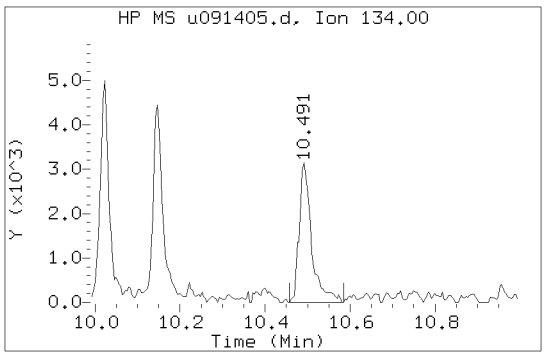

BEFORE

MASS
134
AREA
6384
HEIGHT
3141
18-Sep-2023
12:30
linh
pham




AFTER

MASS
134
AREA
6384
HEIGHT
3141
18-Sep-2023
12:30
linh
pham

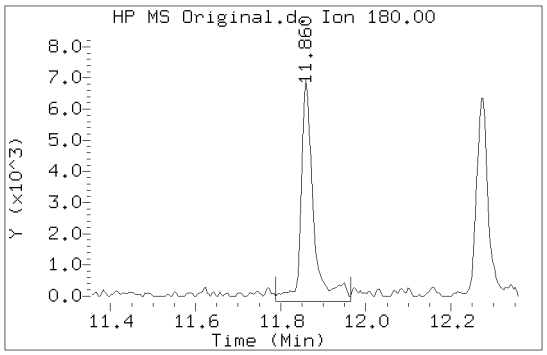



## 1,2,4-Trichlorobenzene (120-82-1)

Reason Code:

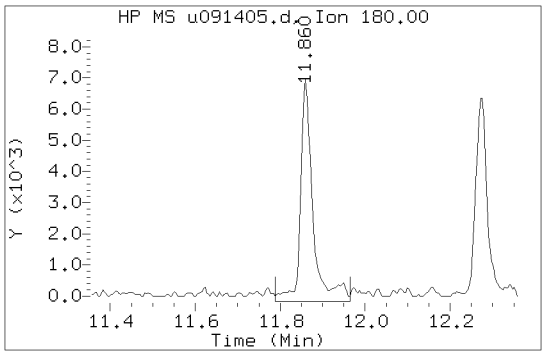
BEFORE

MASS
180
AREA
14590
HEIGHT
7111
18-Sep-2023
12:30
linh
pham




AFTER

MASS
180
AREA
14590
HEIGHT
7111
18-Sep-2023
12:30
linh
pham



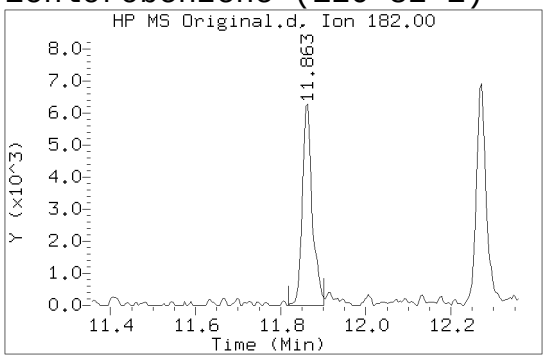
Data File : \\nahstws005\target\chem\voa9.i\u230914.b\u091405.d
Inj Date : 14-SEP-2023 17:15
InstruID : VOA9.i
LabSampID : VSTD002

## 1,2,4-Trichlorobenzene (120-82-1)

Reason Code:

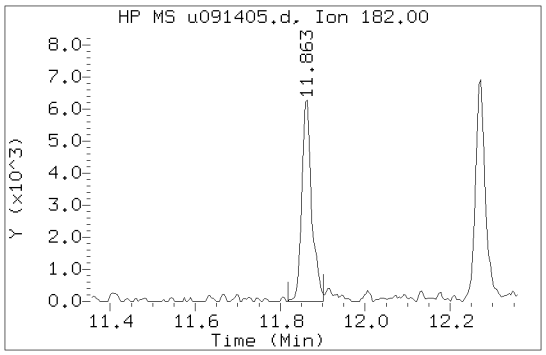
BEFORE

MASS
182
AREA
10193
HEIGHT
6281
18-Sep-2023
12:30
linh
pham



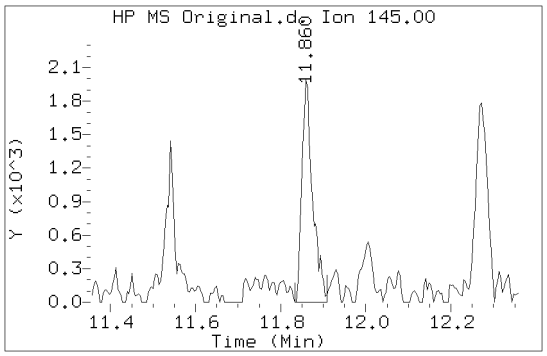

AFTER

MASS
182
AREA
10193
HEIGHT
6281
18-Sep-2023
12:30
linh
pham



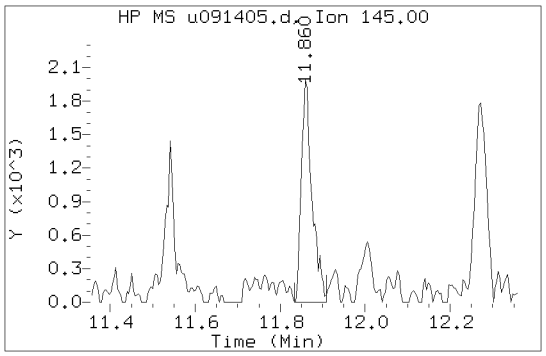

BEFORE

MASS
145
AREA
3481
HEIGHT
1990
18-Sep-2023
12:30
linh
pham




AFTER

MASS
145
AREA
3481
HEIGHT
1990
18-Sep-2023
12:30
linh
pham

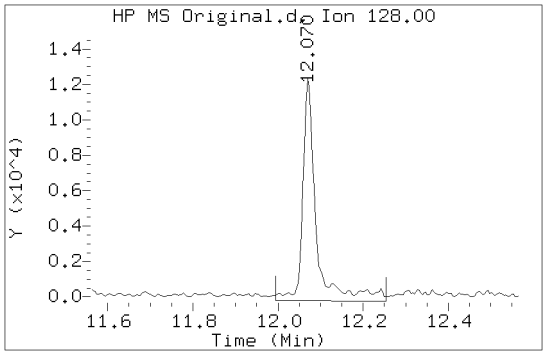



## Naphthalene (91-20-3)

Reason Code:

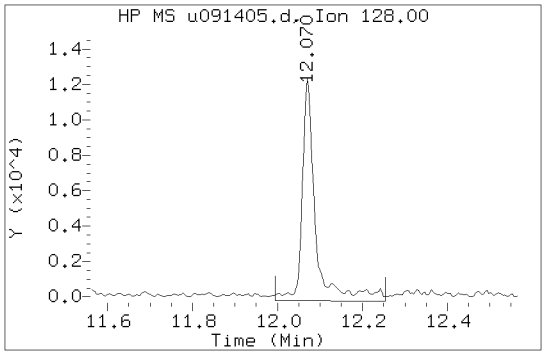
BEFORE

MASS
128
AREA
27784
HEIGHT
12537
18-Sep-2023
12:30
linh
pham




AFTER

MASS
128
AREA
27784
HEIGHT
12537
18-Sep-2023
12:30
linh
pham

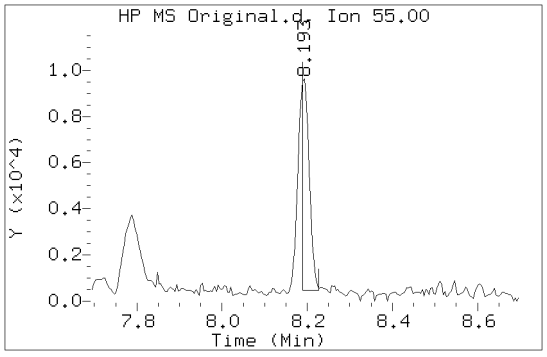



## 1-Chlorohexane (544-10-5)

Reason Code:

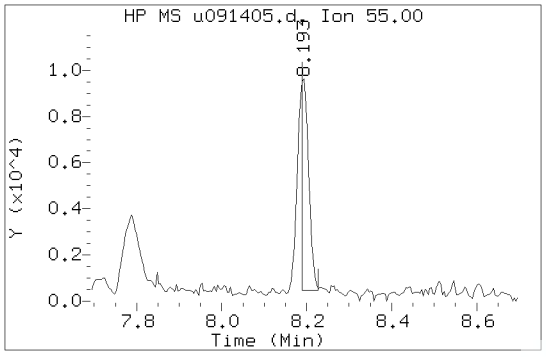
BEFORE

MASS
55
AREA
10420
HEIGHT
9163
18-Sep-2023
12:30
linh
pham




AFTER

MASS
55
AREA
10420
HEIGHT
9163
18-Sep-2023
12:30
linh
pham



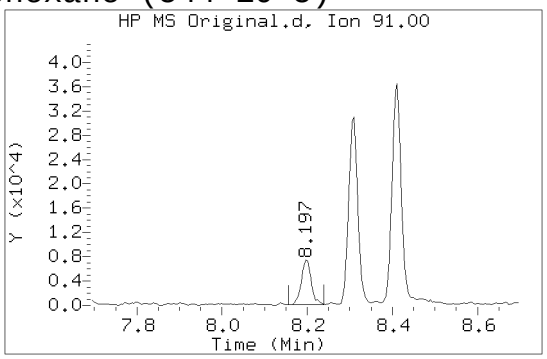
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Inj Date : 14-SEP-2023 17:15
InstruID : VOA9.i
LabSampID : VSTD002

## 1-Chlorohexane (544-10-5)

Reason Code:

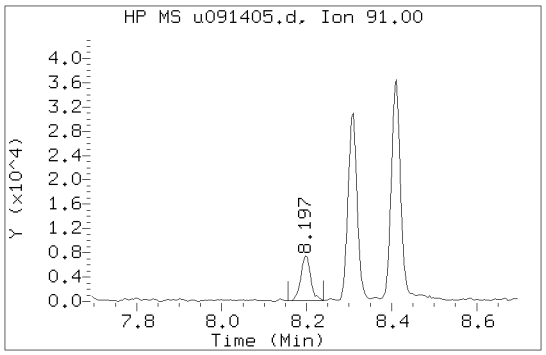
**BEFORE**

MASS
91
AREA
11923
HEIGHT
7414
18-Sep-2023
12:30
linh
pham




**AFTER**

MASS
91
AREA
11923
HEIGHT
7414
18-Sep-2023
12:30
linh
pham

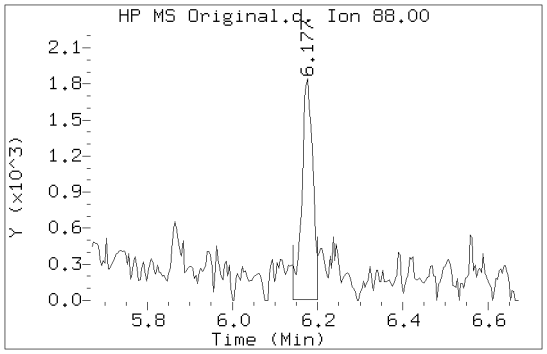



## 1,4-Dioxane ()

Reason Code:

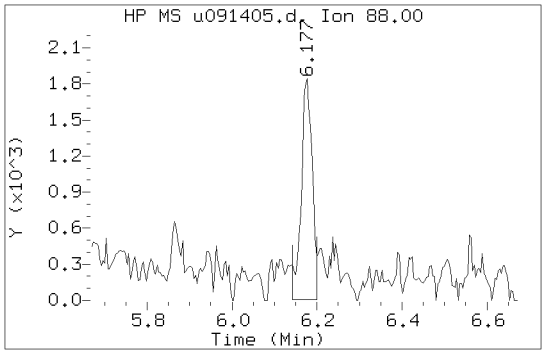
**BEFORE**

MASS
88
AREA
3297
HEIGHT
1839
18-Sep-2023
12:30
linh
pham



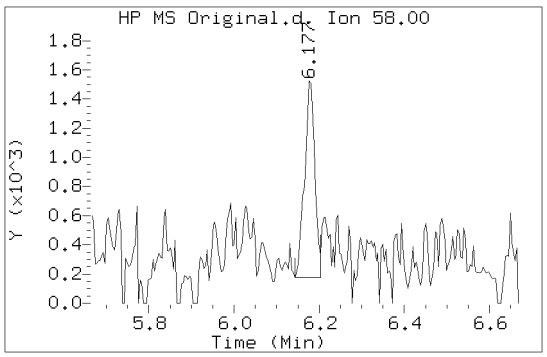

**AFTER**

MASS
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AREA
3297
HEIGHT
1839
18-Sep-2023
12:30
linh
pham



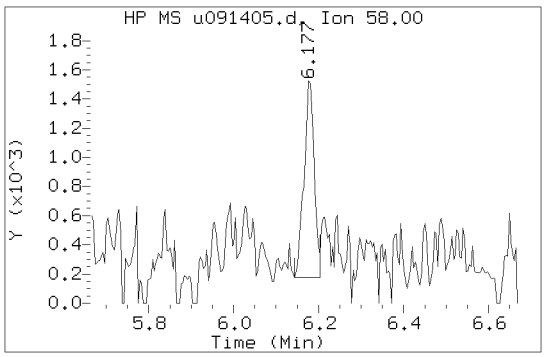

**BEFORE**

MASS
58
AREA
2246
HEIGHT
1346
18-Sep-2023
12:30
linh
pham




**AFTER**

MASS
58
AREA
2246
HEIGHT
1346
18-Sep-2023
12:30
linh
pham

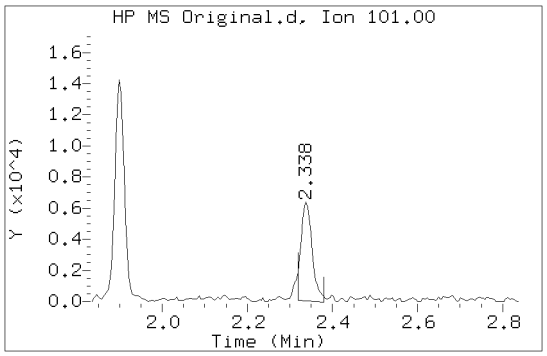



## Freon TF (76-13-1)

Reason Code:

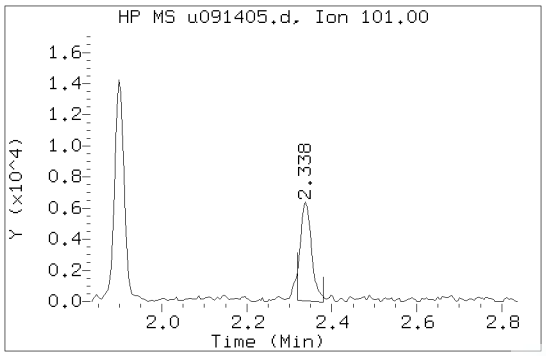
**BEFORE**

MASS
101
AREA
11603
HEIGHT
6340
18-Sep-2023
12:30
linh
pham




**AFTER**

MASS
101
AREA
11603
HEIGHT
6340
18-Sep-2023
12:30
linh
pham

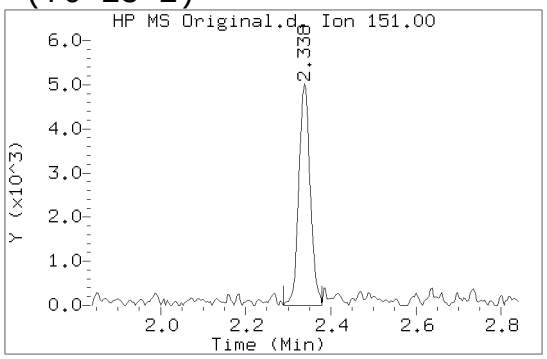


Data File : \\nahstws005\target\chem\voa9.i\u230914.b\u091405.d
Inj Date : 14-SEP-2023 17:15
InstruID : VOA9.i
LabSampID : VSTD002

## Freon TF (76-13-1)

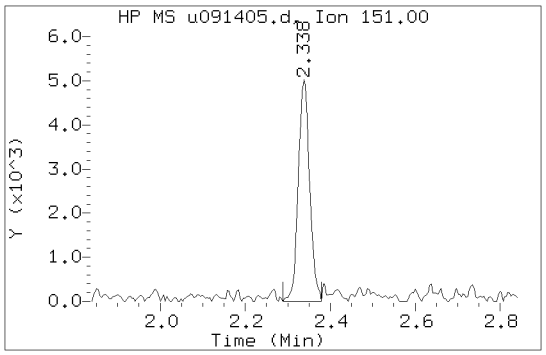
### BEFORE

MASS
151
AREA
9320
HEIGHT
5025
18-Sep-2023
12:30
linh
pham




### AFTER

MASS
151
AREA
9320
HEIGHT
5025
18-Sep-2023
12:30
linh
pham

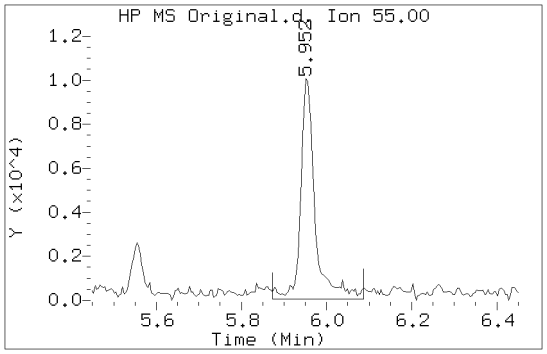



Reason Code:

## Methylcyclohexane (108-87-2)

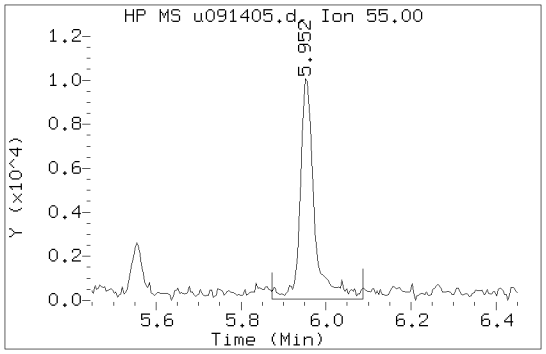
### BEFORE

MASS
55
AREA
23709
HEIGHT
10015
18-Sep-2023
12:30
linh
pham




### AFTER

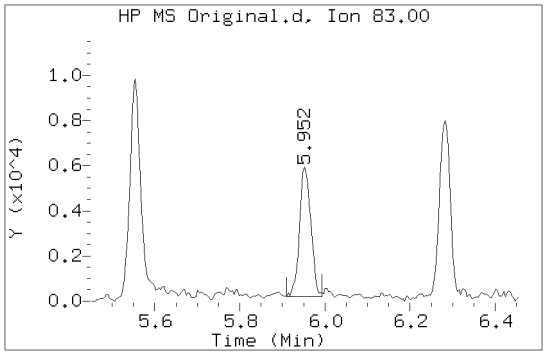
MASS
55
AREA
23709
HEIGHT
10015
18-Sep-2023
12:30
linh
pham




Reason Code:

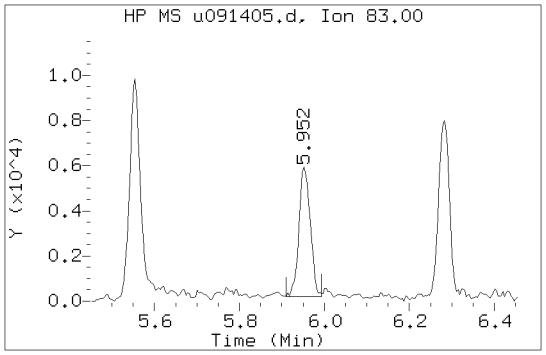
### BEFORE

MASS
83
AREA
10672
HEIGHT
5759
18-Sep-2023
12:30
linh
pham




### AFTER

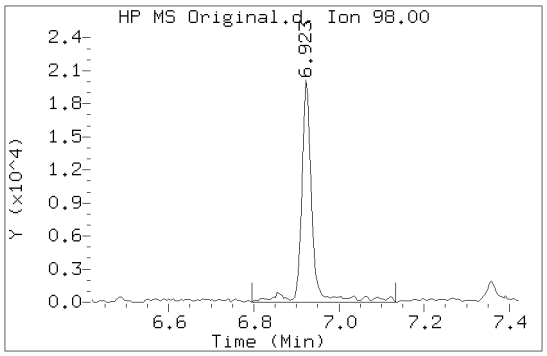
MASS
83
AREA
10672
HEIGHT
5759
18-Sep-2023
12:30
linh
pham




## Toluene-d8 (2037-26-5)

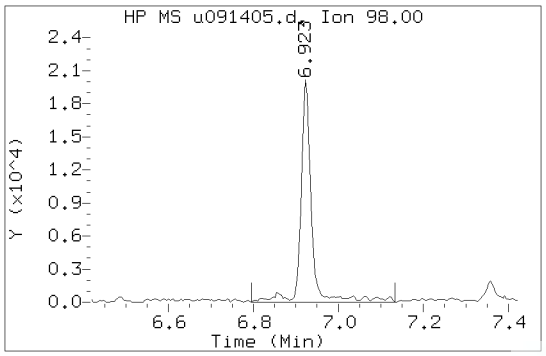
### BEFORE

MASS
98
AREA
35573
HEIGHT
20167
18-Sep-2023
12:30
linh
pham




### AFTER

MASS
98
AREA
35573
HEIGHT
20167
18-Sep-2023
12:30
linh
pham




Reason Code:

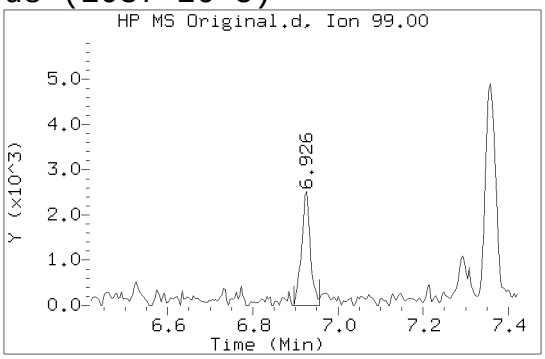
Data File : \\nahstws005\target\chem\voa9.i\u230914.b\u091405.d
Inj Date : 14-SEP-2023 17:15
InstruID : VOA9.i
LabSampID : VSTD002

Toluene-d8 (2037-26-5)

Reason Code:

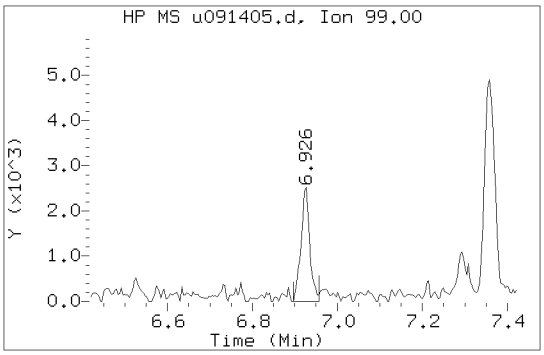
BEFORE

MASS
99
AREA
3611
HEIGHT
2529
18-Sep-2023
12:30
linh
pham



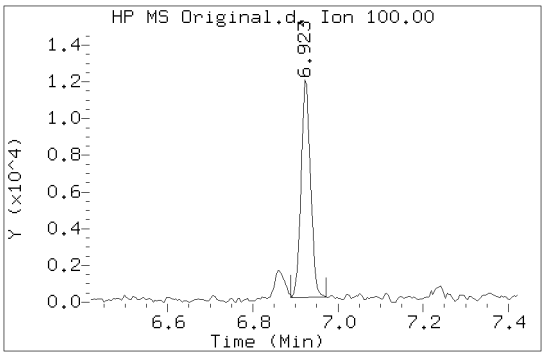

AFTER

MASS
99
AREA
3611
HEIGHT
2529
18-Sep-2023
12:30
linh
pham



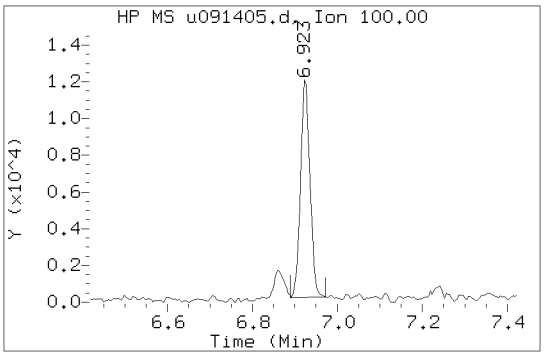

BEFORE

MASS
100
AREA
18195
HEIGHT
11842
18-Sep-2023
12:30
linh
pham




AFTER

MASS
100
AREA
18195
HEIGHT
11842
18-Sep-2023
12:30
linh
pham



Data File: \\NAHSTWS005\Target\chem\voa9.i\U230914.b\U091406.D  Page 1
Report Date: 18-Sep-2023 12:31

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa9.i\U230914.b\U091406.D
Lab Smp Id: VSTD005  Client Smp ID: VSTD005
Inj Date  : 14-SEP-2023 17:37
Operator  : PC  Inst ID: VOA9.i
Smp Info  : VSTD005;VSTD005;1;5;
Misc Info : V9;WATER;0;1;
Comment   :
Method    : \\NAHSTWS005\Target\chem\voa9.i\U230914.b\8260C.m
Meth Date : 18-Sep-2023 12:31 VOA9.i  Quant Type: ISTD
Cal Date  : 14-SEP-2023 17:15  Cal File: U091405.D
Als bottle: 7  Calibration Sample, Level: 5
Dil Factor: 1.00000
Integrator: HP RTE  Compound Sublist: 08260V9.sub
Target Version:  4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

| Name | Value | Description |
|---|---|---|
| DF | 1.000 | Dilution Factor |
| Uf | 5.000 | ng unit correction factor |
| Vo | 5.000 | sample purged |
| Cpnd Variable | | Local Compound Variable |

| | Compounds | QUANT SIG MASS | RT | EXP RT | REL RT | RESPONSE | AMOUNTS CAL-AMT ( ug/l) | ON-COL ( ug/l) |
|---|---|---|---|---|---|---|---|---|
| * 1 | Pentafluorobenzene | 168 | 4.815 | 4.815 | (1.000) | 615876 | 50.0000 | |
| 2 | Dichlorodifluoromethane | 85 | 1.164 | 1.164 | (0.242) | 33181 | 5.00000 | 6.11 |
| 3 | Chloromethane | 50 | 1.295 | 1.295 | (0.269) | 65950 | 5.00000 | 4.93 |
| 5 | Vinyl Chloride | 62 | 1.374 | 1.374 | (0.285) | 37633 | 5.00000 | 4.81 |
| 6 | Bromomethane | 94 | 1.621 | 1.621 | (0.337) | 22775 | 5.00000 | 6.36 |
| 7 | Chloroethane | 64 | 1.700 | 1.700 | (0.353) | 28720 | 5.00000 | 4.99 |
| 8 | Trichlorofluoromethane | 101 | 1.895 | 1.895 | (0.394) | 48351 | 5.00000 | 4.82 |
| 9 | Acrolein | 56 | 2.266 | 2.266 | (0.471) | 5614 | 10.0000 | 10.62(M) |
| 10 | Acetone | 43 | 2.408 | 2.408 | (0.500) | 44971 | 10.0000 | 12.54 |
| 11 | 1,1-Dichloroethene | 96 | 2.330 | 2.330 | (0.484) | 29078 | 5.00000 | 4.77 |
| 15 | Iodomethane | 142 | 2.468 | 2.468 | (0.513) | 28118 | 10.0000 | 11.41 |
| 16 | Acrylonitrile | 53 | 3.064 | 3.064 | (0.636) | 38251 | 10.0000 | 10.64 |
| 17 | Methylene Chloride | 84 | 2.791 | 2.791 | (0.580) | 46477 | 5.00000 | 7.49 |
| 18 | Methyl tert-butyl ether | 73 | 3.079 | 3.079 | (0.640) | 80677 | 5.00000 | 4.66 |
| 19 | Carbon Disulfide | 76 | 2.521 | 2.521 | (0.524) | 151653 | 10.0000 | 9.20 |
| 20 | trans-1,2-Dichloroethene | 96 | 3.057 | 3.057 | (0.635) | 32760 | 5.00000 | 5.12 |
| 21 | Vinyl Acetate | 43 | 3.608 | 3.608 | (0.749) | 208109 | 10.0000 | 9.19 |
| 22 | 1,1-Dichloroethane | 63 | 3.514 | 3.514 | (0.730) | 64016 | 5.00000 | 4.99 |
| 24 | 2-Butanone | 43 | 4.272 | 4.272 | (0.887) | 37906 | 10.0000 | 10.15 |
| 26 | 2,2-Dichloropropane | 77 | 4.178 | 4.178 | (0.868) | 37553 | 5.00000 | 4.83 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 27 cis-1,2-Dichloroethene | 96 | 4.197 | 4.197 (0.872) | 37179 | 5.00000 | 5.08 |
| 28 Chloroform | 83 | 4.571 | 4.571 (0.949) | 65168 | 5.00000 | 5.23 |

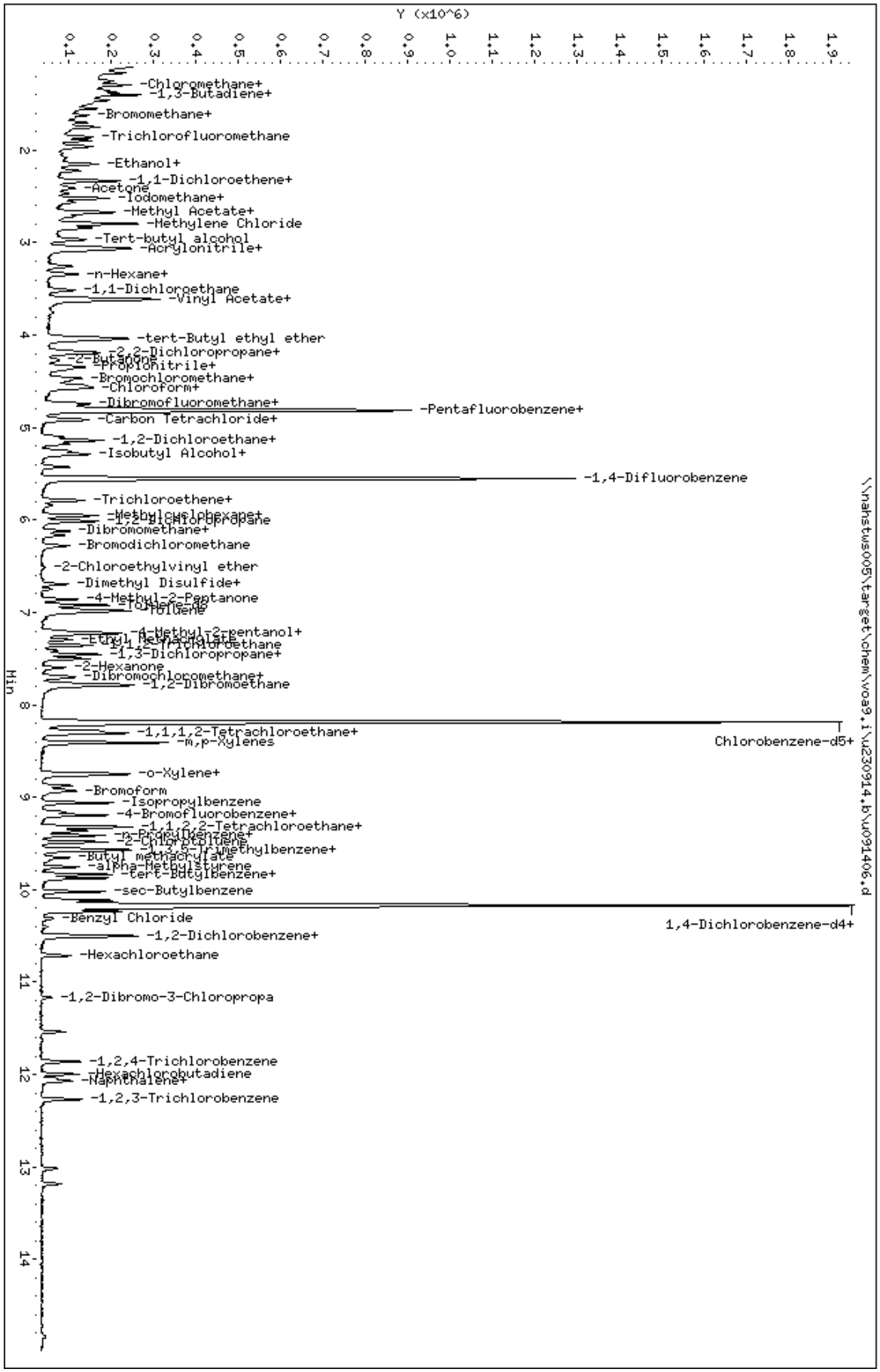
| | Compounds | QUANT SIG MASS | RT | EXP RT | REL RT | RESPONSE | AMOUNTS CAL-AMT ( ug/l) | ON-COL ( ug/l) |
|---|---|---|---|---|---|---|---|---|
| | 29 Bromochloromethane | 128 | 4.466 | 4.466 | (0.928) | 20058 | 5.00000 | 5.23(M) |
| $ | 30 Dibromofluoromethane | 113 | 4.748 | 4.748 | (0.986) | 30159 | 5.00000 | 5.55 |
| | 31 1,1,1-Trichloroethane | 97 | 4.736 | 4.736 | (0.984) | 39706 | 5.00000 | 4.69 |
| | 32 1,1-Dichloropropene | 75 | 4.920 | 4.920 | (0.886) | 36825 | 5.00000 | 4.78(M) |
| | 33 1,2-Dichloroethane | 62 | 5.179 | 5.179 | (0.933) | 48868 | 5.00000 | 5.21 |
| | 34 Carbon Tetrachloride | 117 | 4.909 | 4.909 | (0.884) | 29696 | 5.00000 | 4.31 |
| $ | 35 1,2-Dichloroethane-d4 | 65 | 5.100 | 5.100 | (1.059) | 35545 | 5.00000 | 5.46 |
| * | 36 1,4-Difluorobenzene | 114 | 5.554 | 5.554 | (1.000) | 969968 | 50.0000 | |
| | 37 Benzene | 78 | 5.137 | 5.137 | (0.925) | 120633 | 5.00000 | 4.95 |
| | 38 Trichloroethene | 130 | 5.790 | 5.790 | (1.043) | 33784 | 5.00000 | 4.76 |
| | 39 Bromodichloromethane | 83 | 6.277 | 6.277 | (1.130) | 39828 | 5.00000 | 5.04 |
| | 41 2-Chloroethylvinyl ether | 63 | 6.562 | 6.562 | (1.182) | 336 | 10.0000 | 10.06(M) |
| | 42 1,2-Dichloropropane | 63 | 6.011 | 6.011 | (1.082) | 32353 | 5.00000 | 5.02(M) |
| | 44 Dibromomethane | 93 | 6.120 | 6.120 | (1.102) | 22821 | 5.00000 | 5.15 |
| | 45 4-Methyl-2-Pentanone | 43 | 6.858 | 6.858 | (0.838) | 55368 | 10.0000 | 10.20 |
| | 46 cis-1,3-Dichloropropene | 75 | 6.693 | 6.693 | (1.205) | 34543 | 5.00000 | 6.45(M) |
| * | 47 Chlorobenzene-d5 | 117 | 8.185 | 8.185 | (1.000) | 948776 | 50.0000 | |
| $ | 48 Toluene-d8 | 98 | 6.922 | 6.922 | (0.846) | 99501 | 5.00000 | 4.75(M) |
| | 50 Toluene | 91 | 6.982 | 6.982 | (0.853) | 121160 | 5.00000 | 4.75 |
| | 51 trans-1,3-Dichloropropene | 75 | 7.199 | 7.199 | (1.296) | 26471 | 5.00000 | 5.54(M) |
| | 52 2-Hexanone | 43 | 7.597 | 7.597 | (0.928) | 36854 | 10.0000 | 8.56 |
| | 53 1,1,2-Trichloroethane | 83 | 7.357 | 7.357 | (0.899) | 27894 | 5.00000 | 5.02 |
| | 54 1,3-Dichloropropane | 76 | 7.499 | 7.499 | (0.916) | 58827 | 5.00000 | 5.26 |
| | 55 Dibromochloromethane | 129 | 7.694 | 7.694 | (0.940) | 28979 | 5.00000 | 4.38 |
| | 56 Tetrachloroethene | 164 | 7.458 | 7.458 | (0.911) | 28435 | 5.00000 | 4.79 |
| | 57 1,2-Dibromoethane | 107 | 7.784 | 7.784 | (0.951) | 34451 | 5.00000 | 5.16 |
| | 58 1-Chlorohexane | 55 | 8.193 | 8.193 | (1.475) | 26895 | 5.00000 | 4.58(M) |
| | 59 Chlorobenzene | 112 | 8.208 | 8.208 | (1.003) | 99816 | 5.00000 | 5.29 |
| | 60 1,1,1,2-Tetrachloroethane | 131 | 8.283 | 8.283 | (1.012) | 29792 | 5.00000 | 4.70 |
| | 61 Ethylbenzene | 106 | 8.309 | 8.309 | (1.015) | 39301 | 5.00000 | 4.65(M) |
| | 62 m,p-Xylenes | 106 | 8.410 | 8.410 | (1.027) | 91941 | 10.0000 | 8.66(M) |
| | 63 o-Xylene | 106 | 8.747 | 8.747 | (1.069) | 51484 | 5.00000 | 4.66(M) |
| | 64 Styrene | 104 | 8.762 | 8.762 | (1.071) | 81277 | 5.00000 | 4.80(M) |
| | 66 Bromoform | 173 | 8.920 | 8.920 | (1.090) | 18129 | 5.00000 | 6.93 |
| | 67 Isopropylbenzene | 105 | 9.062 | 9.062 | (1.107) | 106778 | 5.00000 | 5.53(M) |
| | 68 1,1,2,2-Tetrachloroethane | 83 | 9.329 | 9.329 | (0.917) | 48111 | 5.00000 | 4.97 |
| $ | 69 4-Bromofluorobenzene | 95 | 9.194 | 9.194 | (1.123) | 43329 | 5.00000 | 4.81 |
| * | 70 1,4-Dichlorobenzene-d4 | 152 | 10.172 | 10.172 | (1.000) | 497786 | 50.0000 | |
| | 71 1,2,3-Trichloropropane | 75 | 9.362 | 9.362 | (0.920) | 42193 | 5.00000 | 5.11 |
| | 73 n-Propylbenzene | 91 | 9.411 | 9.411 | (0.925) | 104281 | 5.00000 | 6.19(M) |
| | 74 Bromobenzene | 156 | 9.317 | 9.317 | (0.916) | 37894 | 5.00000 | 4.78 |
| | 75 1,3,5-Trimethylbenzene | 105 | 9.561 | 9.561 | (0.940) | 83567 | 5.00000 | 4.46(M) |
| | 76 2-Chlorotoluene | 91 | 9.482 | 9.482 | (0.932) | 84153 | 5.00000 | 4.55 |
| | 77 4-Chlorotoluene | 91 | 9.576 | 9.576 | (0.941) | 97057 | 5.00000 | 4.47(M) |
| | 78 tert-Butylbenzene | 119 | 9.838 | 9.838 | (0.967) | 82646 | 5.00000 | 4.58(M) |
| | 79 1,2,4-Trimethylbenzene | 105 | 9.880 | 9.880 | (0.971) | 89902 | 5.00000 | 4.67(M) |
| | 81 sec-Butylbenzene | 105 | 10.022 | 10.022 | (0.985) | 102146 | 5.00000 | 5.88(M) |
| | 82 p-Isopropyltoluene | 119 | 10.146 | 10.146 | (0.997) | 91770 | 5.00000 | 6.42(M) |
| | 83 1,3-Dichlorobenzene | 146 | 10.116 | 10.116 | (0.994) | 67187 | 5.00000 | 4.81 |
| | 84 1,4-Dichlorobenzene | 146 | 10.191 | 10.191 | (1.002) | 79406 | 5.00000 | 5.06 |
| | 87 n-Butylbenzene | 91 | 10.491 | 10.491 | (1.031) | 70297 | 5.00000 | 5.91(M) |
| | 88 1,2-Dichlorobenzene | 146 | 10.506 | 10.506 | (1.033) | 68123 | 5.00000 | 4.77 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 89 | 1,2-Dibromo-3-Chloropropane | 155 | 11.169 | 11.169 (1.098) | 4962 | 5.00000 | 4.12(M) |
| 90 | 1,2,4-Trichlorobenzene | 180 | 11.859 | 11.859 (1.166) | 38785 | 5.00000 | 4.77(M) |

| | | QUANT SIG | | | | | AMOUNTS | |
|---|---|---|---|---|---|---|---|---|
| | Compounds | MASS | RT | EXP RT | REL RT | RESPONSE | CAL-AMT ( ug/l) | ON-COL ( ug/l) |
| | 91 Hexachlorobutadiene | 225 | 11.998 | 11.998 | (1.179) | 18387 | 5.00000 | 5.04(M) |
| | 92 Naphthalene | 128 | 12.073 | 12.073 | (1.187) | 71056 | 5.00000 | 5.75(M) |
| | 93 1,2,3-Trichlorobenzene | 180 | 12.271 | 12.271 | (1.206) | 32422 | 5.00000 | 4.20 |
| M | 94 1,2-Dichloroethylene (total) | 96 | | | | 69939 | 10.0000 | |
| M | 95 Xylenes (total) | 106 | | | | 143425 | 15.0000 | |
| | 135 1,4-Dioxane | 88 | 6.176 | 6.176 | (1.283) | 9267 | 100.000 | 103.51(M) |
| | 141 Cyclohexane | 56 | 4.781 | 4.781 | (0.993) | 42320 | 5.00000 | 5.69(M) |
| | 138 Freon TF | 101 | 2.330 | 2.330 | (0.484) | 25879 | 5.00000 | 5.48 |
| | 140 1,3-Butadiene | 54 | 1.400 | 1.400 | (0.291) | 35494 | 5.00000 | 4.87(M) |
| | 147 Methylcyclohexane | 55 | 5.951 | 5.951 | (1.072) | 69365 | 5.00000 | 4.87(M) |
| | 146 Methyl Acetate | 43 | 2.716 | 2.716 | (0.564) | 37702 | 5.00000 | 5.04 |
| | 148 Tert-Butyl alcohol | 59 | 2.967 | 2.967 | (0.616) | 76557 | 100.000 | 101.45 |
| | 149 Isopropyl Alcohol | 45 | 2.562 | 2.562 | (0.532) | 51206 | 100.000 | 94.58 |

QC Flag Legend

M - Compound response manually integrated.


Y (x10^6)
Min
-Chloromethane+
-1,3-Butadiene+
-Bromomethane+
-Trichlorofluoromethane
-Ethanol+
-1,1-Dichloroethene+
-Acetone
-Iodomethane+
-Methyl Acetate+
-Methylene Chloride
-Tert-butyl alcohol
-Acrylonitrile+
-n-Hexane+
-1,1-Dichloroethane
-Vinyl Acetate+
-tert-Butyl ethyl ether
-2,2-Dichloropropane+
-2-Butanone
-Propionitrile+
-Bromochloromethane+
-Chloroform+
-Dibromofluoromethane+
-Pentafluorobenzene+
-Carbon Tetrachloride+
-1,2-Dichloroethane+
-Isobutyl Alcohol+
-1,4-Difluorobenzene
-Trichloroethene+
-Methylcyclohexane+
-1,2-Dichloropropane
-Dibromomethane+
-Bromodichloromethane
-2-Chloroethylvinyl ether
-Dimethyl Disulfide+
-4-Methyl-2-Pentanone
-Toluene-d8
-Toluene
-4-Methyl-2-pentanol+
-Ethyl Methacrylate
-1,1,2-Trichloroethane
-1,3-Dichloropropane+
-2-Hexanone
-Dibromochloromethane+
-1,2-Dibromoethane
-1,1,1,2-Tetrachloroethane+
-m,p-Xylenes
Chlorobenzene-d5+
-o-Xylene+
-Bromoform
-Isopropylbenzene
-4-Bromofluorobenzene+
-1,1,2,2-Tetrachloroethane+
-n-Propylbenzene+
-2-Chlorotoluene
-1,3,5-Trimethylbenzene+
-Butyl methacrylate
-alpha-Methylstyrene
-tert-Butylbenzene+
-sec-Butylbenzene
-Benzyl Chloride
1,4-Dichlorobenzene-d4+
-1,2-Dichlorobenzene+
-Hexachloroethane
-1,2-Dibromo-3-Chloropropa
-1,2,4-Trichlorobenzene
-Hexachlorobutadiene
-Naphthalene+
-1,2,3-Trichlorobenzene
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Data File: \\nahstws005\target\chem\voa9,i\u230914,b\u091406,d
Date : 14-SEP-2023 17:37
Client ID: VSTD005
Sample Info: VSTD005;VSTD005;1;5;
Purge Volume: 5.0
Column phase: DB624
Instrument: VOA9,i
Operator: PC
Column diameter: 0.18
Page 1

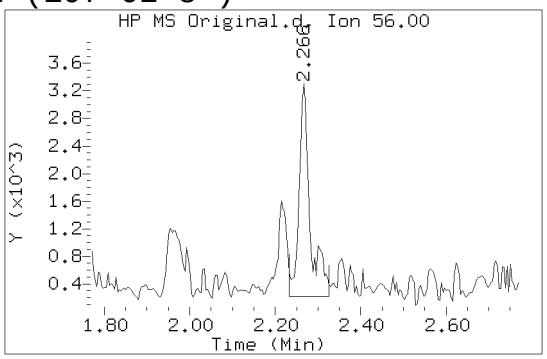
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Inj Date : 14-SEP-2023 17:37
InstruID : VOA9.i
LabSampID : VSTD005

## Acrolein (107-02-8 )

Reason Code:

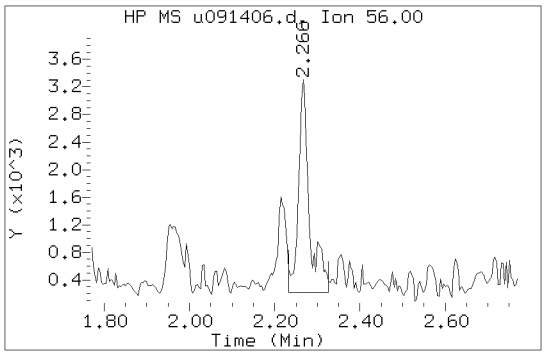
BEFORE

MASS
56
AREA
5614
HEIGHT
3082
18-Sep-2023
12:30
linh
pham



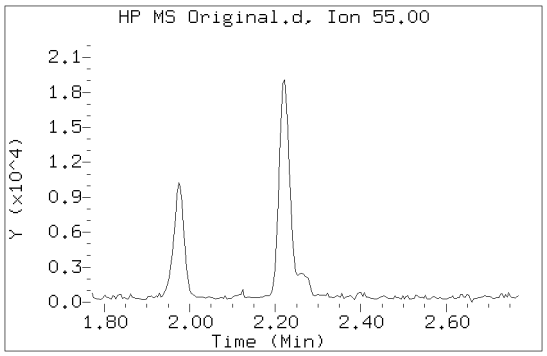

AFTER

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HEIGHT
3082
18-Sep-2023
12:30
linh
pham



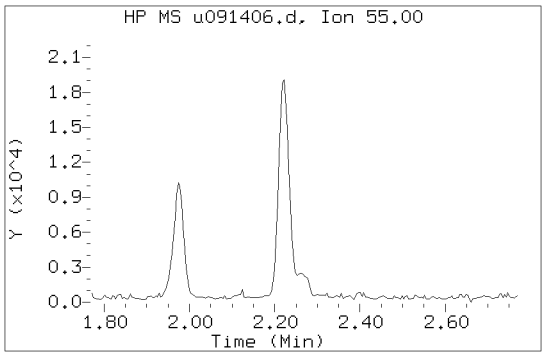

BEFORE

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AREA
2832
HEIGHT
1793
18-Sep-2023
12:30
linh
pham




AFTER

MASS
55
AREA
2832
HEIGHT
1793
18-Sep-2023
12:30
linh
pham

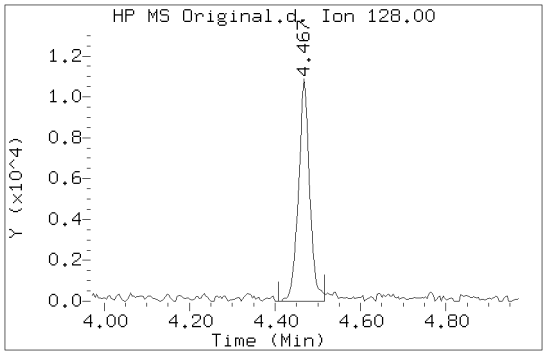



## Bromochloromethane (74-97-5)

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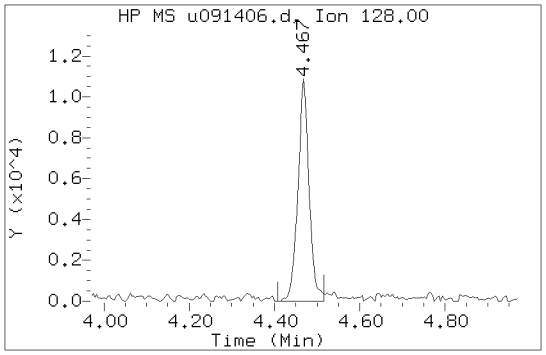
BEFORE

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AREA
20058
HEIGHT
10880
18-Sep-2023
12:30
linh
pham



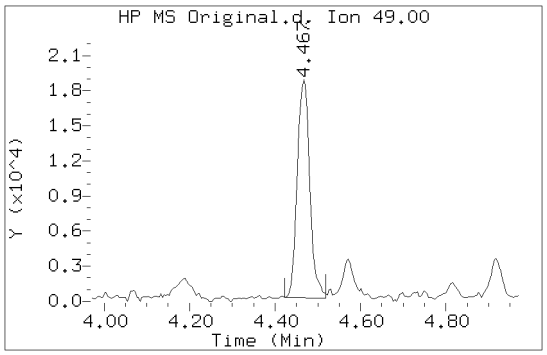

AFTER

MASS
128
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20058
HEIGHT
10880
18-Sep-2023
12:30
linh
pham



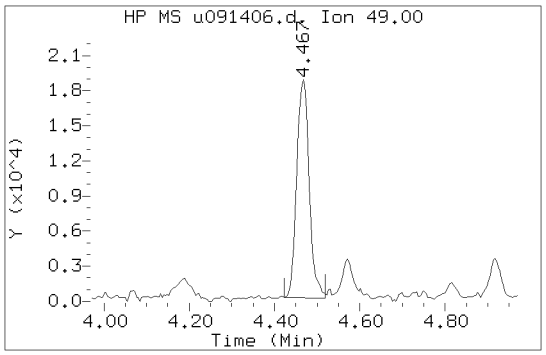

BEFORE

MASS
49
AREA
38427
HEIGHT
18619
18-Sep-2023
12:30
linh
pham




AFTER

MASS
49
AREA
38427
HEIGHT
18619
18-Sep-2023
12:30
linh
pham



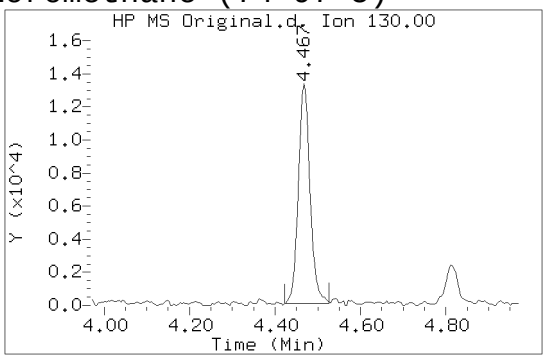
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Inj Date : 14-SEP-2023 17:37
InstruID : VOA9.i
LabSampID : VSTD005

## Bromochloromethane (74-97-5)

Reason Code:

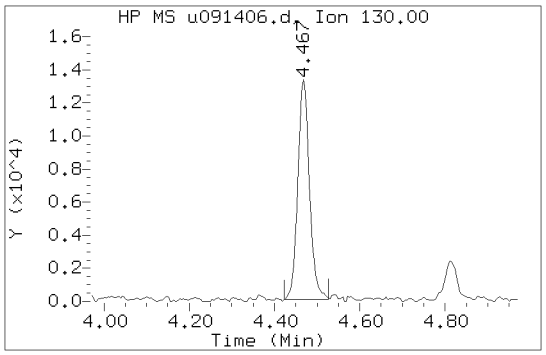
BEFORE

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AREA
25690
HEIGHT
13299
18-Sep-2023
12:30
linh
pham




AFTER

MASS
130
AREA
25690
HEIGHT
13299
18-Sep-2023
12:30
linh
pham

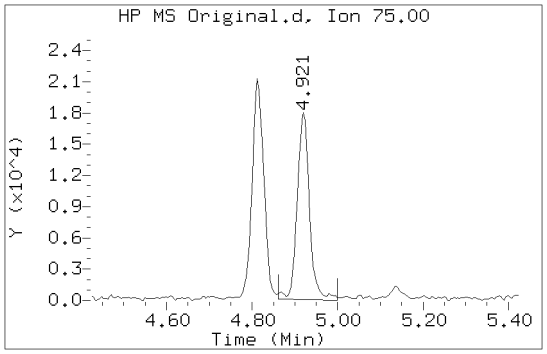



## 1,1-Dichloropropene (563-58-6)

Reason Code:

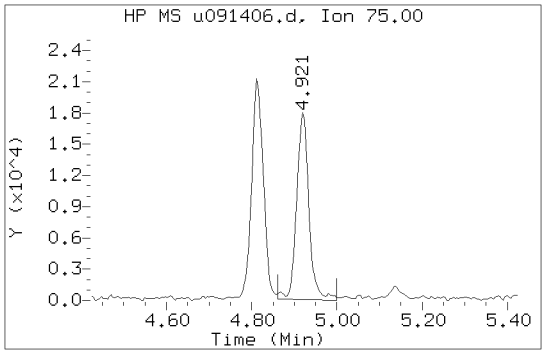
BEFORE

MASS
75
AREA
36825
HEIGHT
17968
18-Sep-2023
12:30
linh
pham



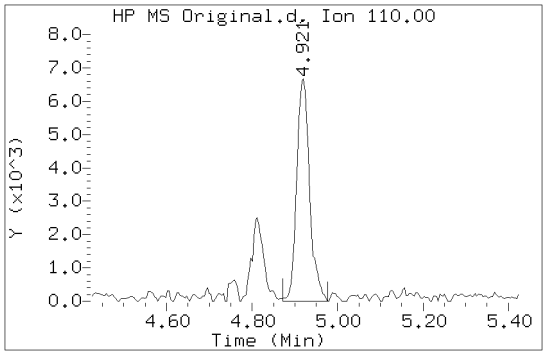

AFTER

MASS
75
AREA
36825
HEIGHT
17968
18-Sep-2023
12:30
linh
pham



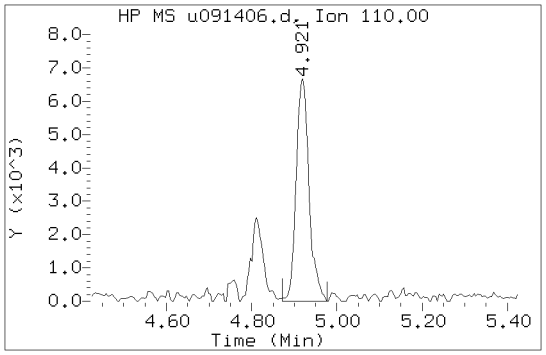

BEFORE

MASS
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AREA
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HEIGHT
6669
18-Sep-2023
12:30
linh
pham



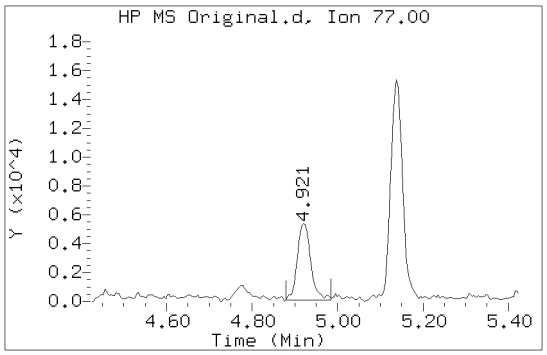

AFTER

MASS
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AREA
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HEIGHT
6669
18-Sep-2023
12:30
linh
pham



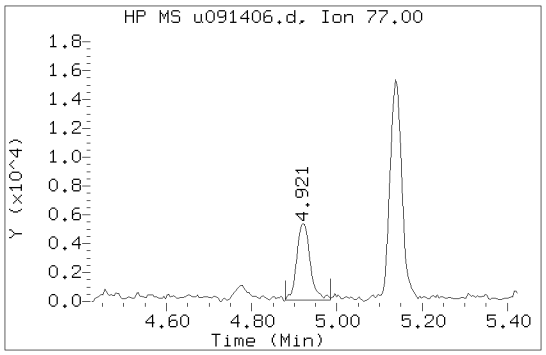

BEFORE

MASS
77
AREA
11813
HEIGHT
5283
18-Sep-2023
12:30
linh
pham




AFTER

MASS
77
AREA
11813
HEIGHT
5283
18-Sep-2023
12:30
linh
pham



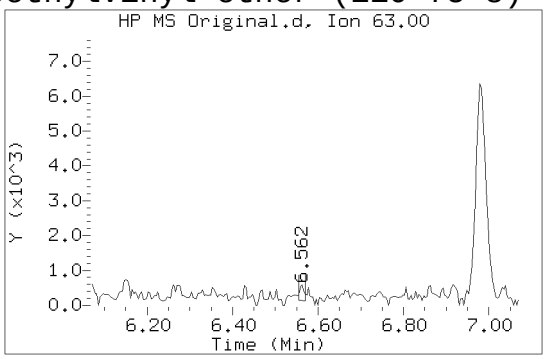
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Inj Date : 14-SEP-2023 17:37
InstruID : VOA9.i
LabSampID : VSTD005

## 2-Chloroethylvinyl ether (110-75-8)

Reason Code:

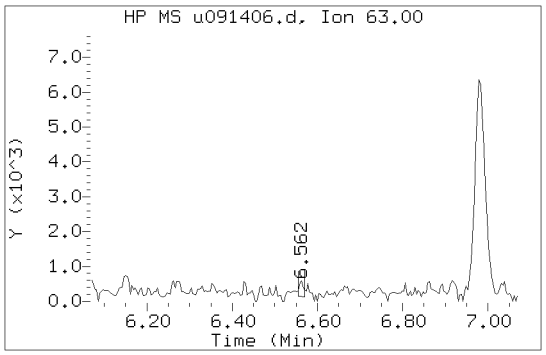
BEFORE

MASS
63
AREA
336
HEIGHT
457
18-Sep-2023
12:30
linh
pham



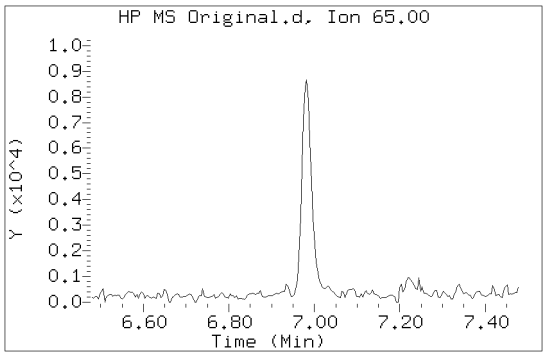

AFTER

MASS
63
AREA
336
HEIGHT
457
18-Sep-2023
12:30
linh
pham



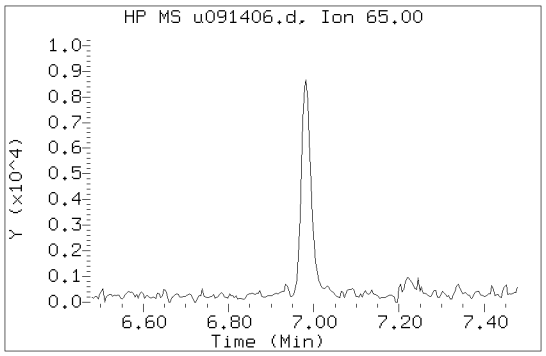

BEFORE

MASS
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AREA
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HEIGHT
0
18-Sep-2023
12:30
linh
pham



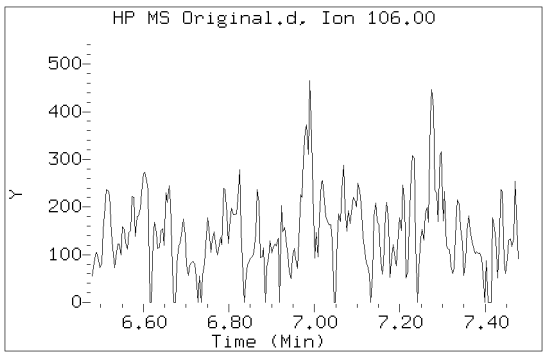

AFTER

MASS
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AREA
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HEIGHT
0
18-Sep-2023
12:30
linh
pham



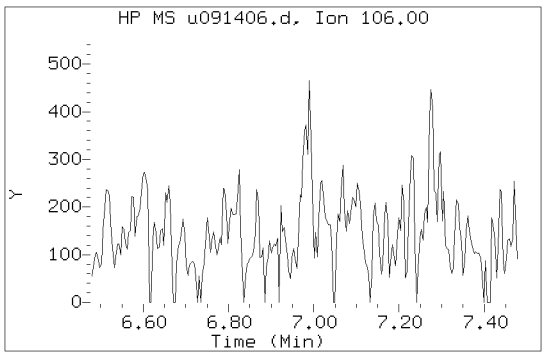

BEFORE

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106
AREA
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HEIGHT
0
18-Sep-2023
12:30
linh
pham




AFTER

MASS
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AREA
0
HEIGHT
0
18-Sep-2023
12:30
linh
pham

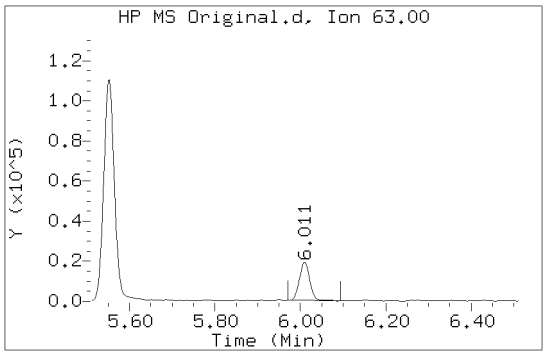



## 1,2-Dichloropropane (78-87-5)

Reason Code:

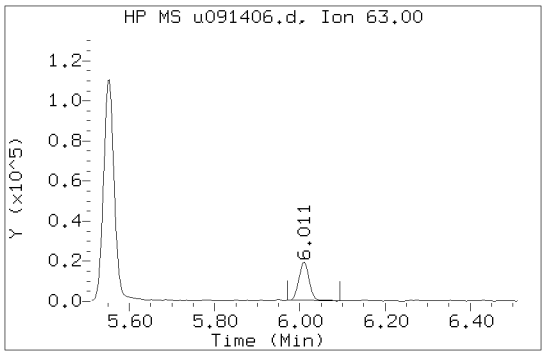
BEFORE

MASS
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AREA
32353
HEIGHT
18996
18-Sep-2023
12:30
linh
pham




AFTER

MASS
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AREA
32353
HEIGHT
18996
18-Sep-2023
12:30
linh
pham



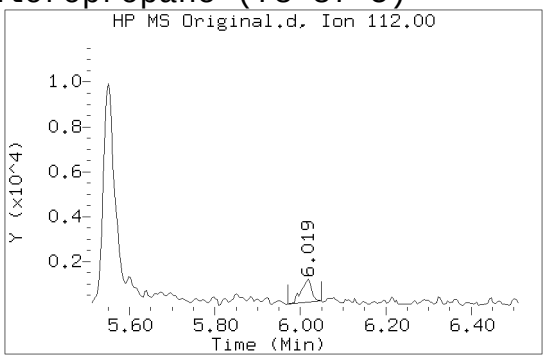
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Inj Date : 14-SEP-2023 17:37
InstruID : VOA9.i
LabSampID : VSTD005

## 1,2-Dichloropropane (78-87-5)

Reason Code:

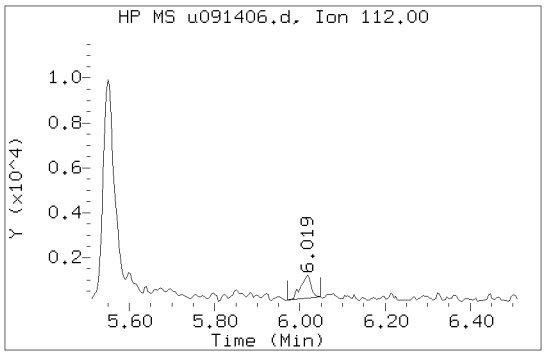
BEFORE

MASS
112
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1711
HEIGHT
1017
18-Sep-2023
12:30
linh
pham




AFTER

MASS
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AREA
1711
HEIGHT
1017
18-Sep-2023
12:30
linh
pham

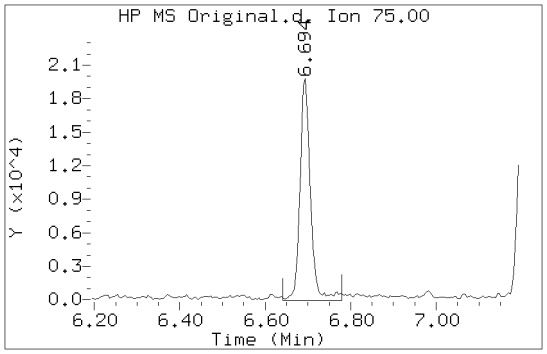



## cis-1,3-Dichloropropene (10061-01-5)

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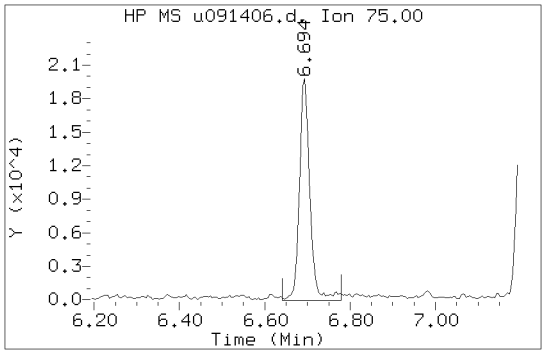
BEFORE

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HEIGHT
19820
18-Sep-2023
12:30
linh
pham



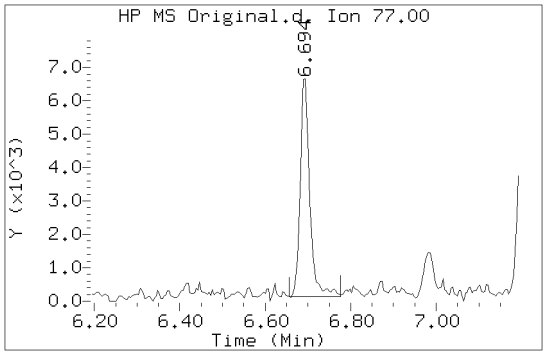

AFTER

MASS
75
AREA
34543
HEIGHT
19820
18-Sep-2023
12:30
linh
pham



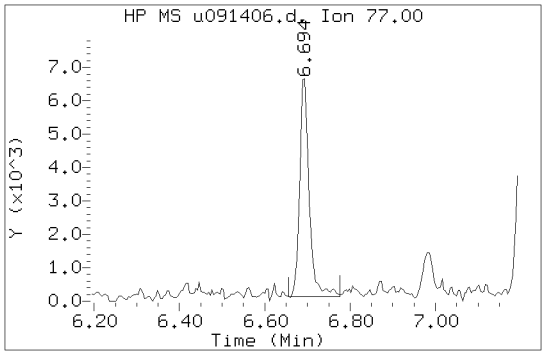

BEFORE

MASS
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AREA
10412
HEIGHT
6520
18-Sep-2023
12:30
linh
pham



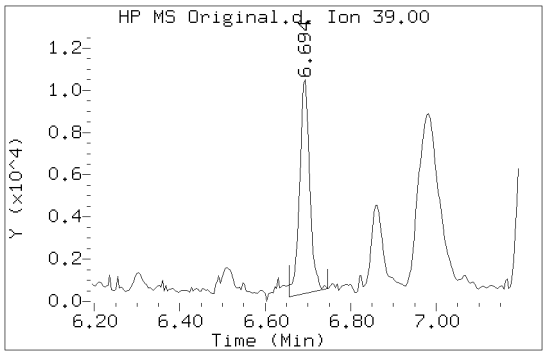

AFTER

MASS
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AREA
10412
HEIGHT
6520
18-Sep-2023
12:30
linh
pham



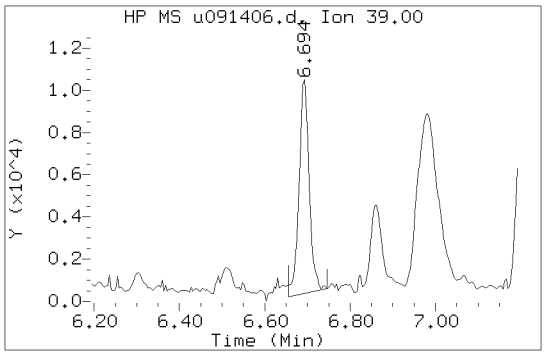

BEFORE

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HEIGHT
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18-Sep-2023
12:30
linh
pham




AFTER

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AREA
17092
HEIGHT
10125
18-Sep-2023
12:30
linh
pham



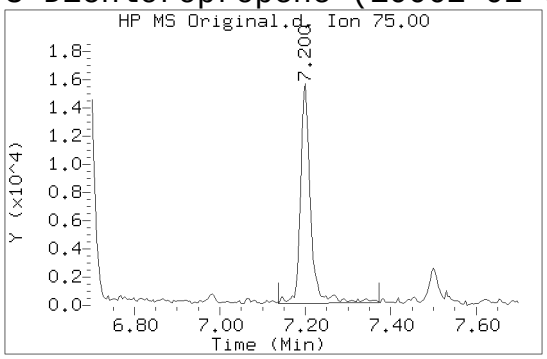
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Inj Date : 14-SEP-2023 17:37
InstruID : VOA9.i
LabSampID : VSTD005

## trans-1,3-Dichloropropene (10061-02-6)

Reason Code:

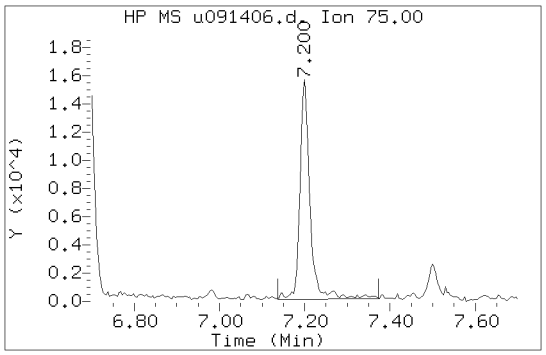
BEFORE

MASS
75
AREA
26471
HEIGHT
15556
18-Sep-2023
12:30
linh
pham



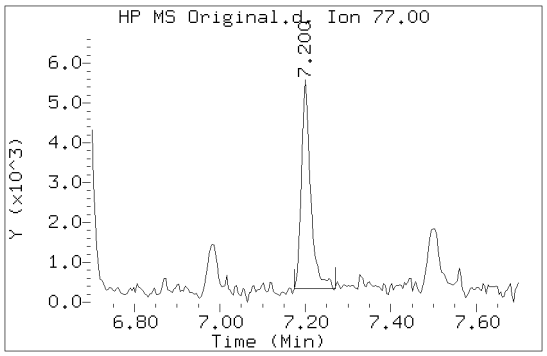

AFTER

MASS
75
AREA
26471
HEIGHT
15556
18-Sep-2023
12:30
linh
pham



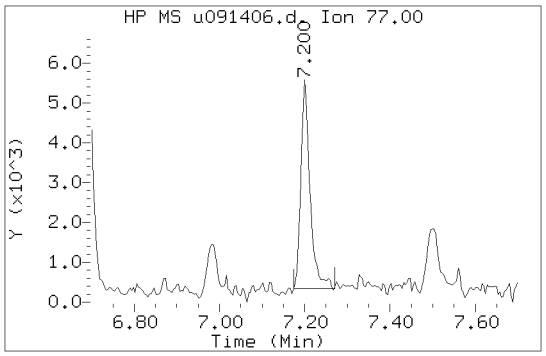

BEFORE

MASS
77
AREA
8101
HEIGHT
5246
18-Sep-2023
12:30
linh
pham



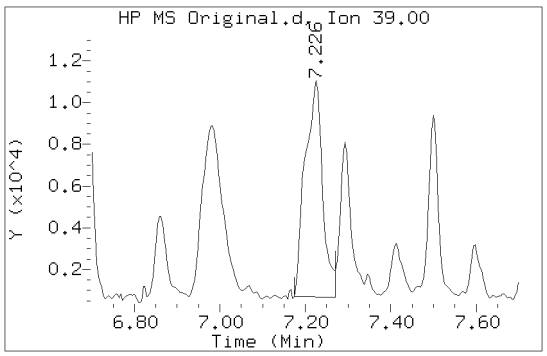

AFTER

MASS
77
AREA
8101
HEIGHT
5246
18-Sep-2023
12:30
linh
pham



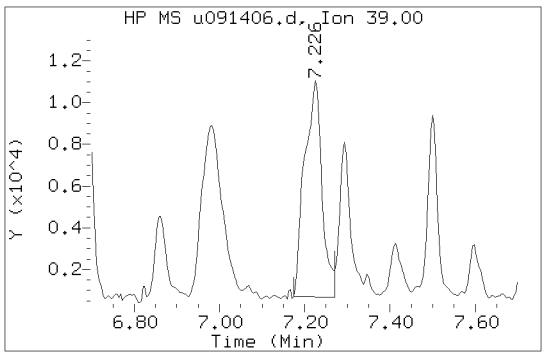

BEFORE

MASS
39
AREA
29827
HEIGHT
10370
18-Sep-2023
12:30
linh
pham




AFTER

MASS
39
AREA
29827
HEIGHT
10370
18-Sep-2023
12:30
linh
pham

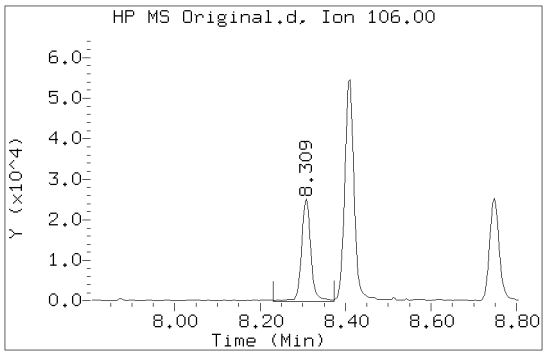



## Ethylbenzene (100-41-4)

Reason Code:

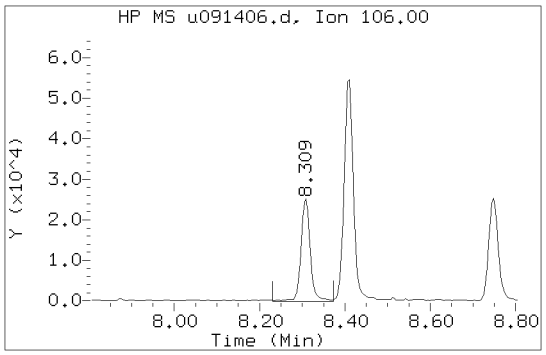
BEFORE

MASS
106
AREA
39301
HEIGHT
25250
18-Sep-2023
12:30
linh
pham




AFTER

MASS
106
AREA
39301
HEIGHT
25250
18-Sep-2023
12:30
linh
pham



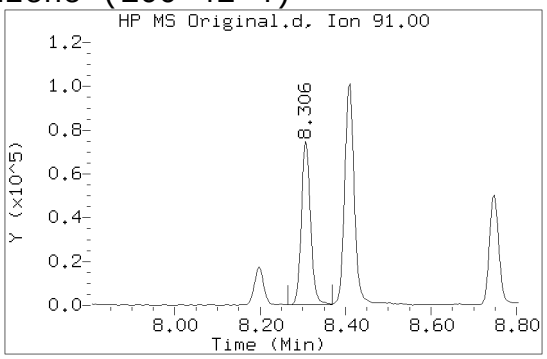
Data File : \\nahstws005\target\chem\voa9.i\u230914.b\u091406.d
Inj Date : 14-SEP-2023 17:37
InstruID : VOA9.i
LabSampID : VSTD005

## Ethylbenzene (100-41-4)

Reason Code:

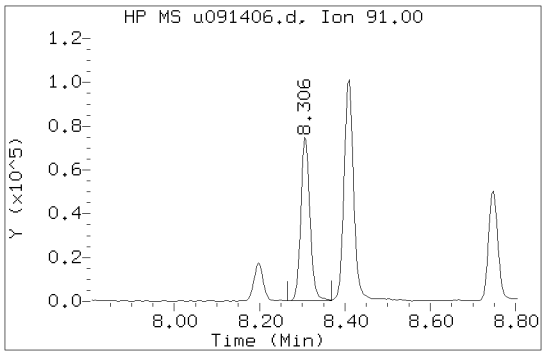
**BEFORE**

MASS
91
AREA
113082
HEIGHT
74731
18-Sep-2023
12:30
linh
pham




**AFTER**

MASS
91
AREA
113082
HEIGHT
74731
18-Sep-2023
12:30
linh
pham

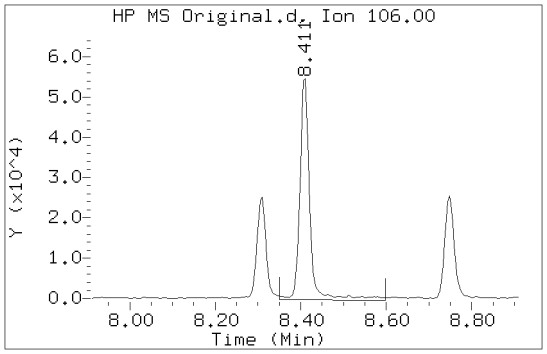



## m,p-Xylenes ()

Reason Code:

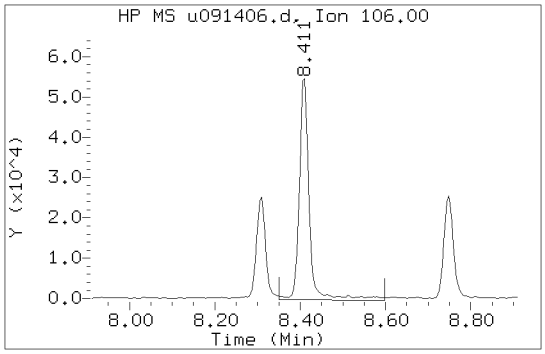
**BEFORE**

MASS
106
AREA
91941
HEIGHT
54902
18-Sep-2023
12:30
linh
pham



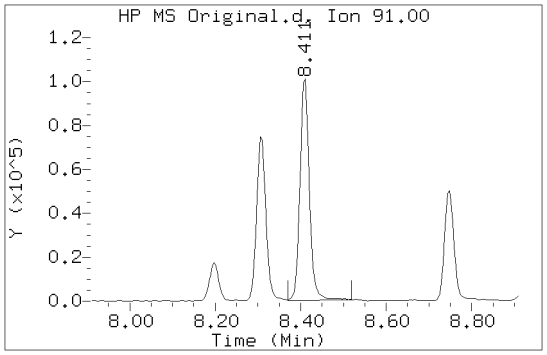

**AFTER**

MASS
106
AREA
91941
HEIGHT
54902
18-Sep-2023
12:30
linh
pham



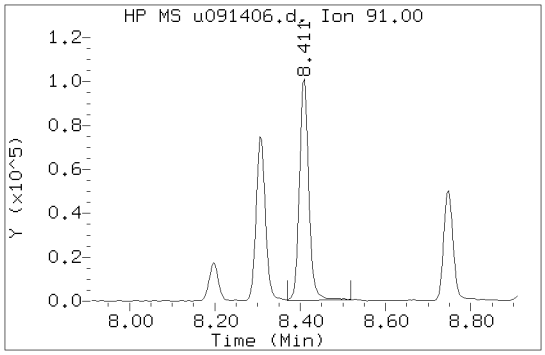

**BEFORE**

MASS
91
AREA
156925
HEIGHT
100760
18-Sep-2023
12:30
linh
pham




**AFTER**

MASS
91
AREA
156925
HEIGHT
100760
18-Sep-2023
12:30
linh
pham

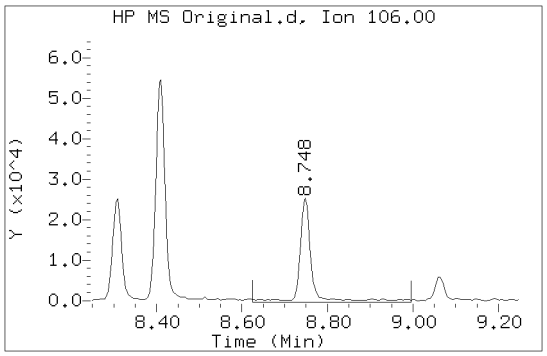



## o-Xylene (95-47-6)

Reason Code:

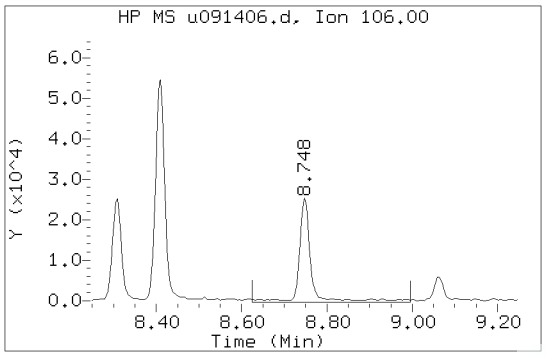
**BEFORE**

MASS
106
AREA
51484
HEIGHT
25760
18-Sep-2023
12:30
linh
pham




**AFTER**

MASS
106
AREA
51484
HEIGHT
25760
18-Sep-2023
12:30
linh
pham



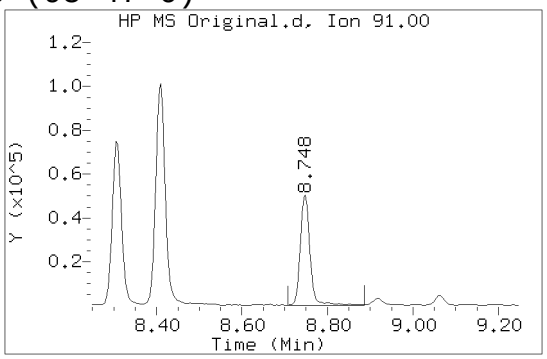
Data File : \\nahstws005\target\chem\voa9.i\u230914.b\u091406.d
Inj Date : 14-SEP-2023 17:37
InstruID : VOA9.i
LabSampID : VSTD005

## o-Xylene (95-47-6)

Reason Code:

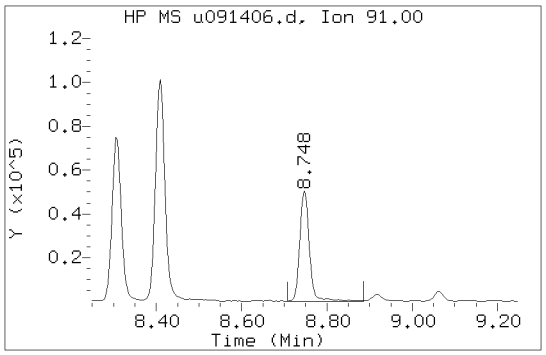
BEFORE

MASS
91
AREA
79419
HEIGHT
50150
18-Sep-2023
12:30
linh
pham




AFTER

MASS
91
AREA
79419
HEIGHT
50150
18-Sep-2023
12:30
linh
pham

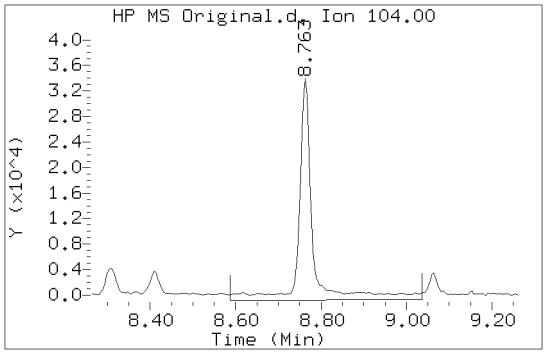



## Styrene (100-42-5)

Reason Code:

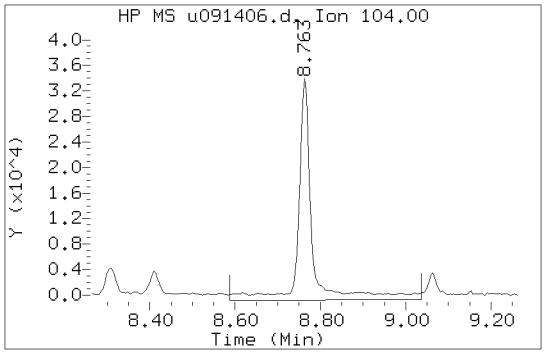
BEFORE

MASS
104
AREA
81277
HEIGHT
34687
18-Sep-2023
12:30
linh
pham



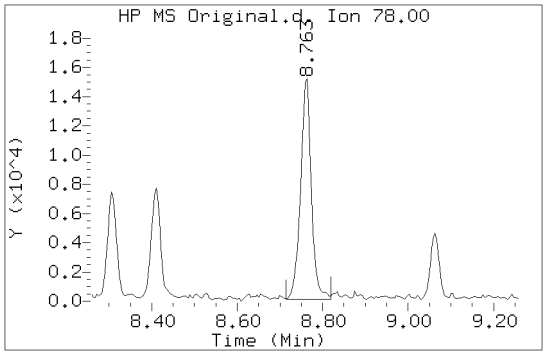

AFTER

MASS
104
AREA
81277
HEIGHT
34687
18-Sep-2023
12:30
linh
pham



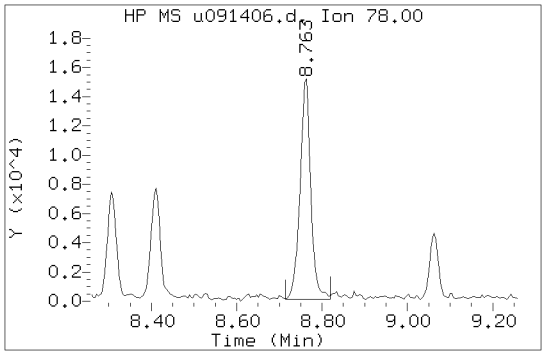

BEFORE

MASS
78
AREA
26871
HEIGHT
15069
18-Sep-2023
12:30
linh
pham




AFTER

MASS
78
AREA
26871
HEIGHT
15069
18-Sep-2023
12:30
linh
pham

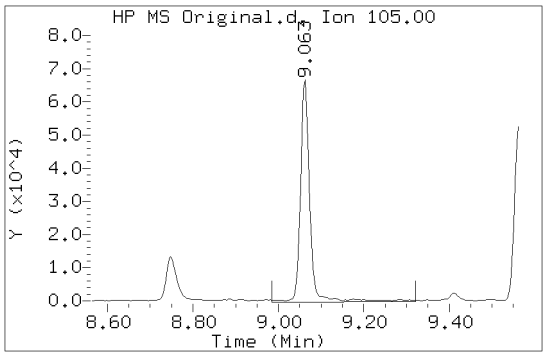



## Isopropylbenzene (98-82-8)

Reason Code:

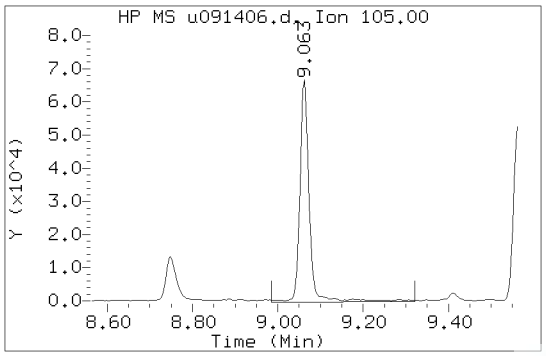
BEFORE

MASS
105
AREA
106778
HEIGHT
66977
18-Sep-2023
12:30
linh
pham




AFTER

MASS
105
AREA
106778
HEIGHT
66977
18-Sep-2023
12:30
linh
pham



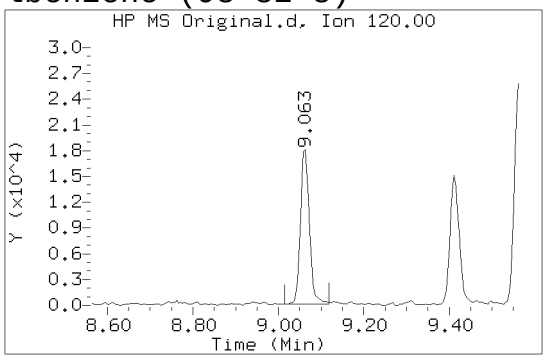
Data File : \\nahstws005\target\chem\voa9.i\u230914.b\u091406.d
Inj Date : 14-SEP-2023 17:37
InstruID : VOA9.i
LabSampID : VSTD005

## Isopropylbenzene (98-82-8)

Reason Code:

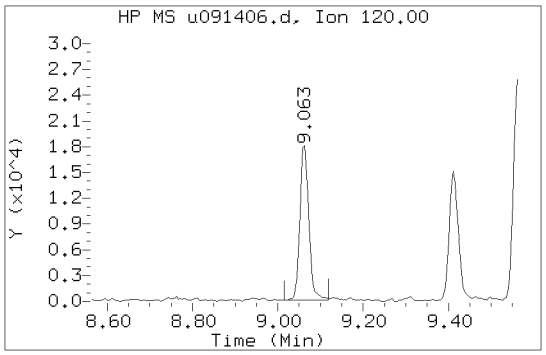
BEFORE

MASS
120
AREA
26818
HEIGHT
17946
18-Sep-2023
12:30
linh
pham




AFTER

MASS
120
AREA
26818
HEIGHT
17946
18-Sep-2023
12:30
linh
pham

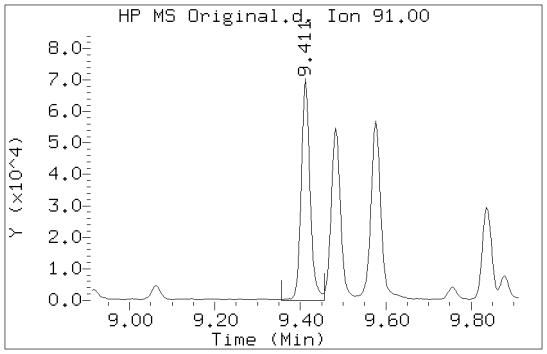



## n-Propylbenzene (106-65-1)

Reason Code:

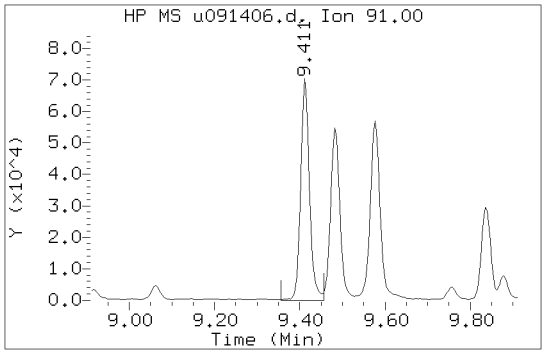
BEFORE

MASS
91
AREA
104281
HEIGHT
70423
18-Sep-2023
12:30
linh
pham



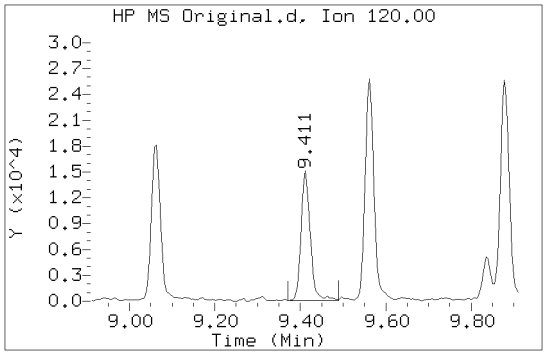

AFTER

MASS
91
AREA
104281
HEIGHT
70423
18-Sep-2023
12:30
linh
pham



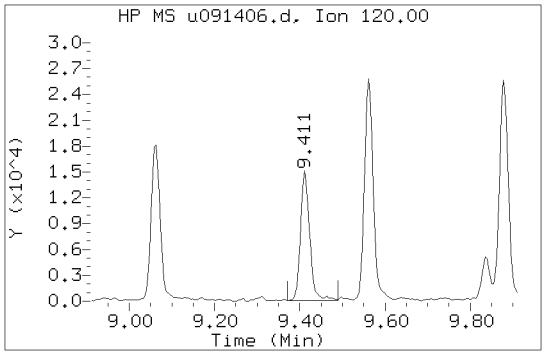

BEFORE

MASS
120
AREA
23145
HEIGHT
15052
18-Sep-2023
12:30
linh
pham




AFTER

MASS
120
AREA
23145
HEIGHT
15052
18-Sep-2023
12:30
linh
pham

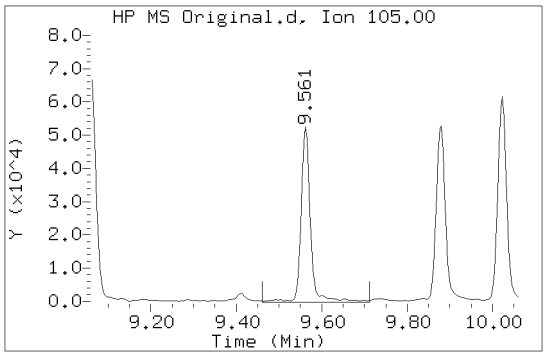



## 1,3,5-Trimethylbenzene (108-67-8)

Reason Code:

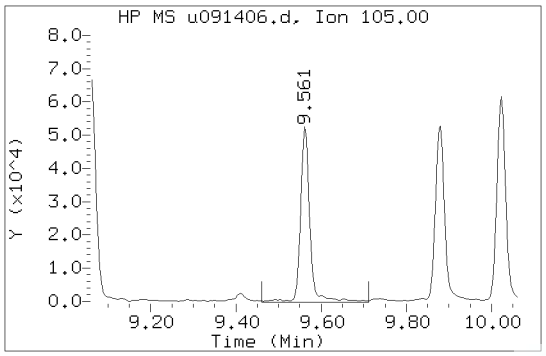
BEFORE

MASS
105
AREA
83567
HEIGHT
52856
18-Sep-2023
12:30
linh
pham




AFTER

MASS
105
AREA
83567
HEIGHT
52856
18-Sep-2023
12:30
linh
pham



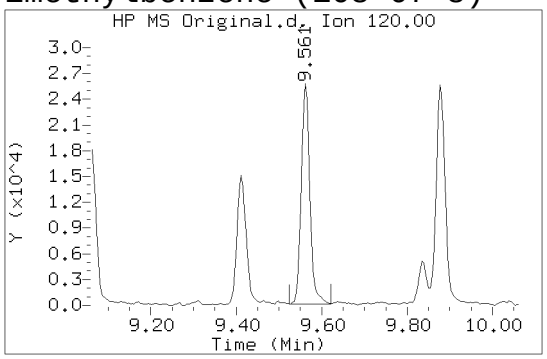
Data File : \\nahstws005\target\chem\voa9.i\u230914.b\u091406.d
Inj Date : 14-SEP-2023 17:37
InstruID : VOA9.i
LabSampID : VSTD005

## 1,3,5-Trimethylbenzene (108-67-8)

Reason Code:

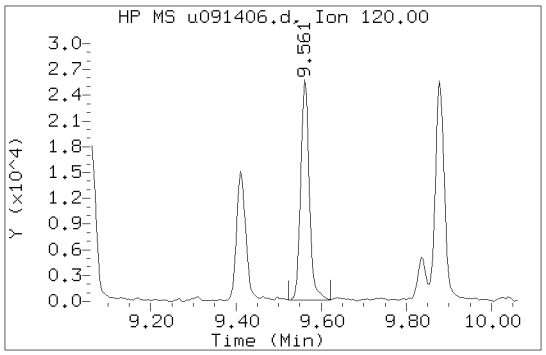
**BEFORE**

MASS
120
AREA
36704
HEIGHT
25646
18-Sep-2023
12:30
linh
pham




**AFTER**

MASS
120
AREA
36704
HEIGHT
25646
18-Sep-2023
12:30
linh
pham

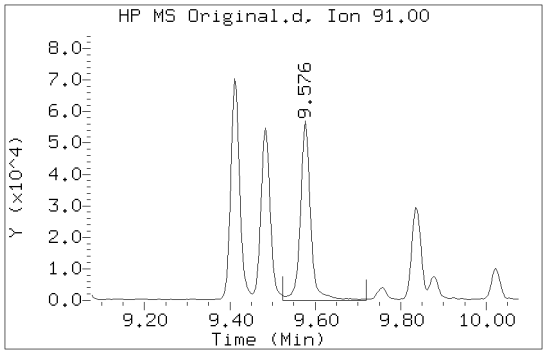



## 4-Chlorotoluene (106-43-4)

Reason Code:

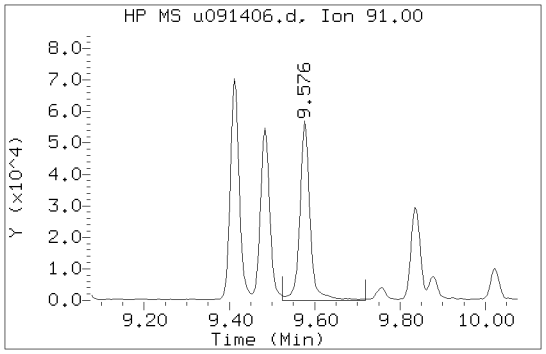
**BEFORE**

MASS
91
AREA
97057
HEIGHT
56999
18-Sep-2023
12:30
linh
pham



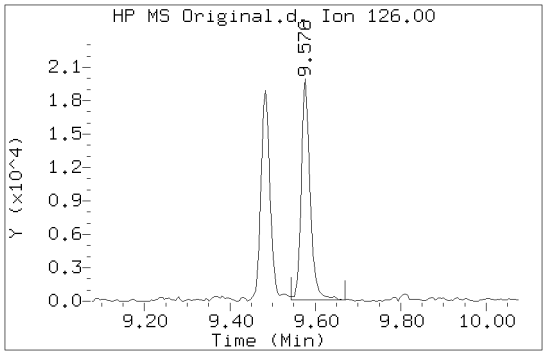

**AFTER**

MASS
91
AREA
97057
HEIGHT
56999
18-Sep-2023
12:30
linh
pham



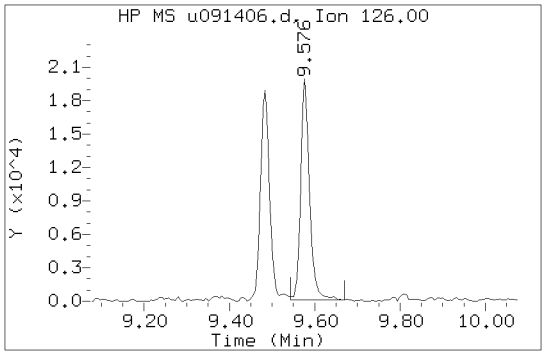

**BEFORE**

MASS
126
AREA
29274
HEIGHT
19828
18-Sep-2023
12:30
linh
pham




**AFTER**

MASS
126
AREA
29274
HEIGHT
19828
18-Sep-2023
12:30
linh
pham

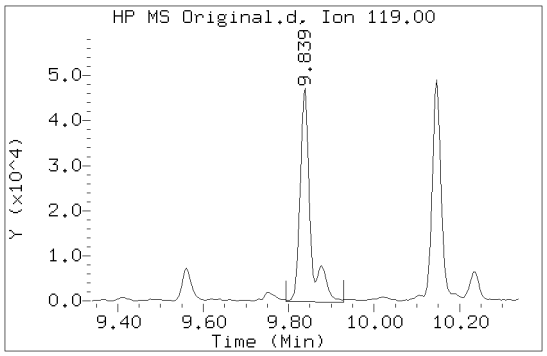



## tert-Butylbenzene (98-06-6)

Reason Code:

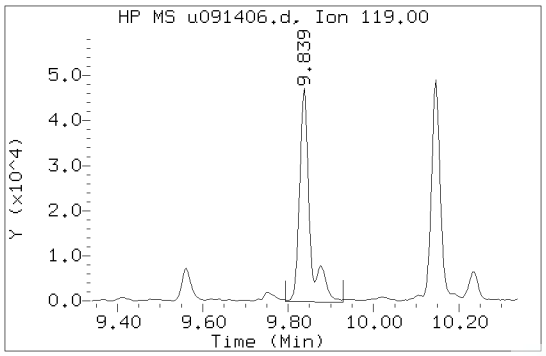
**BEFORE**

MASS
119
AREA
82646
HEIGHT
47356
18-Sep-2023
12:30
linh
pham




**AFTER**

MASS
119
AREA
82646
HEIGHT
47356
18-Sep-2023
12:30
linh
pham

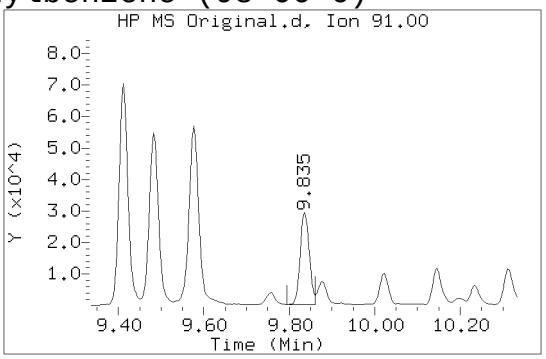


Data File : \\nahstws005\target\chem\voa9.i\u230914.b\u091406.d
Inj Date : 14-SEP-2023 17:37
InstruID : VOA9.i
LabSampID : VSTD005

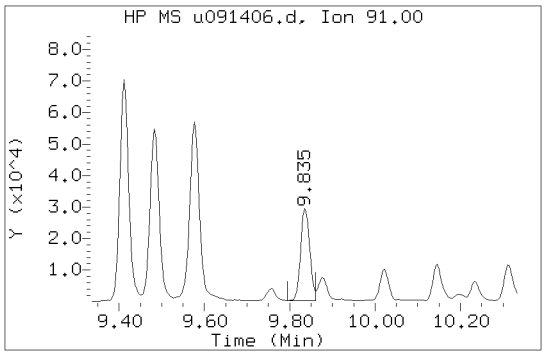
## tert-Butylbenzene (98-06-6)

Reason Code:

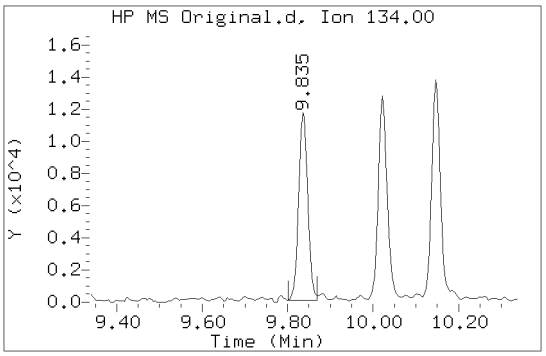
BEFORE
MASS
91
AREA
44815
HEIGHT
29298
18-Sep-2023
12:30
linh
pham



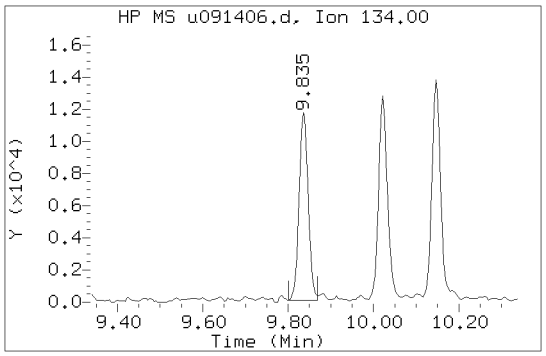

AFTER
MASS
91
AREA
44815
HEIGHT
29298
18-Sep-2023
12:30
linh
pham




BEFORE
MASS
134
AREA
17772
HEIGHT
11642
18-Sep-2023
12:30
linh
pham



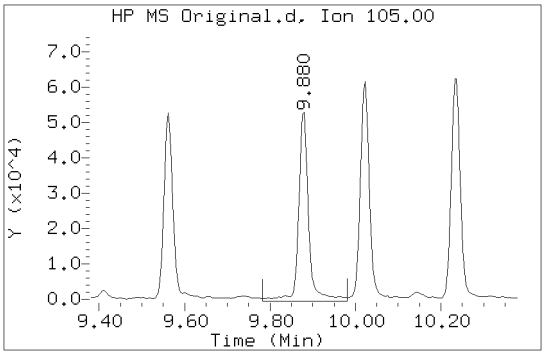

AFTER
MASS
134
AREA
17772
HEIGHT
11642
18-Sep-2023
12:30
linh
pham



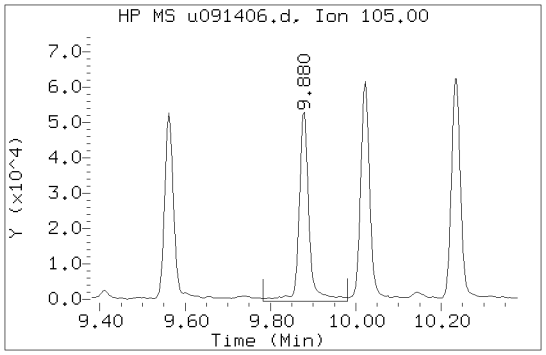

## 1,2,4-Trimethylbenzene (95-63-6)

Reason Code:

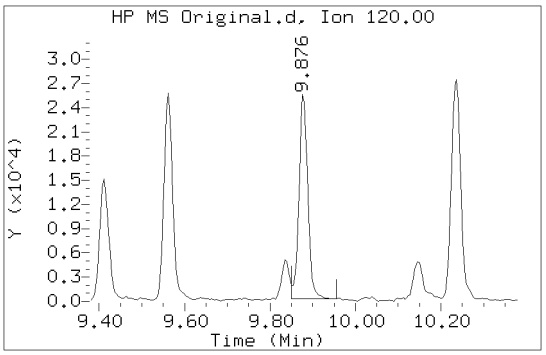
BEFORE
MASS
105
AREA
89902
HEIGHT
53384
18-Sep-2023
12:30
linh
pham



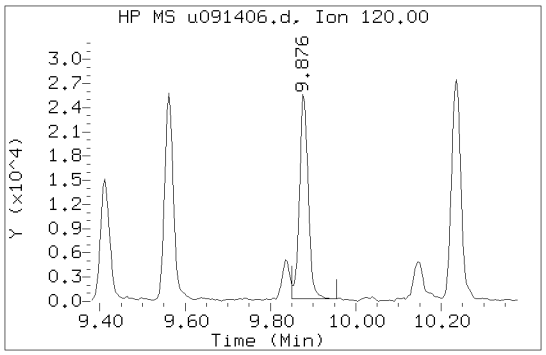

AFTER
MASS
105
AREA
89902
HEIGHT
53384
18-Sep-2023
12:30
linh
pham




BEFORE
MASS
120
AREA
37339
HEIGHT
25351
18-Sep-2023
12:30
linh
pham




AFTER
MASS
120
AREA
37339
HEIGHT
25351
18-Sep-2023
12:30
linh
pham



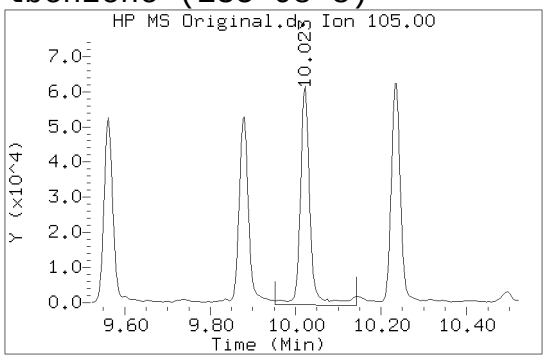
Data File : \\nahstws005\target\chem\voa9.i\u230914.b\u091406.d
Inj Date : 14-SEP-2023 17:37
InstruID : VOA9.i
LabSampID : VSTD005

## sec-Butylbenzene (135-98-8)

Reason Code:

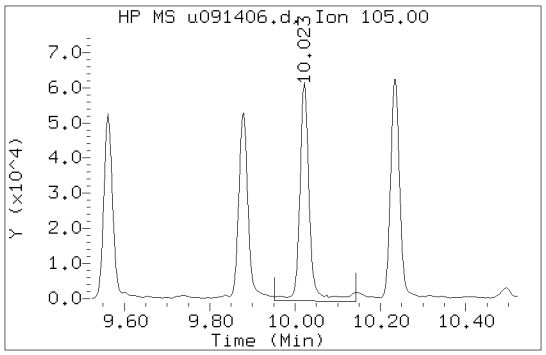
BEFORE

MASS
105
AREA
102146
HEIGHT
62299
18-Sep-2023
12:30
linh
pham



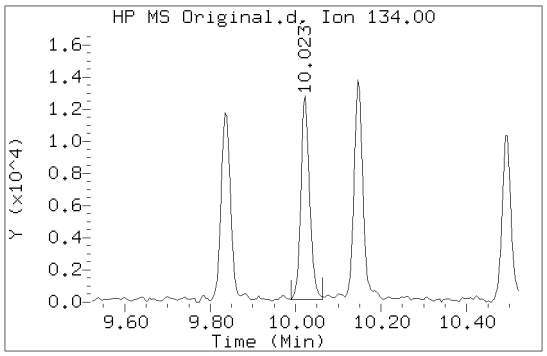

AFTER

MASS
105
AREA
102146
HEIGHT
62299
18-Sep-2023
12:30
linh
pham



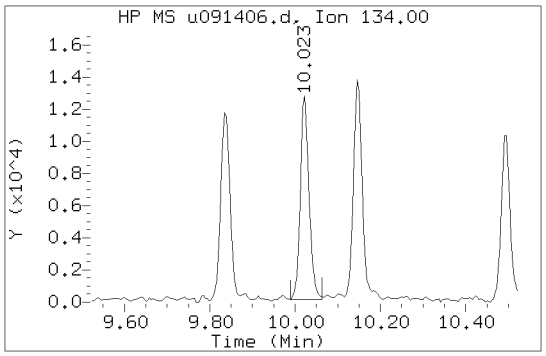

BEFORE

MASS
134
AREA
18328
HEIGHT
12659
18-Sep-2023
12:30
linh
pham




AFTER

MASS
134
AREA
18328
HEIGHT
12659
18-Sep-2023
12:30
linh
pham

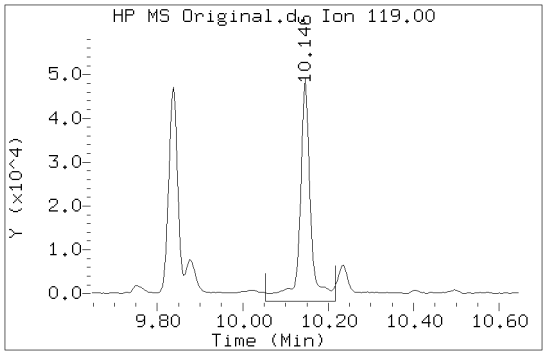



## p-Isopropyltoluene (99-87-6)

Reason Code:

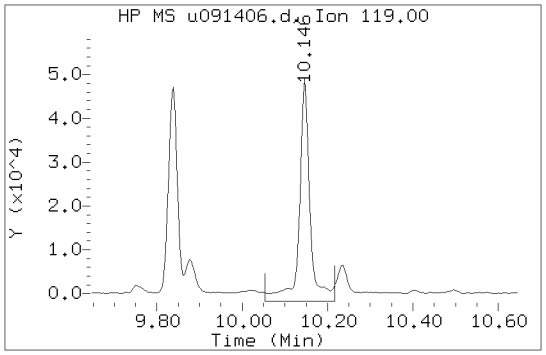
BEFORE

MASS
119
AREA
91770
HEIGHT
50723
18-Sep-2023
12:30
linh
pham



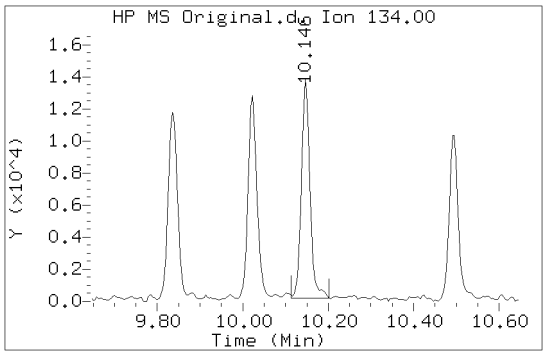

AFTER

MASS
119
AREA
91770
HEIGHT
50723
18-Sep-2023
12:30
linh
pham



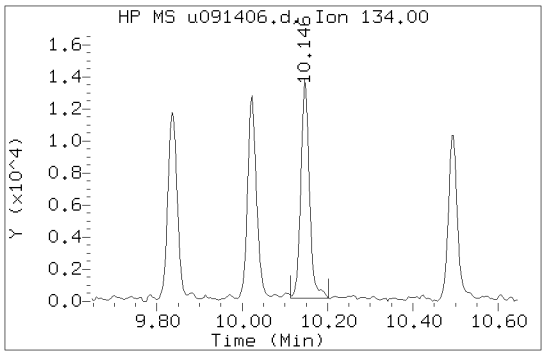

BEFORE

MASS
134
AREA
19665
HEIGHT
13619
18-Sep-2023
12:30
linh
pham




AFTER

MASS
134
AREA
19665
HEIGHT
13619
18-Sep-2023
12:30
linh
pham



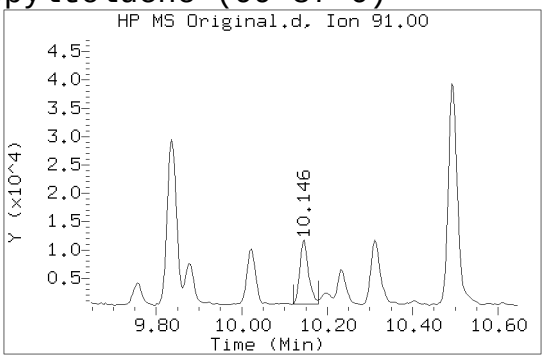
Data File : \\nahstws005\target\chem\voa9.i\u230914.b\u091406.d
Inj Date : 14-SEP-2023 17:37
InstruID : VOA9.i
LabSampID : VSTD005

## p-Isopropyltoluene (99-87-6)

Reason Code:

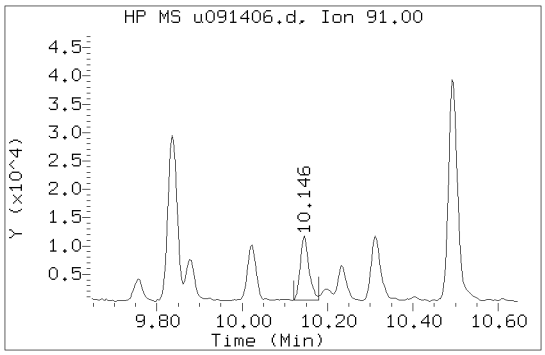
BEFORE

MASS
91
AREA
16727
HEIGHT
11415
18-Sep-2023
12:30
linh
pham




AFTER

MASS
91
AREA
16727
HEIGHT
11415
18-Sep-2023
12:30
linh
pham

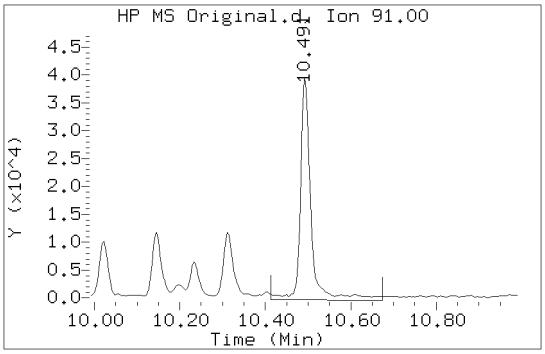



## n-Butylbenzene (104-51-8)

Reason Code:

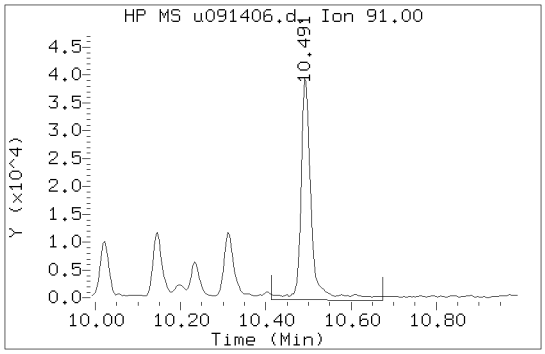
BEFORE

MASS
91
AREA
70297
HEIGHT
39689
18-Sep-2023
12:30
linh
pham



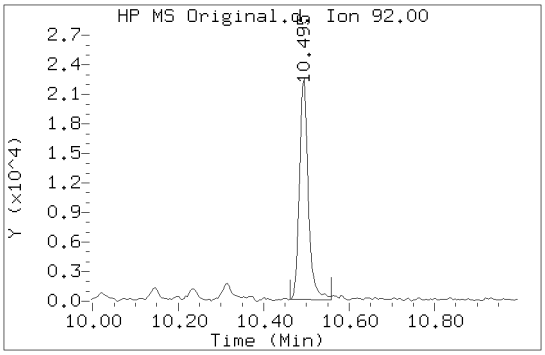

AFTER

MASS
91
AREA
70297
HEIGHT
39689
18-Sep-2023
12:30
linh
pham



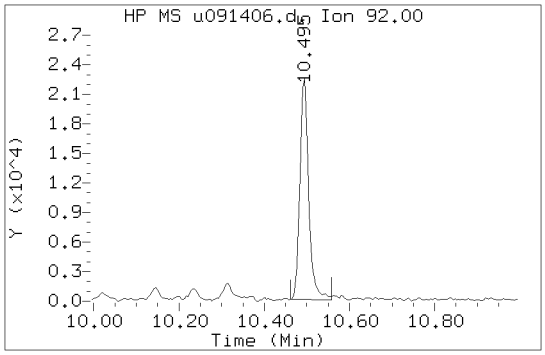

BEFORE

MASS
92
AREA
33008
HEIGHT
22403
18-Sep-2023
12:30
linh
pham



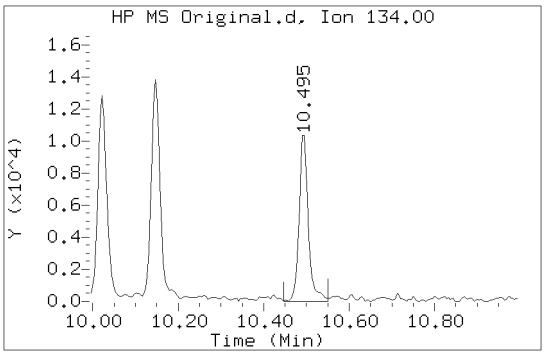

AFTER

MASS
92
AREA
33008
HEIGHT
22403
18-Sep-2023
12:30
linh
pham



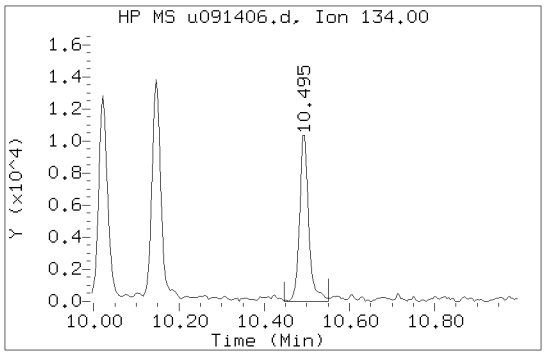

BEFORE

MASS
134
AREA
15917
HEIGHT
10357
18-Sep-2023
12:30
linh
pham




AFTER

MASS
134
AREA
15917
HEIGHT
10357
18-Sep-2023
12:30
linh
pham



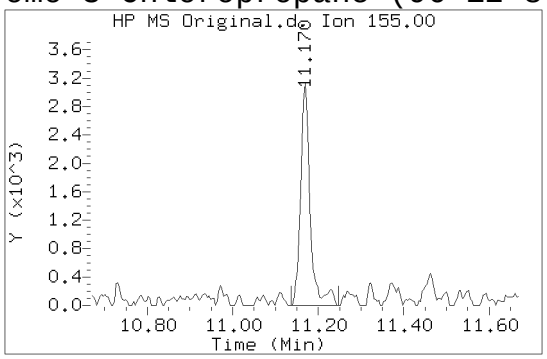
Data File : \\nahstws005\target\chem\voa9.i\u230914.b\u091406.d
Inj Date : 14-SEP-2023 17:37
InstruID : VOA9.i
LabSampID : VSTD005

## 1,2-Dibromo-3-Chloropropane (96-12-8)

Reason Code:

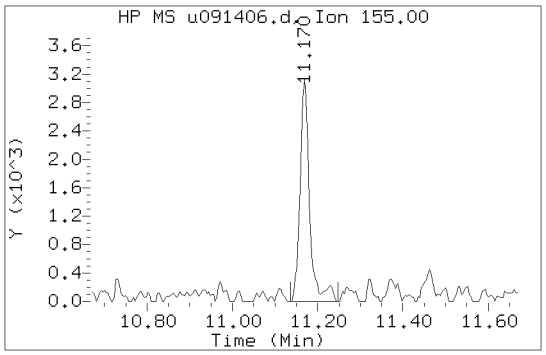
BEFORE

MASS
155
AREA
4962
HEIGHT
3123
18-Sep-2023
12:30
linh
pham



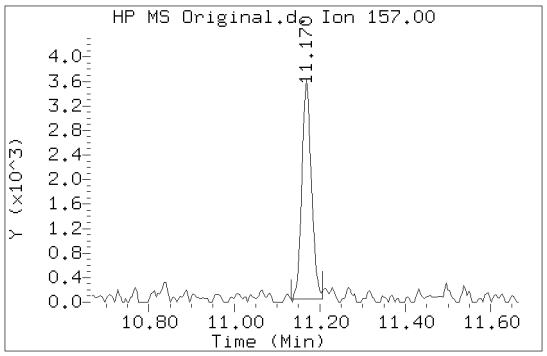

AFTER

MASS
155
AREA
4962
HEIGHT
3123
18-Sep-2023
12:30
linh
pham



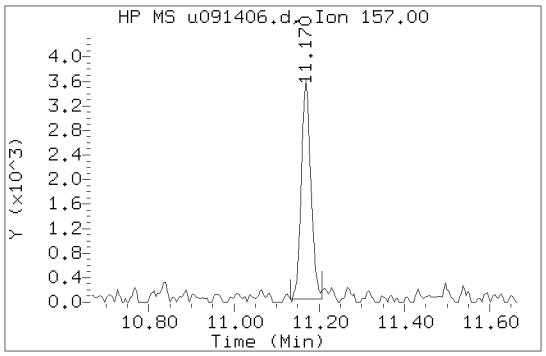

BEFORE

MASS
157
AREA
5644
HEIGHT
3570
18-Sep-2023
12:30
linh
pham



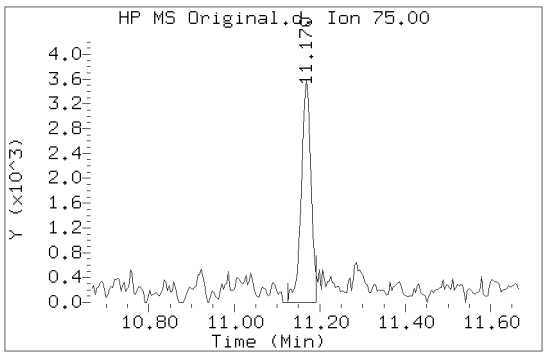

AFTER

MASS
157
AREA
5644
HEIGHT
3570
18-Sep-2023
12:30
linh
pham



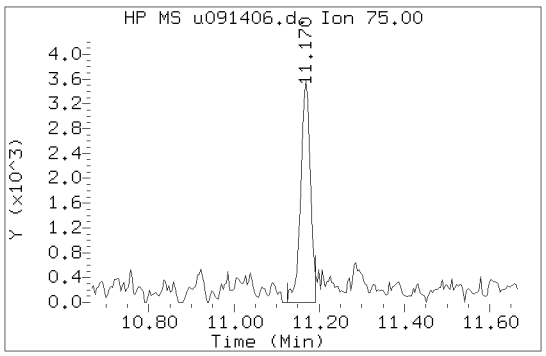

BEFORE

MASS
75
AREA
5782
HEIGHT
3574
18-Sep-2023
12:30
linh
pham




AFTER

MASS
75
AREA
5782
HEIGHT
3574
18-Sep-2023
12:30
linh
pham

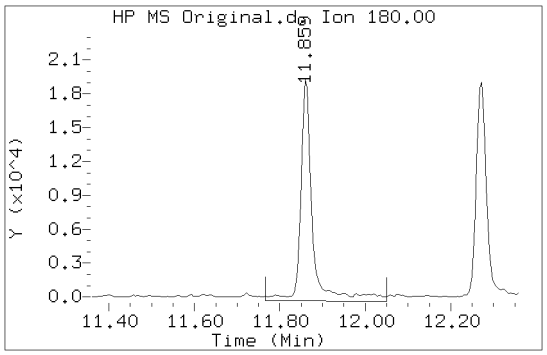



## 1,2,4-Trichlorobenzene (120-82-1)

Reason Code:

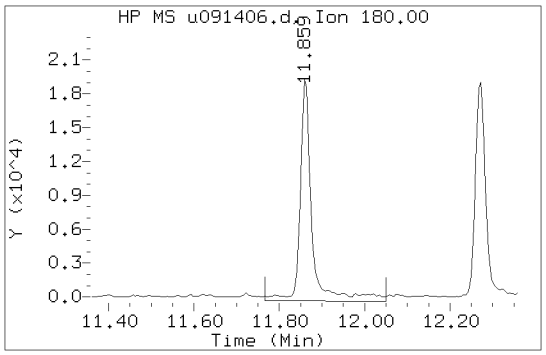
BEFORE

MASS
180
AREA
38785
HEIGHT
19598
18-Sep-2023
12:30
linh
pham




AFTER

MASS
180
AREA
38785
HEIGHT
19598
18-Sep-2023
12:30
linh
pham



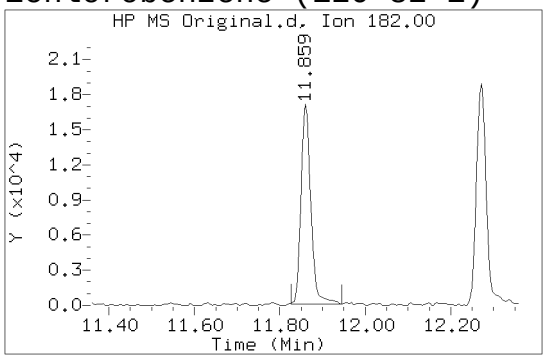
Data File : \\nahstws005\target\chem\voa9.i\u230914.b\u091406.d
Inj Date : 14-SEP-2023 17:37
InstruID : VOA9.i
LabSampID : VSTD005

## 1,2,4-Trichlorobenzene (120-82-1)

Reason Code:

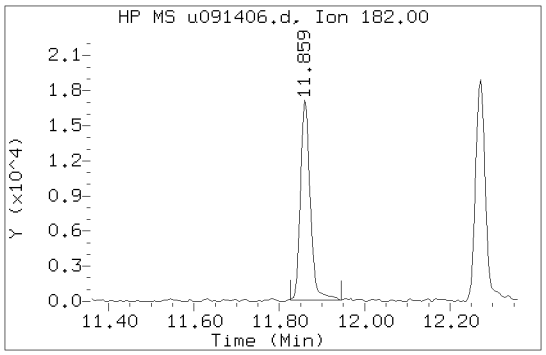
BEFORE

MASS
182
AREA
27874
HEIGHT
17066
18-Sep-2023
12:30
linh
pham



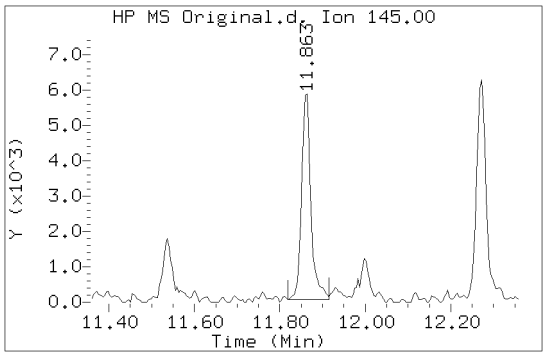

AFTER

MASS
182
AREA
27874
HEIGHT
17066
18-Sep-2023
12:30
linh
pham



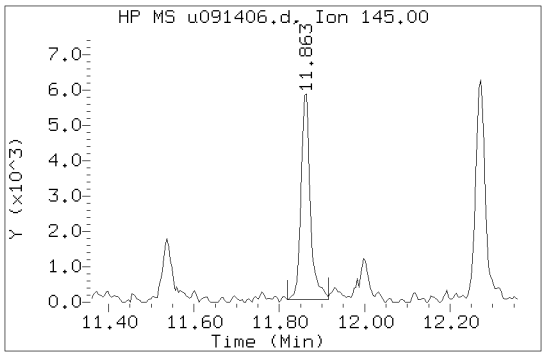

BEFORE

MASS
145
AREA
9106
HEIGHT
5827
18-Sep-2023
12:30
linh
pham




AFTER

MASS
145
AREA
9106
HEIGHT
5827
18-Sep-2023
12:30
linh
pham

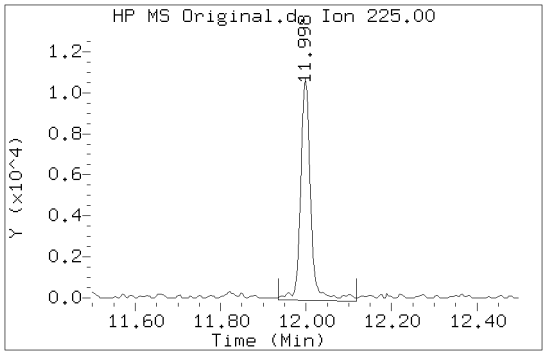



## Hexachlorobutadiene (87-68-3)

Reason Code:

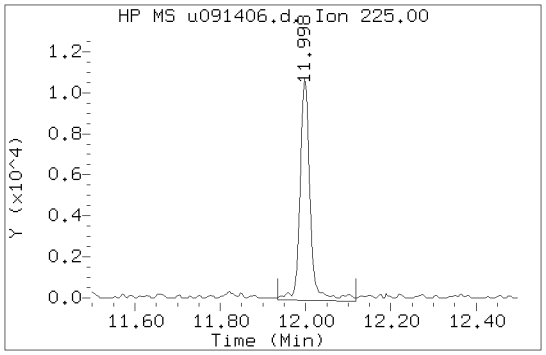
BEFORE

MASS
225
AREA
18387
HEIGHT
10796
18-Sep-2023
12:30
linh
pham



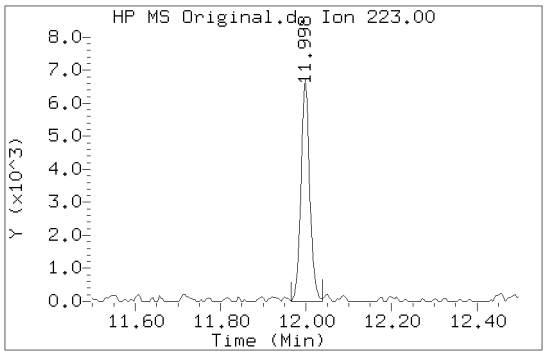

AFTER

MASS
225
AREA
18387
HEIGHT
10796
18-Sep-2023
12:30
linh
pham



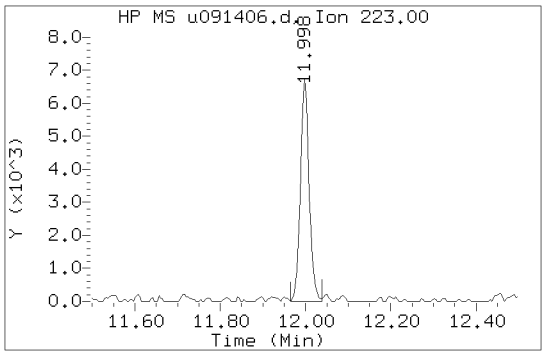

BEFORE

MASS
223
AREA
9758
HEIGHT
6712
18-Sep-2023
12:30
linh
pham




AFTER

MASS
223
AREA
9758
HEIGHT
6712
18-Sep-2023
12:30
linh
pham

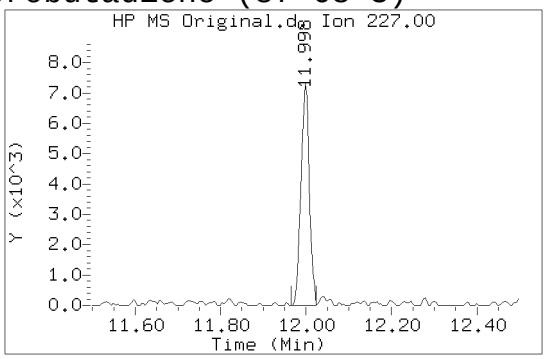


Data File : \\nahstws005\target\chem\voa9.i\u230914.b\u091406.d
Inj Date : 14-SEP-2023 17:37
InstruID : VOA9.i
LabSampID : VSTD005

## Hexachlorobutadiene (87-68-3)

**BEFORE**

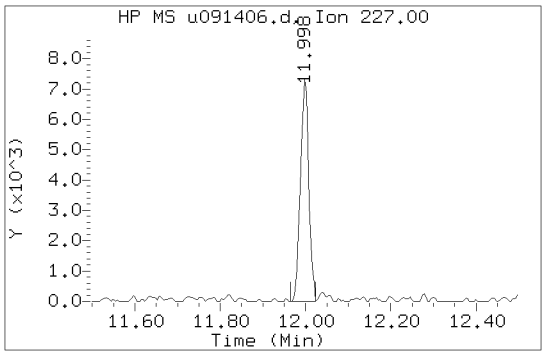
MASS
227
AREA
10189
HEIGHT
7303
18-Sep-2023
12:30
linh
pham




**Reason Code:**

**AFTER**

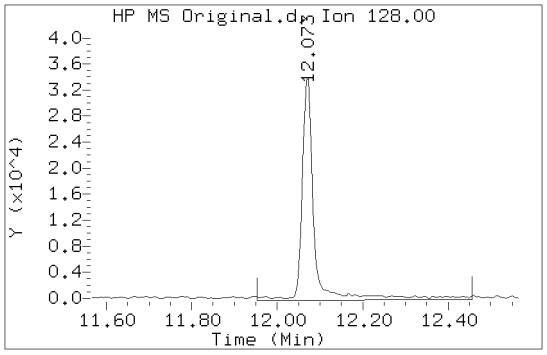
MASS
227
AREA
10189
HEIGHT
7303
18-Sep-2023
12:30
linh
pham




## Naphthalene (91-20-3)

**BEFORE**

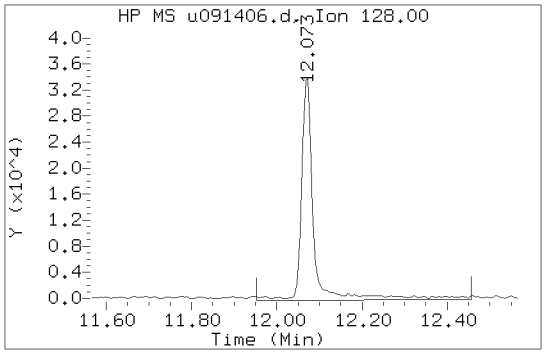
MASS
128
AREA
71056
HEIGHT
34033
18-Sep-2023
12:30
linh
pham




**Reason Code:**

**AFTER**

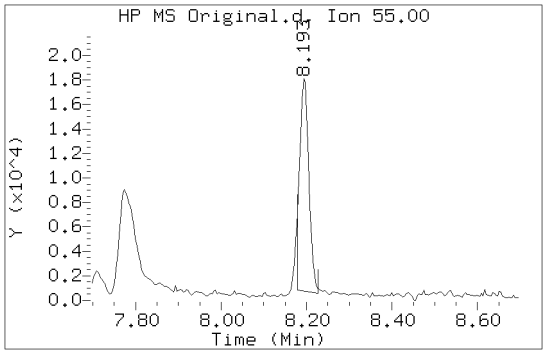
MASS
128
AREA
71056
HEIGHT
34033
18-Sep-2023
12:30
linh
pham




## 1-Chlorohexane (544-10-5)

**BEFORE**

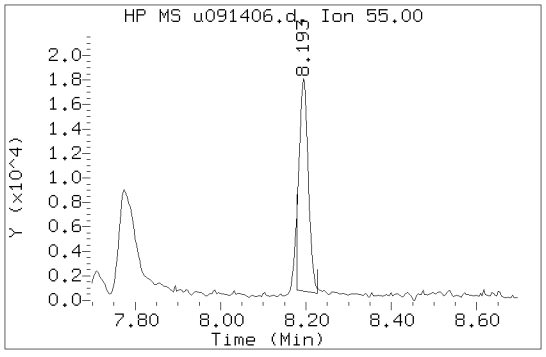
MASS
55
AREA
26895
HEIGHT
17332
18-Sep-2023
12:30
linh
pham




**Reason Code:**

**AFTER**

MASS
55
AREA
26895
HEIGHT
17332
18-Sep-2023
12:30
linh
pham



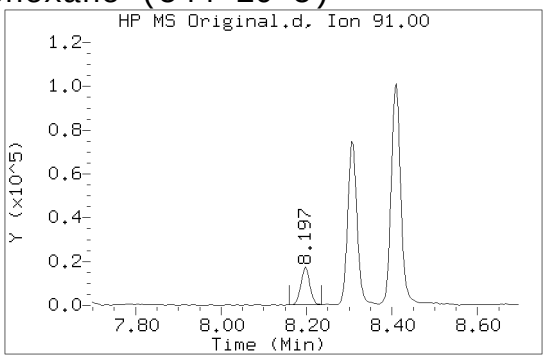
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Inj Date : 14-SEP-2023 17:37
InstruID : VOA9.i
LabSampID : VSTD005

## 1-Chlorohexane (544-10-5)

Reason Code:

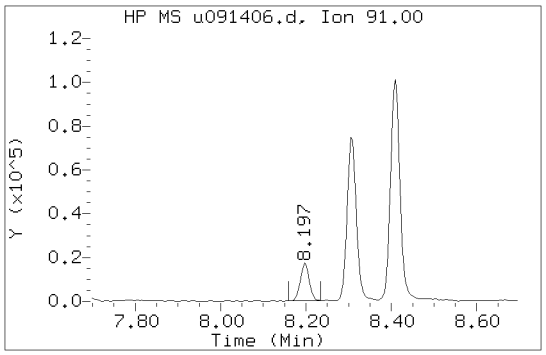
**BEFORE**

MASS
91
AREA
25667
HEIGHT
17258
18-Sep-2023
12:30
linh
pham




**AFTER**

MASS
91
AREA
25667
HEIGHT
17258
18-Sep-2023
12:30
linh
pham

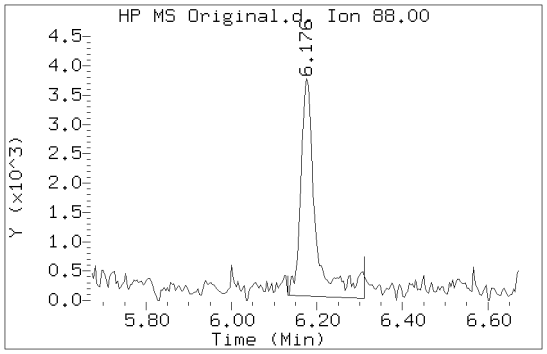



## 1,4-Dioxane ()

Reason Code:

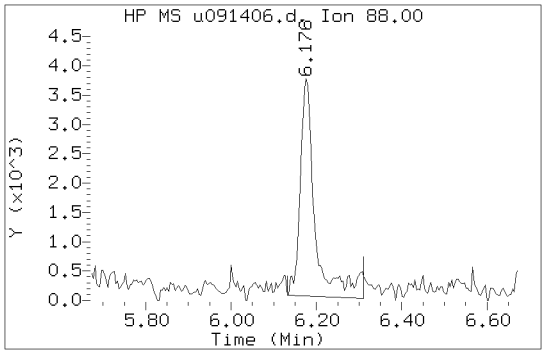
**BEFORE**

MASS
88
AREA
9267
HEIGHT
3705
18-Sep-2023
12:30
linh
pham



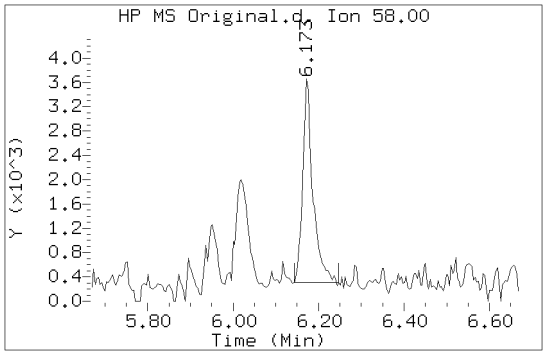

**AFTER**

MASS
88
AREA
9267
HEIGHT
3705
18-Sep-2023
12:30
linh
pham



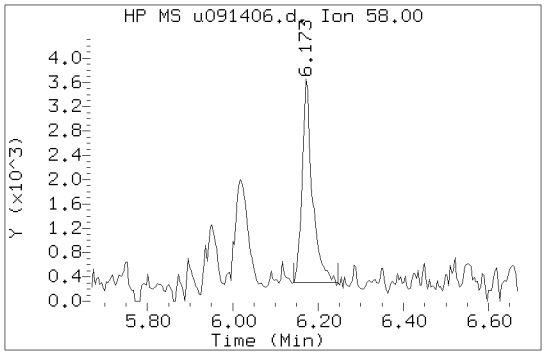

**BEFORE**

MASS
58
AREA
5578
HEIGHT
3349
18-Sep-2023
12:30
linh
pham




**AFTER**

MASS
58
AREA
5578
HEIGHT
3349
18-Sep-2023
12:30
linh
pham

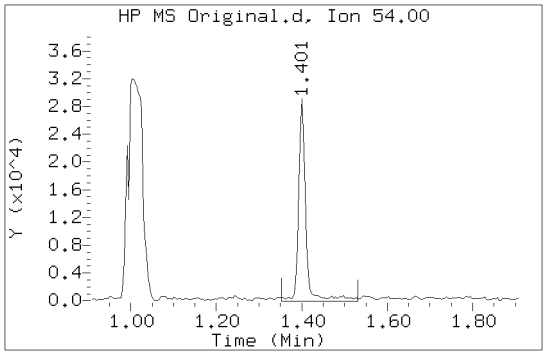



## 1,3-Butadiene (106-99-0)

Reason Code:

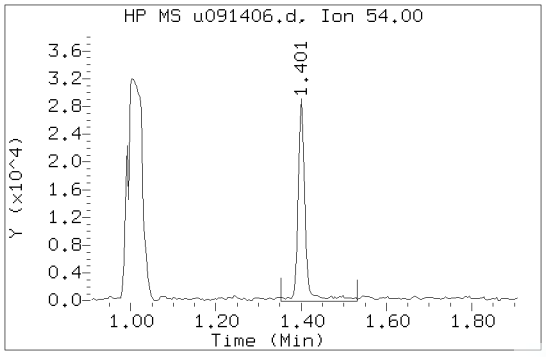
**BEFORE**

MASS
54
AREA
35494
HEIGHT
29135
18-Sep-2023
12:30
linh
pham




**AFTER**

MASS
54
AREA
35494
HEIGHT
29135
18-Sep-2023
12:30
linh
pham



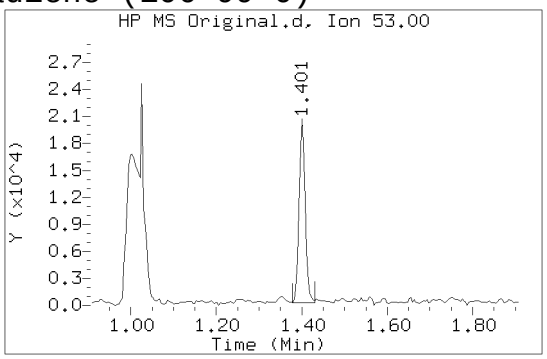
Data File : \\nahstws005\target\chem\voa9.i\u230914.b\u091406.d
Inj Date : 14-SEP-2023 17:37
InstruID : VOA9.i
LabSampID : VSTD005

## 1,3-Butadiene (106-99-0)

Reason Code:

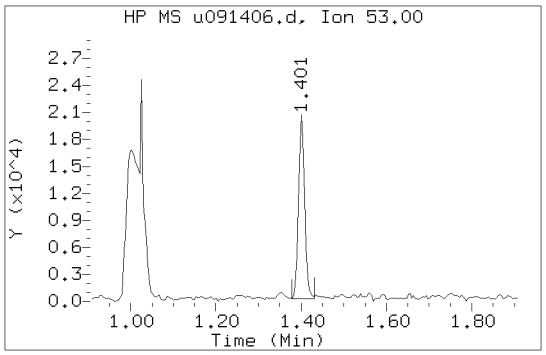
BEFORE

MASS
53
AREA
21126
HEIGHT
20443
18-Sep-2023
12:30
linh
pham




AFTER

MASS
53
AREA
21126
HEIGHT
20443
18-Sep-2023
12:30
linh
pham

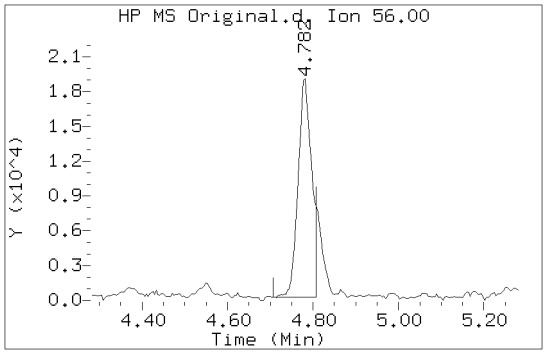



## Cyclohexane (110-82-7)

Reason Code:

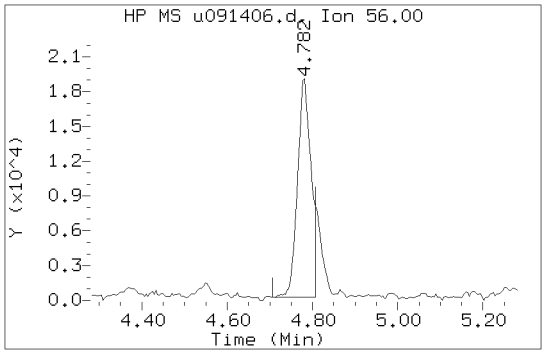
BEFORE

MASS
56
AREA
42320
HEIGHT
18840
18-Sep-2023
12:30
linh
pham



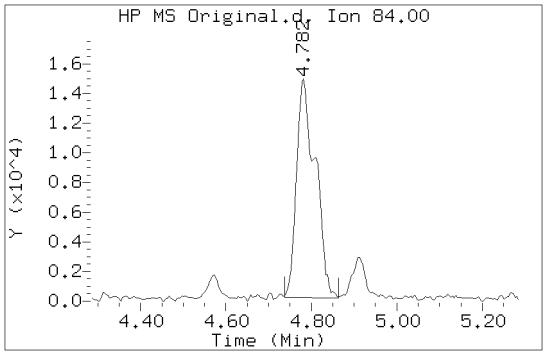

AFTER

MASS
56
AREA
42320
HEIGHT
18840
18-Sep-2023
12:30
linh
pham



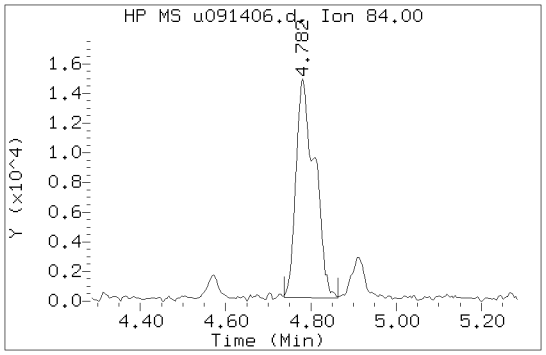

BEFORE

MASS
84
AREA
45669
HEIGHT
14725
18-Sep-2023
12:30
linh
pham



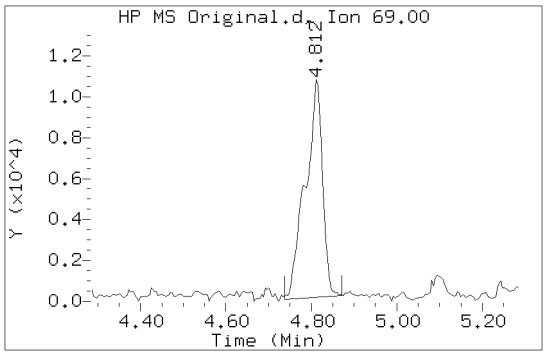

AFTER

MASS
84
AREA
45669
HEIGHT
14725
18-Sep-2023
12:30
linh
pham



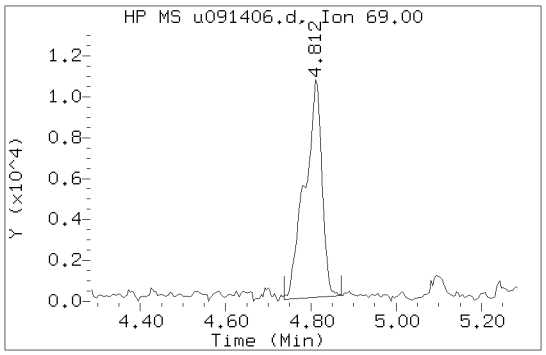

BEFORE

MASS
69
AREA
29867
HEIGHT
10631
18-Sep-2023
12:30
linh
pham




AFTER

MASS
69
AREA
29867
HEIGHT
10631
18-Sep-2023
12:30
linh
pham

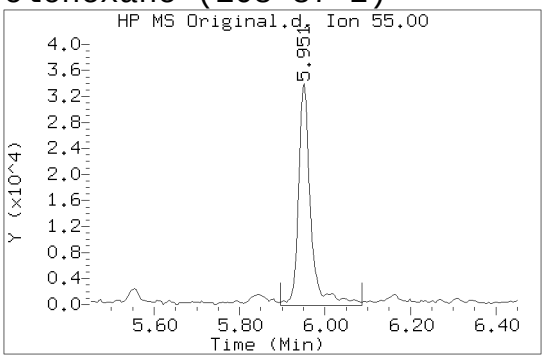


Data File : \\nahstws005\target\chem\voa9.i\u230914.b\u091406.d
Inj Date : 14-SEP-2023 17:37
InstruID : VOA9.i
LabSampID : VSTD005

## Methylcyclohexane (108-87-2)

BEFORE

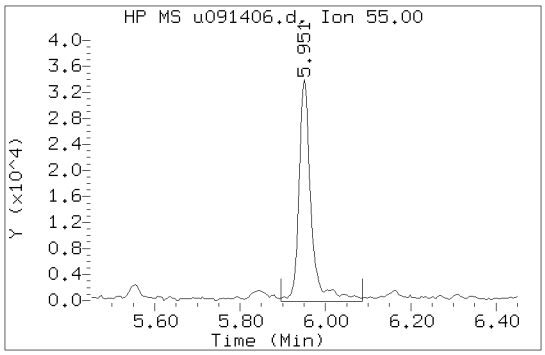
MASS
55
AREA
69365
HEIGHT
34069
18-Sep-2023
12:30
linh
pham




Reason Code:

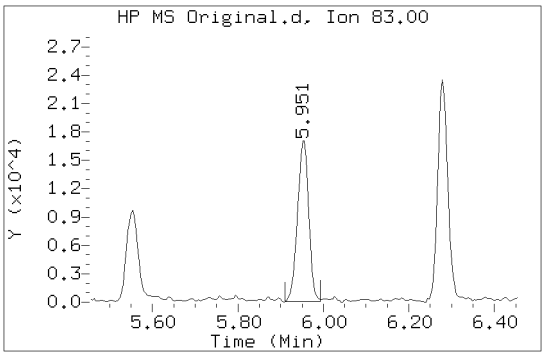
AFTER

MASS
55
AREA
69365
HEIGHT
34069
18-Sep-2023
12:30
linh
pham



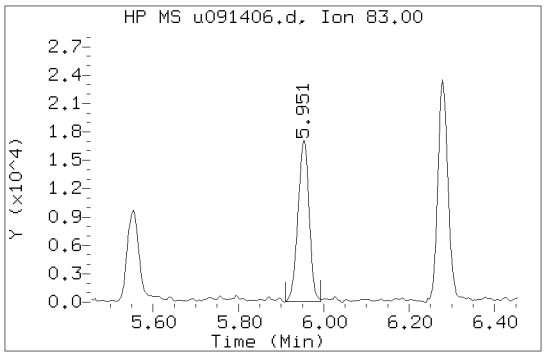

BEFORE

MASS
83
AREA
31431
HEIGHT
16951
18-Sep-2023
12:30
linh
pham




AFTER

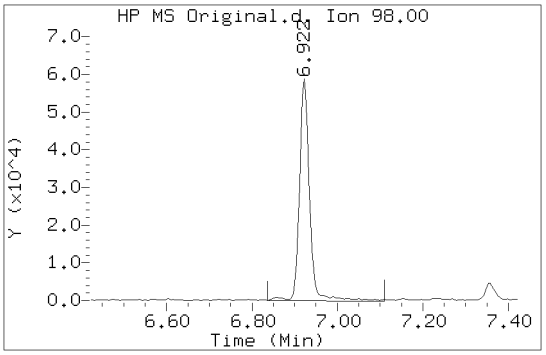
MASS
83
AREA
31431
HEIGHT
16951
18-Sep-2023
12:30
linh
pham




## Toluene-d8 (2037-26-5)

BEFORE

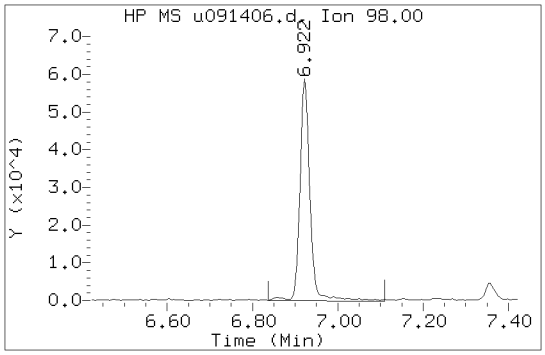
MASS
98
AREA
99501
HEIGHT
58868
18-Sep-2023
12:30
linh
pham




Reason Code:

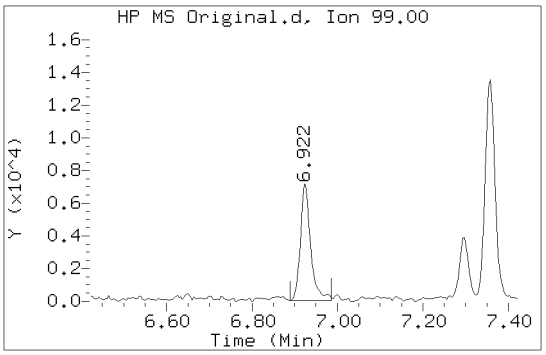
AFTER

MASS
98
AREA
99501
HEIGHT
58868
18-Sep-2023
12:30
linh
pham



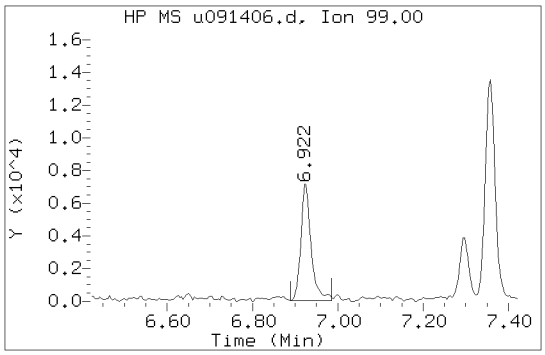

BEFORE

MASS
99
AREA
12052
HEIGHT
7100
18-Sep-2023
12:30
linh
pham




AFTER

MASS
99
AREA
12052
HEIGHT
7100
18-Sep-2023
12:30
linh
pham



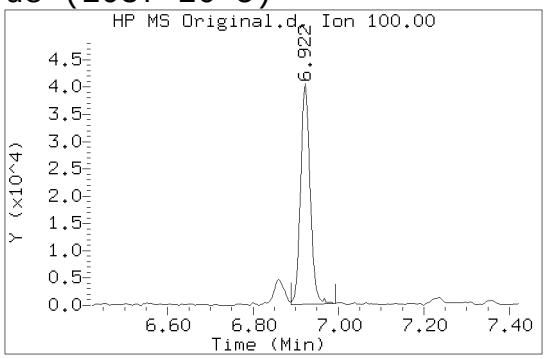
Data File : \\nahstws005\target\chem\voa9.i\u230914.b\u091406.d
Inj Date : 14-SEP-2023 17:37
InstruID : VOA9.i
LabSampID : VSTD005

Toluene-d8 (2037-26-5)

Reason Code:

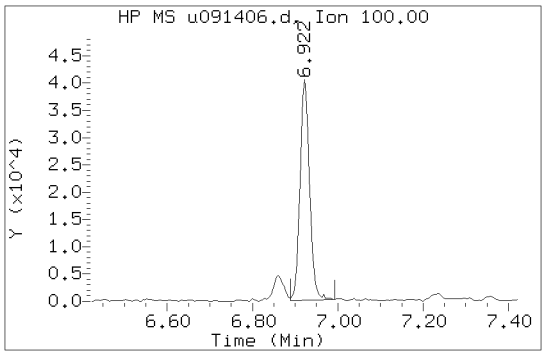
BEFORE

MASS
100
AREA
64121
HEIGHT
40415
18-Sep-2023
12:30
linh
pham




AFTER

MASS
100
AREA
64121
HEIGHT
40415
18-Sep-2023
12:30
linh
pham



Data File: \\NAHSTWS005\Target\chem\voa9.i\U230914.b\U091407.D  Page 1
Report Date: 18-Sep-2023 12:31

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa9.i\U230914.b\U091407.D
Lab Smp Id: VSTD020  Client Smp ID: VSTD020
Inj Date  : 14-SEP-2023 18:00
Operator  : PC  Inst ID: VOA9.i
Smp Info  : VSTD020;VSTD020;1;6;
Misc Info : V9;WATER;0;1;
Comment   :
Method    : \\NAHSTWS005\Target\chem\voa9.i\U230914.b\8260C.m
Meth Date : 18-Sep-2023 12:31 VOA9.i  Quant Type: ISTD
Cal Date  : 14-SEP-2023 17:37  Cal File: U091406.D
Als bottle: 8  Calibration Sample, Level: 6
Dil Factor: 1.00000
Integrator: HP RTE  Compound Sublist: 08260V9.sub
Target Version:  4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

| Name | Value | Description |
|---|---|---|
| DF | 1.000 | Dilution Factor |
| Uf | 5.000 | ng unit correction factor |
| Vo | 5.000 | sample purged |
| Cpnd Variable | | Local Compound Variable |

| | Compounds | QUANT SIG MASS | RT | EXP RT | REL RT | RESPONSE | AMOUNTS CAL-AMT ( ug/l) | ON-COL ( ug/l) |
|---|---|---|---|---|---|---|---|---|
| * 1 | Pentafluorobenzene | 168 | 4.815 | 4.815 | (1.000) | 671734 | 50.0000 | |
| 2 | Dichlorodifluoromethane | 85 | 1.164 | 1.164 | (0.242) | 143501 | 20.0000 | 20.29 |
| 3 | Chloromethane | 50 | 1.299 | 1.299 | (0.270) | 265733 | 20.0000 | 20.87 |
| 5 | Vinyl Chloride | 62 | 1.378 | 1.378 | (0.286) | 175145 | 20.0000 | 20.53 |
| 6 | Bromomethane | 94 | 1.621 | 1.621 | (0.337) | 88771 | 20.0000 | 21.59 |
| 7 | Chloroethane | 64 | 1.704 | 1.704 | (0.354) | 119252 | 20.0000 | 19.01 |
| 8 | Trichlorofluoromethane | 101 | 1.899 | 1.899 | (0.394) | 212310 | 20.0000 | 19.40 |
| 9 | Acrolein | 56 | 2.266 | 2.266 | (0.471) | 24441 | 40.0000 | 42.40(M) |
| 10 | Acetone | 43 | 2.408 | 2.408 | (0.500) | 147123 | 40.0000 | 41.95 |
| 11 | 1,1-Dichloroethene | 96 | 2.333 | 2.333 | (0.485) | 128248 | 20.0000 | 19.28 |
| 15 | Iodomethane | 142 | 2.468 | 2.468 | (0.513) | 126031 | 40.0000 | 36.04 |
| 16 | Acrylonitrile | 53 | 3.068 | 3.068 | (0.637) | 149635 | 40.0000 | 38.18 |
| 17 | Methylene Chloride | 84 | 2.795 | 2.795 | (0.580) | 168006 | 20.0000 | 20.93 |
| 18 | Methyl tert-butyl ether | 73 | 3.079 | 3.079 | (0.640) | 341393 | 20.0000 | 18.08 |
| 19 | Carbon Disulfide | 76 | 2.521 | 2.521 | (0.524) | 705846 | 40.0000 | 39.30 |
| 20 | trans-1,2-Dichloroethene | 96 | 3.061 | 3.061 | (0.636) | 138453 | 20.0000 | 19.85 |
| 21 | Vinyl Acetate | 43 | 3.608 | 3.608 | (0.749) | 918233 | 40.0000 | 37.21 |
| 22 | 1,1-Dichloroethane | 63 | 3.514 | 3.514 | (0.730) | 271813 | 20.0000 | 19.43 |
| 24 | 2-Butanone | 43 | 4.268 | 4.268 | (0.886) | 153709 | 40.0000 | 37.75 |
| 26 | 2,2-Dichloropropane | 77 | 4.182 | 4.182 | (0.868) | 158125 | 20.0000 | 18.66 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 27 cis-1,2-Dichloroethene | 96 | 4.197 | 4.197 (0.872) | 159142 | 20.0000 | 19.95 |
| 28 Chloroform | 83 | 4.571 | 4.571 (0.949) | 266054 | 20.0000 | 19.58 |

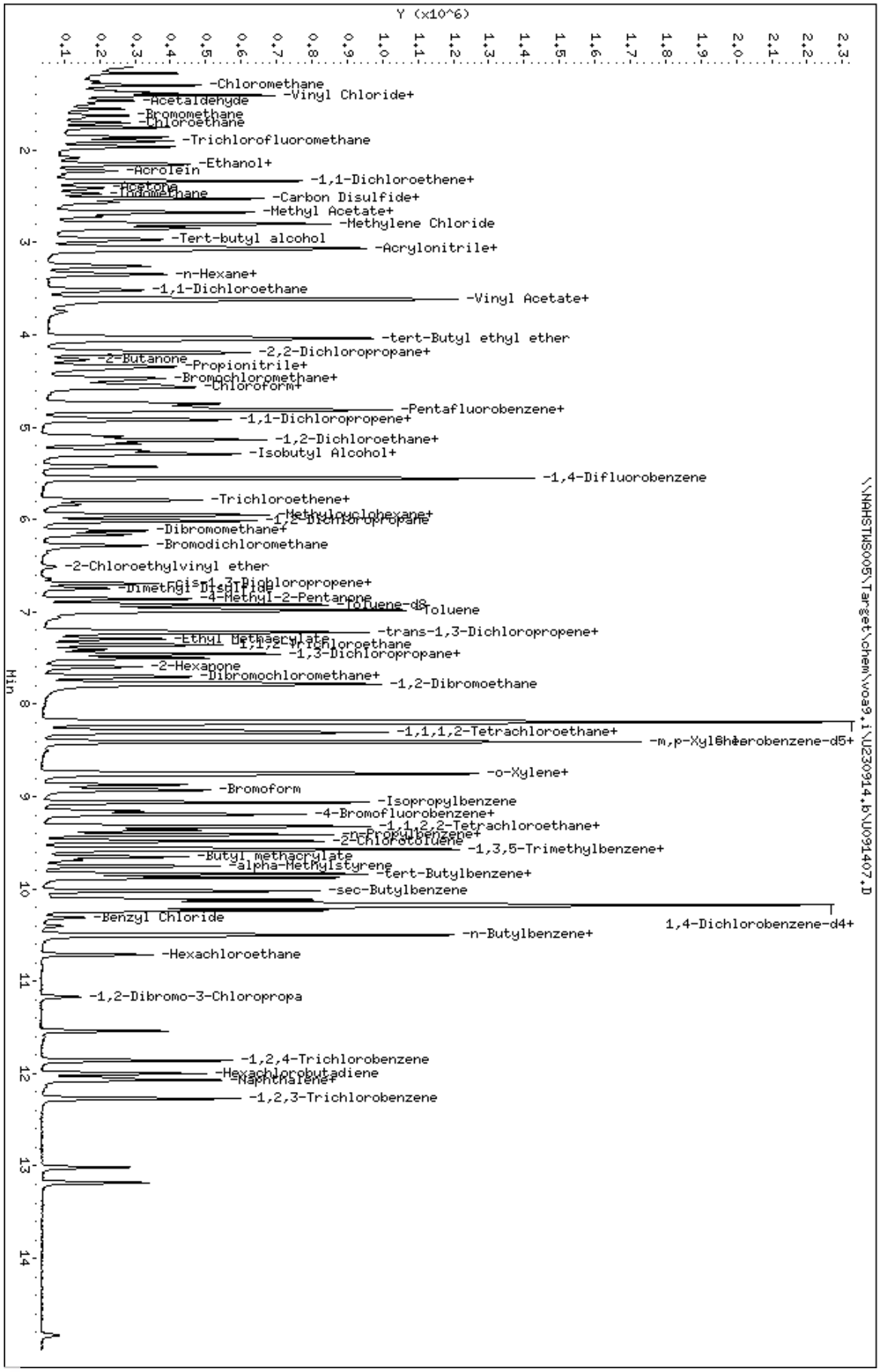
| | Compounds | QUANT SIG MASS | RT | EXP RT | REL RT | RESPONSE | AMOUNTS CAL-AMT ( ug/l) | ON-COL ( ug/l) |
|---|---|---|---|---|---|---|---|---|
| | 29 Bromochloromethane | 128 | 4.470 | 4.470 | (0.928) | 80507 | 20.0000 | 19.26 |
| $ | 30 Dibromofluoromethane | 113 | 4.748 | 4.748 | (0.986) | 129138 | 20.0000 | 21.19 |
| | 31 1,1,1-Trichloroethane | 97 | 4.740 | 4.740 | (0.984) | 180369 | 20.0000 | 19.55 |
| | 32 1,1-Dichloropropene | 75 | 4.920 | 4.920 | (0.886) | 162510 | 20.0000 | 19.64 |
| | 33 1,2-Dichloroethane | 62 | 5.179 | 5.179 | (0.933) | 211015 | 20.0000 | 20.95 |
| | 34 Carbon Tetrachloride | 117 | 4.913 | 4.913 | (0.885) | 150769 | 20.0000 | 20.37 |
| $ | 35 1,2-Dichloroethane-d4 | 65 | 5.100 | 5.100 | (1.059) | 147451 | 20.0000 | 21.21 |
| * | 36 1,4-Difluorobenzene | 114 | 5.554 | 5.554 | (1.000) | 1041961 | 50.0000 | |
| | 37 Benzene | 78 | 5.137 | 5.137 | (0.925) | 525339 | 20.0000 | 20.07 |
| | 38 Trichloroethene | 130 | 5.786 | 5.786 | (1.042) | 143886 | 20.0000 | 18.90 |
| | 39 Bromodichloromethane | 83 | 6.277 | 6.277 | (1.130) | 166894 | 20.0000 | 19.66 |
| | 41 2-Chloroethylvinyl ether | 63 | 6.577 | 6.577 | (1.184) | 1495 | 40.0000 | 40.04(M) |
| | 42 1,2-Dichloropropane | 63 | 6.011 | 6.011 | (1.082) | 140974 | 20.0000 | 20.39(M) |
| | 44 Dibromomethane | 93 | 6.120 | 6.120 | (1.102) | 92428 | 20.0000 | 19.42 |
| | 45 4-Methyl-2-Pentanone | 43 | 6.858 | 6.858 | (0.838) | 259947 | 40.0000 | 36.31 |
| | 46 cis-1,3-Dichloropropene | 75 | 6.693 | 6.693 | (1.205) | 160625 | 20.0000 | 17.44 |
| * | 47 Chlorobenzene-d5 | 117 | 8.185 | 8.185 | (1.000) | 1010922 | 50.0000 | |
| $ | 48 Toluene-d8 | 98 | 6.922 | 6.922 | (0.846) | 464351 | 20.0000 | 20.83 |
| | 50 Toluene | 91 | 6.982 | 6.982 | (0.853) | 579714 | 20.0000 | 21.35 |
| | 51 trans-1,3-Dichloropropene | 75 | 7.199 | 7.199 | (1.296) | 130809 | 20.0000 | 16.87 |
| | 52 2-Hexanone | 43 | 7.597 | 7.597 | (0.928) | 173213 | 40.0000 | 37.79 |
| | 53 1,1,2-Trichloroethane | 83 | 7.357 | 7.357 | (0.899) | 114140 | 20.0000 | 19.28 |
| | 54 1,3-Dichloropropane | 76 | 7.499 | 7.499 | (0.916) | 234596 | 20.0000 | 19.70 |
| | 55 Dibromochloromethane | 129 | 7.690 | 7.690 | (0.940) | 135776 | 20.0000 | 19.27 |
| | 56 Tetrachloroethene | 164 | 7.458 | 7.458 | (0.911) | 136247 | 20.0000 | 21.54 |
| | 57 1,2-Dibromoethane | 107 | 7.784 | 7.784 | (0.951) | 144305 | 20.0000 | 20.28 |
| | 58 1-Chlorohexane | 55 | 8.196 | 8.196 | (1.476) | 120323 | 20.0000 | 19.11 |
| | 59 Chlorobenzene | 112 | 8.208 | 8.208 | (1.003) | 404863 | 20.0000 | 20.16 |
| | 60 1,1,1,2-Tetrachloroethane | 131 | 8.283 | 8.283 | (1.012) | 135448 | 20.0000 | 20.07 |
| | 61 Ethylbenzene | 106 | 8.305 | 8.305 | (1.015) | 181087 | 20.0000 | 20.14 |
| | 62 m,p-Xylenes | 106 | 8.410 | 8.410 | (1.027) | 446127 | 40.0000 | 39.46 |
| | 63 o-Xylene | 106 | 8.747 | 8.747 | (1.069) | 212650 | 20.0000 | 18.09 |
| | 64 Styrene | 104 | 8.762 | 8.762 | (1.071) | 320982 | 20.0000 | 17.79 |
| | 66 Bromoform | 173 | 8.916 | 8.916 | (1.089) | 86866 | 20.0000 | 18.73 |
| | 67 Isopropylbenzene | 105 | 9.062 | 9.062 | (1.107) | 536621 | 20.0000 | 20.41 |
| | 68 1,1,2,2-Tetrachloroethane | 83 | 9.329 | 9.329 | (0.917) | 201873 | 20.0000 | 19.40 |
| $ | 69 4-Bromofluorobenzene | 95 | 9.194 | 9.194 | (1.123) | 208648 | 20.0000 | 21.90 |
| * | 70 1,4-Dichlorobenzene-d4 | 152 | 10.168 | 10.168 | (1.000) | 535575 | 50.0000 | |
| | 71 1,2,3-Trichloropropane | 75 | 9.362 | 9.362 | (0.921) | 166742 | 20.0000 | 18.80 |
| | 73 n-Propylbenzene | 91 | 9.411 | 9.411 | (0.926) | 564347 | 20.0000 | 19.01 |
| | 74 Bromobenzene | 156 | 9.317 | 9.317 | (0.916) | 172382 | 20.0000 | 20.25 |
| | 75 1,3,5-Trimethylbenzene | 105 | 9.561 | 9.561 | (0.940) | 394047 | 20.0000 | 19.56 |
| | 76 2-Chlorotoluene | 91 | 9.482 | 9.482 | (0.933) | 411236 | 20.0000 | 20.67 |
| | 77 4-Chlorotoluene | 91 | 9.576 | 9.576 | (0.942) | 473463 | 20.0000 | 20.28 |
| | 78 tert-Butylbenzene | 119 | 9.835 | 9.835 | (0.967) | 405132 | 20.0000 | 20.89 |
| | 79 1,2,4-Trimethylbenzene | 105 | 9.876 | 9.876 | (0.971) | 426506 | 20.0000 | 20.59 |
| | 81 sec-Butylbenzene | 105 | 10.022 | 10.022 | (0.986) | 487620 | 20.0000 | 19.80 |
| | 82 p-Isopropyltoluene | 119 | 10.146 | 10.146 | (0.998) | 379700 | 20.0000 | 19.43 |
| | 83 1,3-Dichlorobenzene | 146 | 10.116 | 10.116 | (0.995) | 313081 | 20.0000 | 20.85 |
| | 84 1,4-Dichlorobenzene | 146 | 10.191 | 10.191 | (1.002) | 326230 | 20.0000 | 19.34 |
| | 87 n-Butylbenzene | 91 | 10.491 | 10.491 | (1.032) | 345471 | 20.0000 | 19.47 |
| | 88 1,2-Dichlorobenzene | 146 | 10.506 | 10.506 | (1.033) | 309304 | 20.0000 | 20.14 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 89 | 1,2-Dibromo-3-Chloropropane | 155 | 11.165 | 11.165 (1.098) | 21321 | 20.0000 | 16.46 |
| 90 | 1,2,4-Trichlorobenzene | 180 | 11.859 | 11.859 (1.166) | 166476 | 20.0000 | 19.04 |

| | Compounds | QUANT SIG MASS | RT | EXP RT | REL RT | RESPONSE | AMOUNTS CAL-AMT ( ug/l) | ON-COL ( ug/l) |
|---|---|---|---|---|---|---|---|---|
| | 91 Hexachlorobutadiene | 225 | 11.998 | 11.998 | (1.180) | 81309 | 20.0000 | 20.73 |
| | 92 Naphthalene | 128 | 12.069 | 12.069 | (1.187) | 371874 | 20.0000 | 17.42 |
| | 93 1,2,3-Trichlorobenzene | 180 | 12.267 | 12.267 | (1.206) | 171871 | 20.0000 | 20.71 |
| M | 94 1,2-Dichloroethylene (total) | 96 | | | | 297595 | 40.0000 | |
| M | 95 Xylenes (total) | 106 | | | | 658777 | 60.0000 | |
| | 135 1,4-Dioxane | 88 | 6.172 | 6.172 | (1.282) | 36081 | 400.000 | 369.52(M) |
| | 141 Cyclohexane | 56 | 4.781 | 4.781 | (0.993) | 197210 | 20.0000 | 22.34 |
| | 138 Freon TF | 101 | 2.337 | 2.337 | (0.485) | 120741 | 20.0000 | 22.59 |
| | 140 1,3-Butadiene | 54 | 1.404 | 1.404 | (0.292) | 154972 | 20.0000 | 19.52 |
| | 147 Methylcyclohexane | 55 | 5.951 | 5.951 | (1.072) | 298411 | 20.0000 | 19.53 |
| | 146 Methyl Acetate | 43 | 2.716 | 2.716 | (0.564) | 142578 | 20.0000 | 17.50 |
| | 148 Tert-Butyl alcohol | 59 | 2.967 | 2.967 | (0.616) | 299567 | 400.000 | 363.96 |
| | 149 Isopropyl Alcohol | 45 | 2.562 | 2.562 | (0.532) | 207589 | 400.000 | 351.56 |

QC Flag Legend

M - Compound response manually integrated.


Y (x10^6)
Min
-Chloromethane
-Vinyl Chloride+
-Acetaldehyde
-Bromomethane
-Chloroethane
-Trichlorofluoromethane
-Ethanol+
-Acrolein
-1,1-Dichloroethene+
-Acetone
-Carbon Disulfide+
-Methyl Acetate+
-Methylene Chloride
-Tert-butyl alcohol
-Acrylonitrile+
-n-Hexane+
-1,1-Dichloroethane
-Vinyl Acetate+
-tert-Butyl ethyl ether
-2,2-Dichloropropane+
-2-Butanone
-Propionitrile+
-Bromochloromethane+
-Chloroform+
-Pentafluorobenzene+
-1,1-Dichloropropene+
-1,2-Dichloroethane+
-Isobutyl Alcohol+
-1,4-Difluorobenzene
-Trichloroethene+
-Methylcyclohexane+
-1,2-Dichloropropane
-Dibromomethane+
-Bromodichloromethane
-2-Chloroethylvinyl ether
-cis-1,3-Dichloropropene+
-Dimethyl Disulfide
-4-Methyl-2-Pentanone
-Toluene-d8
-Toluene
-trans-1,3-Dichloropropene+
-Ethyl Methacrylate
1,1,2-Trichloroethane
-1,3-Dichloropropane+
-2-Hexanone
-Dibromochloromethane+
-1,2-Dibromoethane
-1,1,1,2-Tetrachloroethane+
-m,p-Xylene
-Fluorobenzene-d5+
-o-Xylene+
-Bromoform
-Isopropylbenzene
-4-Bromofluorobenzene+
-1,1,2,2-Tetrachloroethane+
-n-Propylbenzene+
-2-Chlorotoluene
-1,3,5-Trimethylbenzene+
-Butyl methacrylate
-alpha-Methylstyrene
-tert-Butylbenzene+
-sec-Butylbenzene
-Benzyl Chloride
1,4-Dichlorobenzene-d4+
-n-Butylbenzene+
-Hexachloroethane
-1,2-Dibromo-3-Chloropropa
-1,2,4-Trichlorobenzene
-Hexachlorobutadiene
-Naphthalene+
-1,2,3-Trichlorobenzene
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Data File: \\NAHSTWS005\Target\chem\voa9.i\U230914.b\U091407.D
Date : 14-SEP-2023 18:00
Client ID: VSTD020
Sample Info: VSTD020;VSTD020;1;6;
Purge Volume: 5.0
Column phase: DB624
Instrument: VOA9.i
Operator: PC
Column diameter: 0.18
Page 1

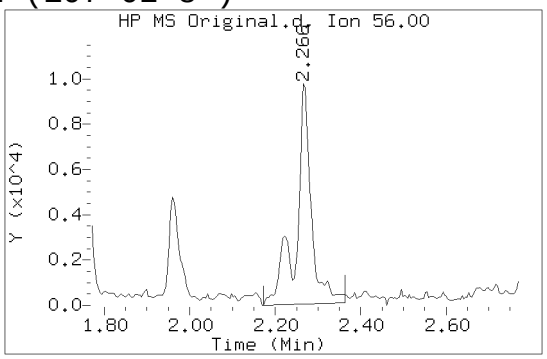
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LabSampID : VSTD020

## Acrolein (107-02-8 )

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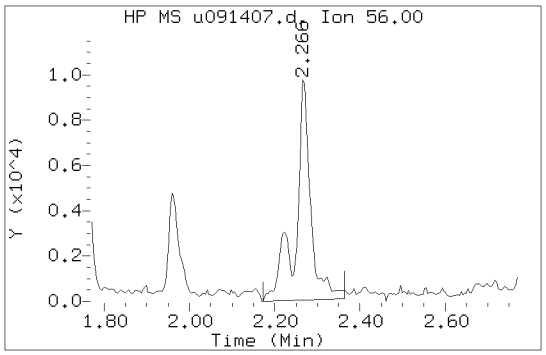
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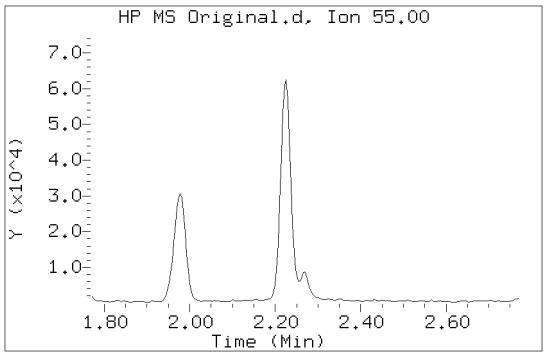

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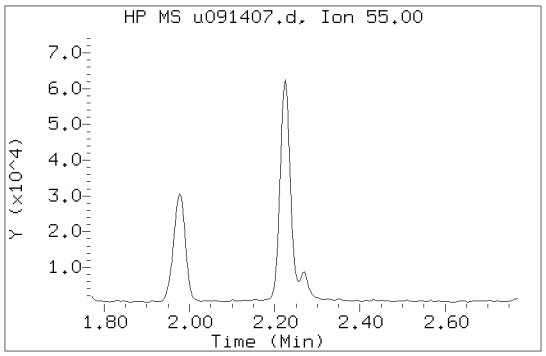

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AFTER

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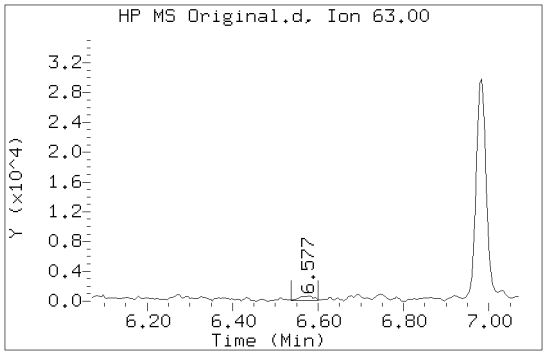



## 2-Chloroethylvinyl ether (110-75-8)

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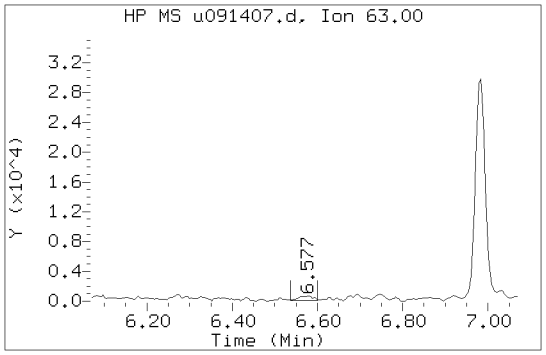
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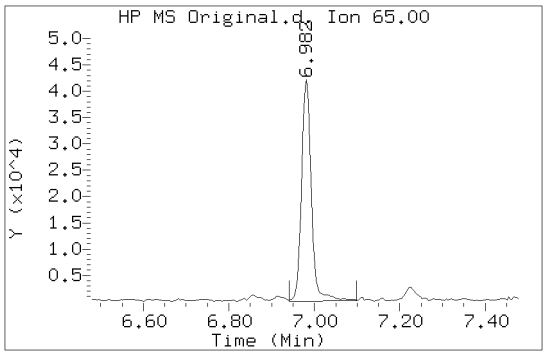

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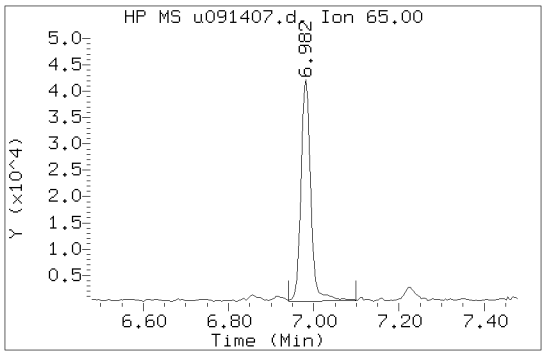

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AFTER

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18-Sep-2023
12:30
linh
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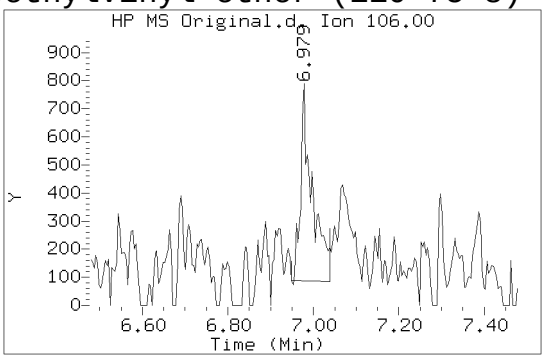
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InstruID : VOA9.i
LabSampID : VSTD020

## 2-Chloroethylvinyl ether (110-75-8)

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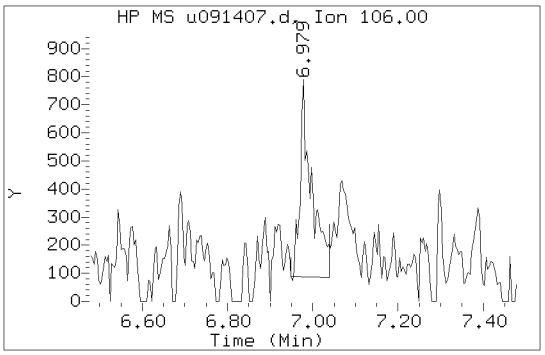
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**AFTER**

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HEIGHT
701
18-Sep-2023
12:30
linh
pham

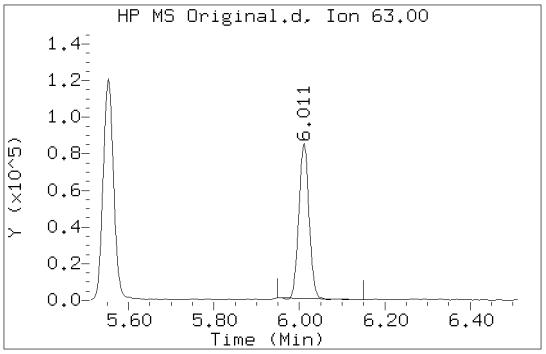



## 1,2-Dichloropropane (78-87-5)

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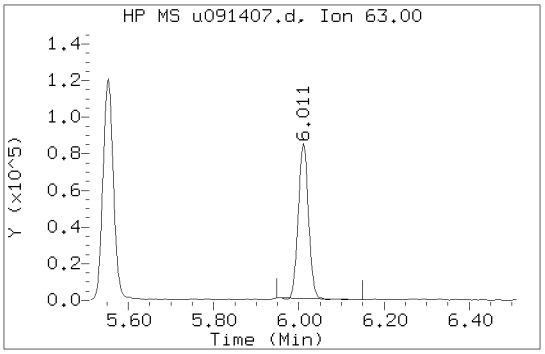
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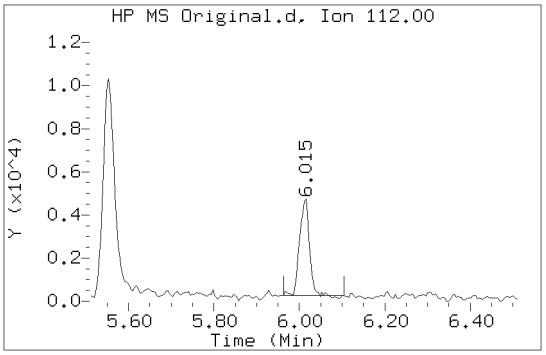

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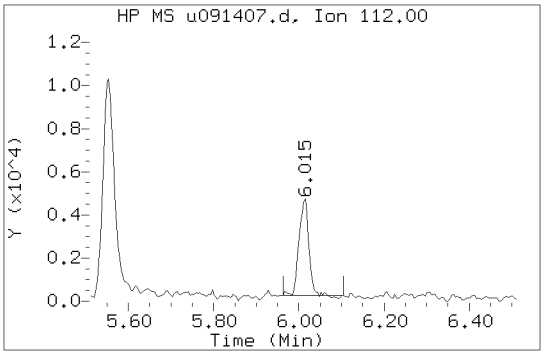

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**AFTER**

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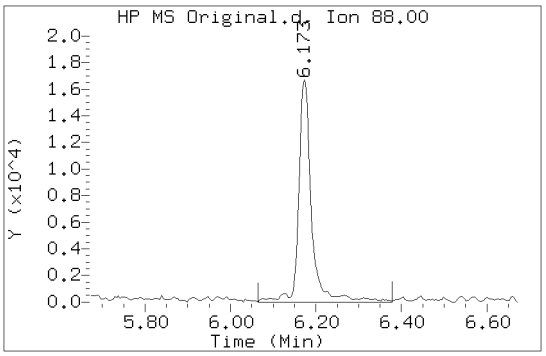



## 1,4-Dioxane ()

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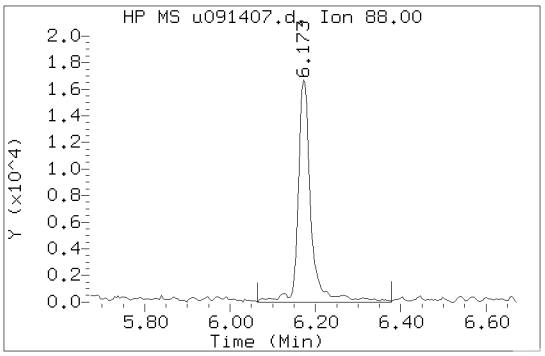
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**AFTER**

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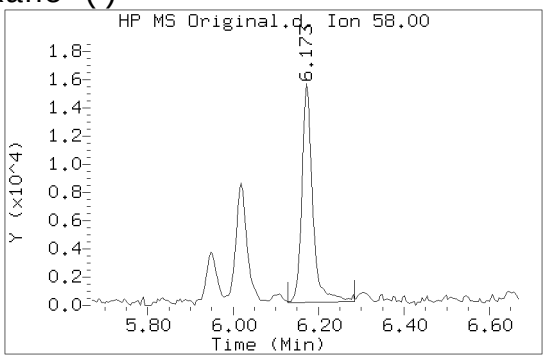
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InstruID : VOA9.i
LabSampID : VSTD020

1,4-Dioxane ()

Reason Code:

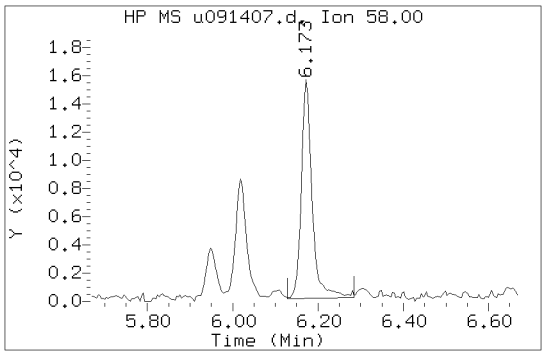
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pham



Data File: \\NAHSTWS005\Target\chem\voa9.i\U230914.b\U091408.D  Page 1
Report Date: 18-Sep-2023 12:31

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa9.i\U230914.b\U091408.D
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Inj Date  : 14-SEP-2023 18:22
Operator  : PC  Inst ID: VOA9.i
Smp Info  : VSTD050;VSTD050;1;7;
Misc Info : V9;WATER;0;1;
Comment   :
Method    : \\NAHSTWS005\Target\chem\voa9.i\U230914.b\8260C.m
Meth Date : 18-Sep-2023 12:31 VOA9.i  Quant Type: ISTD
Cal Date  : 14-SEP-2023 18:00  Cal File: U091407.D
Als bottle: 9  Calibration Sample, Level: 7
Dil Factor: 1.00000
Integrator: HP RTE  Compound Sublist: 08260V9.sub
Target Version:  4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

| Name | Value | Description |
|---|---|---|
| DF | 1.000 | Dilution Factor |
| Uf | 5.000 | ng unit correction factor |
| Vo | 5.000 | sample purged |
| Cpnd Variable | | Local Compound Variable |

| | Compounds | QUANT SIG MASS | RT | EXP RT | REL RT | RESPONSE | AMOUNTS CAL-AMT ( ug/l) | ON-COL ( ug/l) |
|---|---|---|---|---|---|---|---|---|
| * 1 | Pentafluorobenzene | 168 | 4.811 | 4.811 | (1.000) | 741130 | 50.0000 | |
| 2 | Dichlorodifluoromethane | 85 | 1.160 | 1.160 | (0.241) | 365999 | 50.0000 | 45.16 |
| 3 | Chloromethane | 50 | 1.291 | 1.291 | (0.268) | 679763 | 50.0000 | 49.67 |
| 5 | Vinyl Chloride | 62 | 1.374 | 1.374 | (0.286) | 436920 | 50.0000 | 46.44 |
| 6 | Bromomethane | 94 | 1.614 | 1.614 | (0.335) | 210271 | 50.0000 | 45.85 |
| 7 | Chloroethane | 64 | 1.696 | 1.696 | (0.353) | 302811 | 50.0000 | 43.76 |
| 8 | Trichlorofluoromethane | 101 | 1.891 | 1.891 | (0.393) | 529050 | 50.0000 | 43.83 |
| 9 | Acrolein | 56 | 2.259 | 2.259 | (0.469) | 53331 | 100.000 | 83.86(M) |
| 10 | Acetone | 43 | 2.405 | 2.405 | (0.500) | 343448 | 100.000 | 91.17 |
| 11 | 1,1-Dichloroethene | 96 | 2.330 | 2.330 | (0.484) | 318631 | 50.0000 | 43.43 |
| 15 | Iodomethane | 142 | 2.465 | 2.465 | (0.512) | 379247 | 100.000 | 89.45 |
| 16 | Acrylonitrile | 53 | 3.061 | 3.061 | (0.636) | 385904 | 100.000 | 89.26 |
| 17 | Methylene Chloride | 84 | 2.791 | 2.791 | (0.580) | 422454 | 50.0000 | 45.54 |
| 18 | Methyl tert-butyl ether | 73 | 3.076 | 3.076 | (0.639) | 945327 | 50.0000 | 45.38 |
| 19 | Carbon Disulfide | 76 | 2.517 | 2.517 | (0.523) | 1835693 | 100.000 | 92.63 |
| 20 | trans-1,2-Dichloroethene | 96 | 3.053 | 3.053 | (0.635) | 355559 | 50.0000 | 46.20 |
| 21 | Vinyl Acetate | 43 | 3.604 | 3.604 | (0.749) | 2577244 | 100.000 | 94.66 |
| 22 | 1,1-Dichloroethane | 63 | 3.511 | 3.511 | (0.730) | 696242 | 50.0000 | 45.11 |
| 24 | 2-Butanone | 43 | 4.264 | 4.264 | (0.886) | 394292 | 100.000 | 87.77 |
| 26 | 2,2-Dichloropropane | 77 | 4.178 | 4.178 | (0.868) | 420338 | 50.0000 | 44.97 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 27 cis-1,2-Dichloroethene | 96 | 4.193 | 4.193 (0.871) | 407662 | 50.0000 | 46.33 |
| 28 Chloroform | 83 | 4.568 | 4.568 (0.949) | 685814 | 50.0000 | 45.76 |

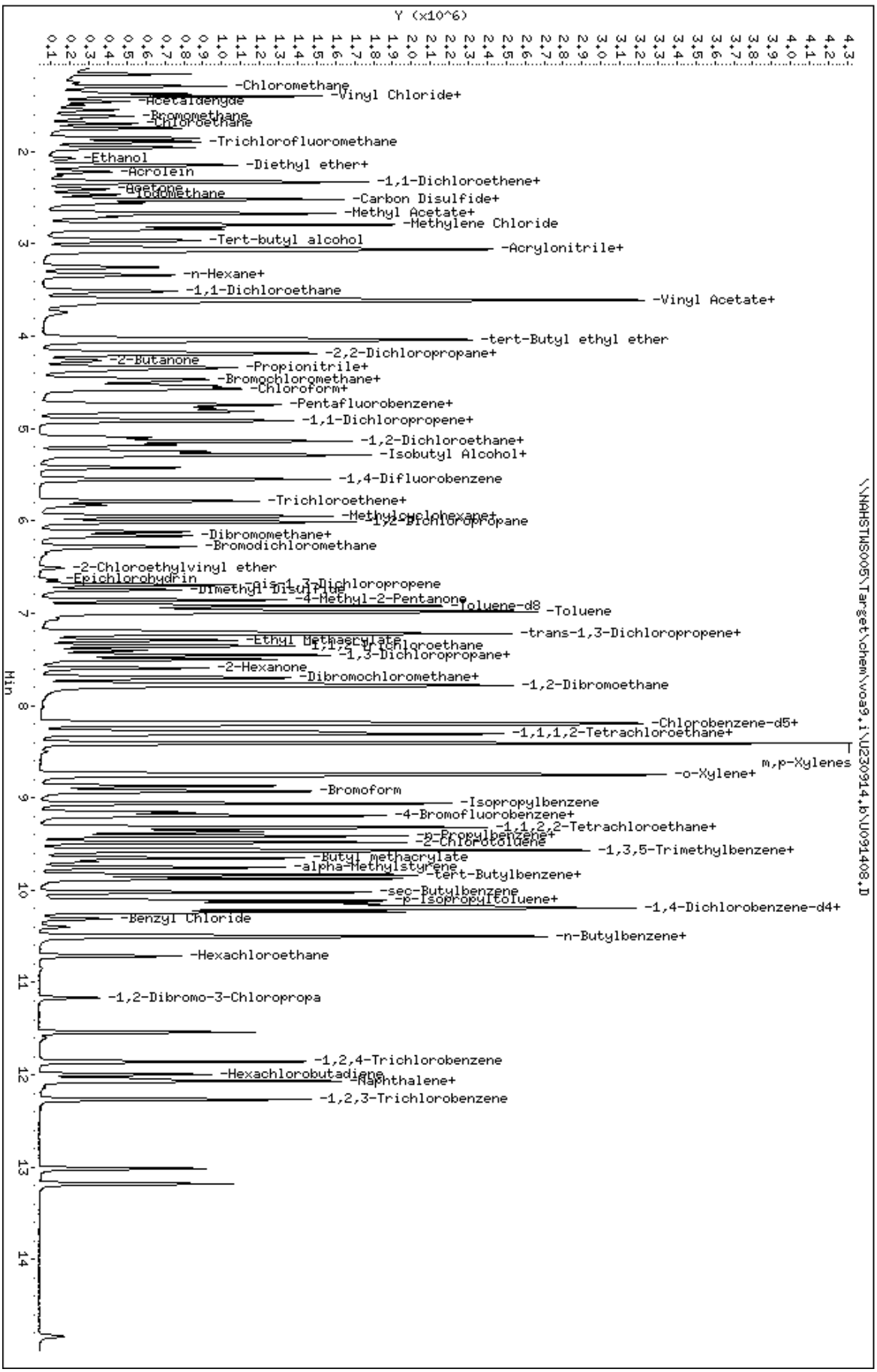
| | Compounds | QUANT SIG MASS | RT | EXP RT | REL RT | RESPONSE | AMOUNTS CAL-AMT ( ug/l) | ON-COL ( ug/l) |
|---|---|---|---|---|---|---|---|---|
| | 29 Bromochloromethane | 128 | 4.467 | 4.467 | (0.928) | 210112 | 50.0000 | 45.56 |
| $ | 30 Dibromofluoromethane | 113 | 4.744 | 4.744 | (0.986) | 328369 | 50.0000 | 48.56 |
| | 31 1,1,1-Trichloroethane | 97 | 4.740 | 4.740 | (0.985) | 455322 | 50.0000 | 44.74 |
| | 32 1,1-Dichloropropene | 75 | 4.916 | 4.916 | (0.886) | 409238 | 50.0000 | 44.95 |
| | 33 1,2-Dichloroethane | 62 | 5.175 | 5.175 | (0.932) | 531037 | 50.0000 | 47.90 |
| | 34 Carbon Tetrachloride | 117 | 4.909 | 4.909 | (0.885) | 373929 | 50.0000 | 45.90 |
| $ | 35 1,2-Dichloroethane-d4 | 65 | 5.096 | 5.096 | (1.059) | 379658 | 50.0000 | 49.70 |
| * | 36 1,4-Difluorobenzene | 114 | 5.550 | 5.550 | (1.000) | 1146840 | 50.0000 | |
| | 37 Benzene | 78 | 5.134 | 5.134 | (0.925) | 1369056 | 50.0000 | 47.52 |
| | 38 Trichloroethene | 130 | 5.786 | 5.786 | (1.043) | 370707 | 50.0000 | 44.24 |
| | 39 Bromodichloromethane | 83 | 6.277 | 6.277 | (1.131) | 452831 | 50.0000 | 48.46 |
| | 41 2-Chloroethylvinyl ether | 63 | 6.558 | 6.558 | (1.182) | 3835 | 100.000 | 92.64(MH) |
| | 42 1,2-Dichloropropane | 63 | 6.007 | 6.007 | (1.082) | 378563 | 50.0000 | 49.76(M) |
| | 44 Dibromomethane | 93 | 6.120 | 6.120 | (1.103) | 252788 | 50.0000 | 48.26 |
| | 45 4-Methyl-2-Pentanone | 43 | 6.855 | 6.855 | (0.837) | 766488 | 100.000 | 93.58 |
| | 46 cis-1,3-Dichloropropene | 75 | 6.690 | 6.690 | (1.205) | 501695 | 50.0000 | 43.71 |
| * | 47 Chlorobenzene-d5 | 117 | 8.185 | 8.185 | (1.000) | 1105862 | 50.0000 | |
| $ | 48 Toluene-d8 | 98 | 6.922 | 6.922 | (0.846) | 1240380 | 50.0000 | 50.87 |
| | 50 Toluene | 91 | 6.978 | 6.978 | (0.853) | 1488148 | 50.0000 | 50.11 |
| | 51 trans-1,3-Dichloropropene | 75 | 7.196 | 7.196 | (1.296) | 422161 | 50.0000 | 44.86 |
| | 52 2-Hexanone | 43 | 7.593 | 7.593 | (0.928) | 507183 | 100.000 | 101.16 |
| | 53 1,1,2-Trichloroethane | 83 | 7.353 | 7.353 | (0.898) | 307028 | 50.0000 | 47.41 |
| | 54 1,3-Dichloropropane | 76 | 7.499 | 7.499 | (0.916) | 618528 | 50.0000 | 47.49 |
| | 55 Dibromochloromethane | 129 | 7.690 | 7.690 | (0.940) | 389873 | 50.0000 | 50.58 |
| | 56 Tetrachloroethene | 164 | 7.454 | 7.454 | (0.911) | 314500 | 50.0000 | 45.45 |
| | 57 1,2-Dibromoethane | 107 | 7.784 | 7.784 | (0.951) | 383860 | 50.0000 | 49.32 |
| | 58 1-Chlorohexane | 55 | 8.197 | 8.197 | (1.477) | 266519 | 50.0000 | 38.46 |
| | 59 Chlorobenzene | 112 | 8.208 | 8.208 | (1.003) | 1013371 | 50.0000 | 46.14 |
| | 60 1,1,1,2-Tetrachloroethane | 131 | 8.283 | 8.283 | (1.012) | 351707 | 50.0000 | 47.64 |
| | 61 Ethylbenzene | 106 | 8.305 | 8.305 | (1.015) | 452946 | 50.0000 | 46.05 |
| | 62 m,p-Xylenes | 106 | 8.406 | 8.406 | (1.027) | 1109880 | 100.000 | 89.74 |
| | 63 o-Xylene | 106 | 8.748 | 8.748 | (1.069) | 564834 | 50.0000 | 43.94 |
| | 64 Styrene | 104 | 8.759 | 8.759 | (1.070) | 870956 | 50.0000 | 44.13(M) |
| | 66 Bromoform | 173 | 8.920 | 8.920 | (1.090) | 248786 | 50.0000 | 43.27 |
| | 67 Isopropylbenzene | 105 | 9.062 | 9.062 | (1.107) | 1270310 | 50.0000 | 41.73 |
| | 68 1,1,2,2-Tetrachloroethane | 83 | 9.329 | 9.329 | (0.917) | 526118 | 50.0000 | 49.86 |
| $ | 69 4-Bromofluorobenzene | 95 | 9.194 | 9.194 | (1.123) | 520817 | 50.0000 | 48.83 |
| * | 70 1,4-Dichlorobenzene-d4 | 152 | 10.168 | 10.168 | (1.000) | 543081 | 50.0000 | |
| | 71 1,2,3-Trichloropropane | 75 | 9.362 | 9.362 | (0.921) | 452929 | 50.0000 | 50.37 |
| | 73 n-Propylbenzene | 91 | 9.411 | 9.411 | (0.926) | 1319916 | 50.0000 | 39.91 |
| | 74 Bromobenzene | 156 | 9.317 | 9.317 | (0.916) | 426954 | 50.0000 | 49.46 |
| | 75 1,3,5-Trimethylbenzene | 105 | 9.561 | 9.561 | (0.940) | 921488 | 50.0000 | 45.11 |
| | 76 2-Chlorotoluene | 91 | 9.482 | 9.482 | (0.933) | 971738 | 50.0000 | 48.18 |
| | 77 4-Chlorotoluene | 91 | 9.576 | 9.576 | (0.942) | 1115512 | 50.0000 | 47.14 |
| | 78 tert-Butylbenzene | 119 | 9.835 | 9.835 | (0.967) | 876778 | 50.0000 | 44.60 |
| | 79 1,2,4-Trimethylbenzene | 105 | 9.876 | 9.876 | (0.971) | 945334 | 50.0000 | 45.02 |
| | 81 sec-Butylbenzene | 105 | 10.022 | 10.022 | (0.986) | 1078548 | 50.0000 | 40.46 |
| | 82 p-Isopropyltoluene | 119 | 10.146 | 10.146 | (0.998) | 858100 | 50.0000 | 40.36 |
| | 83 1,3-Dichlorobenzene | 146 | 10.112 | 10.112 | (0.994) | 703640 | 50.0000 | 46.22 |
| | 84 1,4-Dichlorobenzene | 146 | 10.191 | 10.191 | (1.002) | 741044 | 50.0000 | 43.32 |
| | 87 n-Butylbenzene | 91 | 10.491 | 10.491 | (1.032) | 771155 | 50.0000 | 39.69 |
| | 88 1,2-Dichlorobenzene | 146 | 10.506 | 10.506 | (1.033) | 707974 | 50.0000 | 45.47 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 89 | 1,2-Dibromo-3-Chloropropane | 155 | 11.169 | 11.169 (1.098) | 63686 | 50.0000 | 48.51 |
| 90 | 1,2,4-Trichlorobenzene | 180 | 11.859 | 11.859 (1.166) | 429754 | 50.0000 | 48.48 |

| | | | | | | | AMOUNTS | |
|---|---|---|---|---|---|---|---|---|
| | | QUANT SIG | | | | | CAL-AMT | ON-COL |
| | Compounds | MASS | RT | EXP RT | REL RT | RESPONSE | ( ug/l) | ( ug/l) |
| | 91 Hexachlorobutadiene | 225 | 11.998 | 11.998 | (1.180) | 160600 | 50.0000 | 40.38 |
| | 92 Naphthalene | 128 | 12.065 | 12.065 | (1.187) | 1096628 | 50.0000 | 45.45 |
| | 93 1,2,3-Trichlorobenzene | 180 | 12.268 | 12.268 | (1.206) | 429482 | 50.0000 | 51.03 |
| M | 94 1,2-Dichloroethylene (total) | 96 | | | | 763221 | 100.000 | |
| M | 95 Xylenes (total) | 106 | | | | 1674714 | 150.000 | |
| | 135 1,4-Dioxane | 88 | 6.168 | 6.168 | (1.282) | 99629 | 1000.00 | 924.81 |
| | 141 Cyclohexane | 56 | 4.778 | 4.778 | (0.993) | 417496 | 50.0000 | 41.77 |
| | 138 Freon TF | 101 | 2.330 | 2.330 | (0.484) | 261309 | 50.0000 | 43.19 |
| | 140 1,3-Butadiene | 54 | 1.400 | 1.400 | (0.291) | 406614 | 50.0000 | 46.43 |
| | 147 Methylcyclohexane | 55 | 5.947 | 5.947 | (1.072) | 803104 | 50.0000 | 47.77 |
| | 146 Methyl Acetate | 43 | 2.708 | 2.708 | (0.563) | 393644 | 50.0000 | 43.80 |
| | 148 Tert-Butyl alcohol | 59 | 2.963 | 2.963 | (0.616) | 813074 | 1000.00 | 895.35 |
| | 149 Isopropyl Alcohol | 45 | 2.555 | 2.555 | (0.531) | 587634 | 1000.00 | 902.01 |

QC Flag Legend

M - Compound response manually integrated.
H - Operator selected an alternate compound hit.




Data File: \\NAHSTNS005\Target\chem\voa9,i\U230914,b\U091408,D
Date : 14-SEP-2023 18:22
Client ID: VSTD050
Sample Info: VSTD050;VSTD050;1;7;
Purge Volume: 5.0
Column phase: DB624

Instrument: VOA9,i
Operator: PC
Column diameter: 0.18

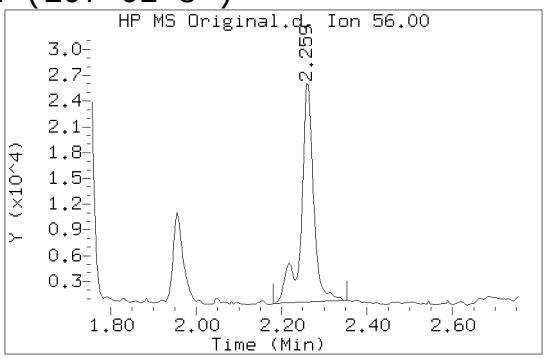
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Inj Date : 14-SEP-2023 18:22
InstruID : VOA9.i
LabSampID : VSTD050

## Acrolein (107-02-8 )

Reason Code:

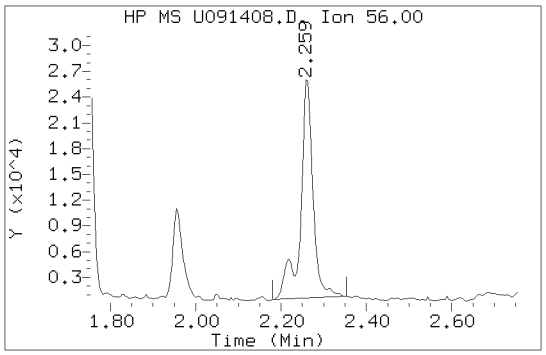
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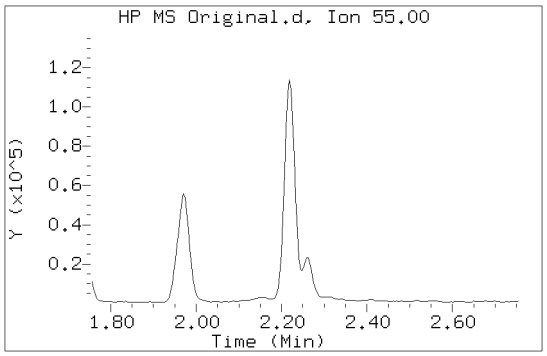

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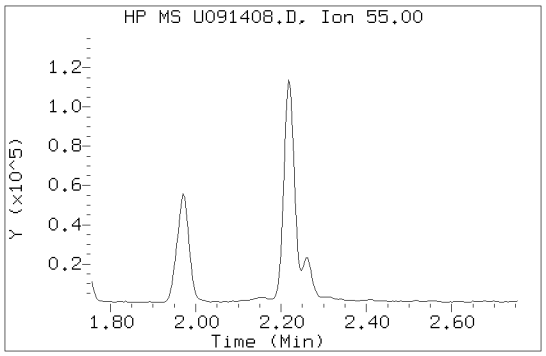

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AFTER

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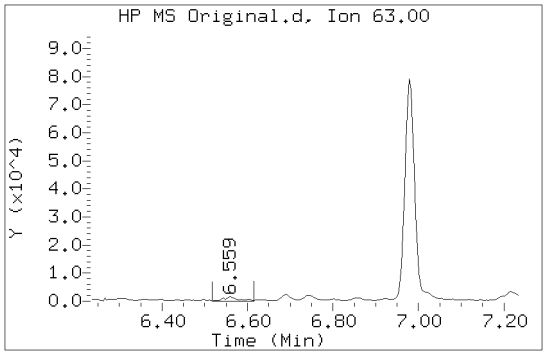



## 2-Chloroethylvinyl ether (110-75-8)

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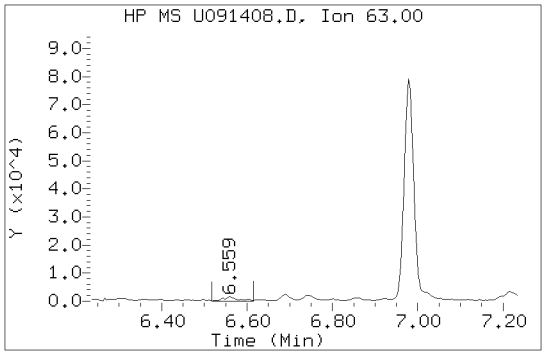
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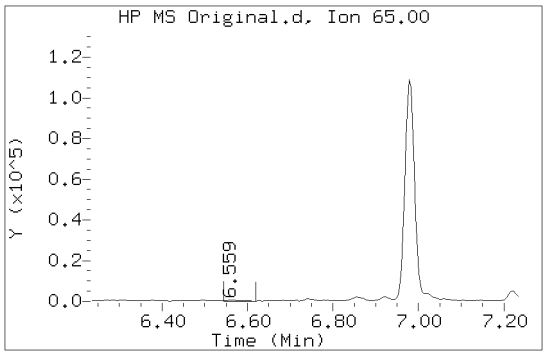

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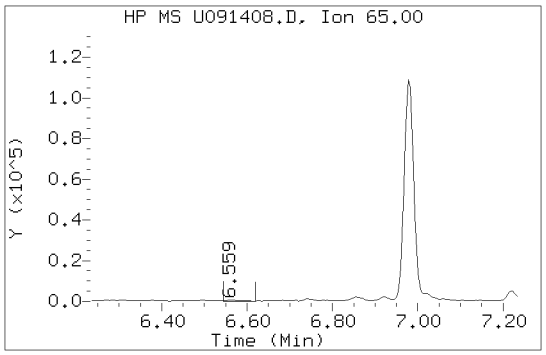

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AFTER

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464
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12:30
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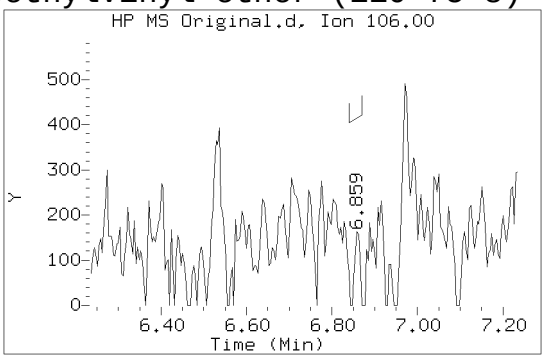
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Inj Date : 14-SEP-2023 18:22
InstruID : VOA9.i
LabSampID : VSTD050

## 2-Chloroethylvinyl ether (110-75-8)

Reason Code:

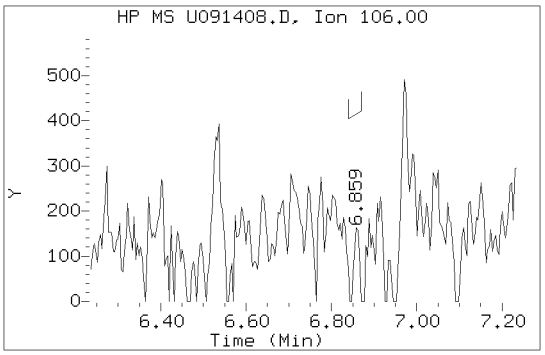
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AFTER

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18-Sep-2023
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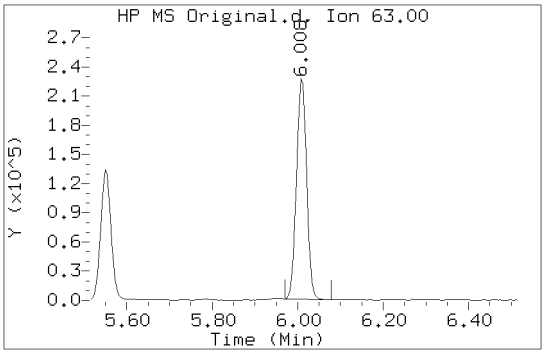



## 1,2-Dichloropropane (78-87-5)

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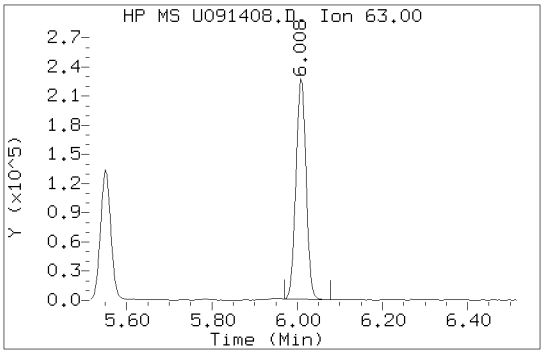
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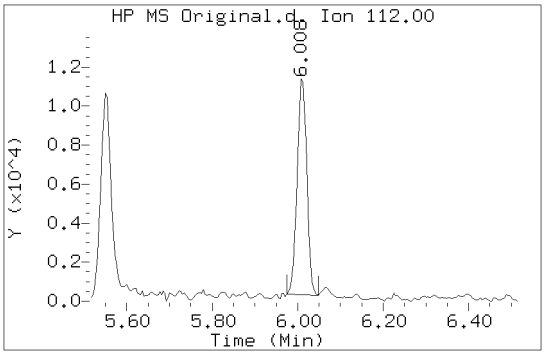

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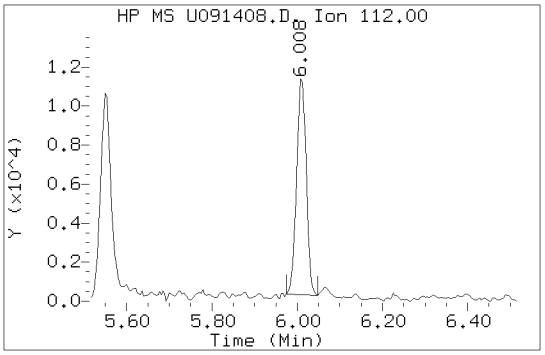

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AFTER

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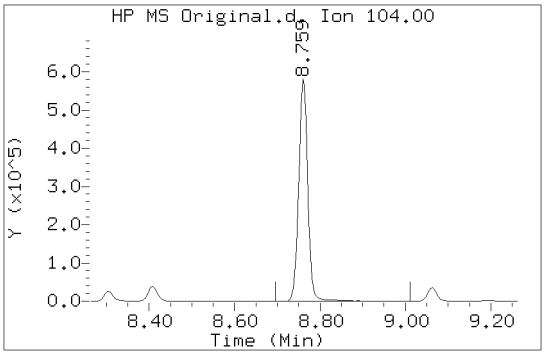



## Styrene (100-42-5)

Reason Code:

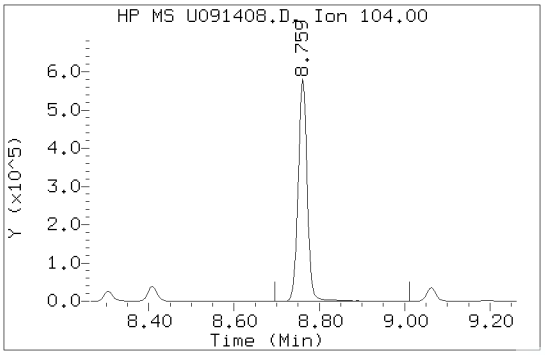
BEFORE

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AFTER

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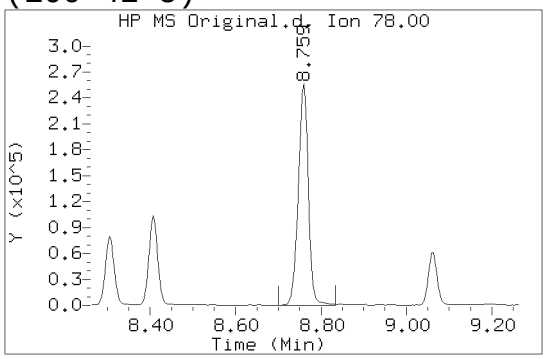
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InstruID : VOA9.i
LabSampID : VSTD050

Styrene (100-42-5)

Reason Code:

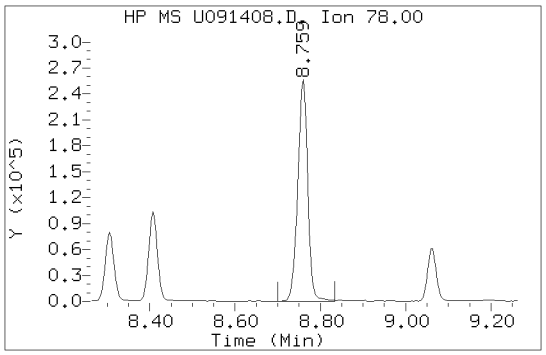
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AFTER

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Report Date: 18-Sep-2023 12:31

ALS Laboratory Group

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Inj Date  : 14-SEP-2023 18:44
Operator  : PC  Inst ID: VOA9.i
Smp Info  : VSTD100;VSTD100;1;8;
Misc Info : V9;WATER;0;1;
Comment   :
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Meth Date : 18-Sep-2023 12:31 VOA9.i  Quant Type: ISTD
Cal Date  : 14-SEP-2023 18:22  Cal File: U091408.D
Als bottle: 10  Calibration Sample, Level: 8
Dil Factor: 1.00000
Integrator: HP RTE  Compound Sublist: 08260V9.sub
Target Version:  4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

| Name | Value | Description |
|---|---|---|
| DF | 1.000 | Dilution Factor |
| Uf | 5.000 | ng unit correction factor |
| Vo | 5.000 | sample purged |
| Cpnd Variable | | Local Compound Variable |

| | Compounds | QUANT SIG MASS | RT | EXP RT | REL RT | RESPONSE | AMOUNTS CAL-AMT ( ug/l) | ON-COL ( ug/l) |
|---|---|---|---|---|---|---|---|---|
| * 1 | Pentafluorobenzene | 168 | 4.815 | 4.815 | (1.000) | 742187 | 50.0000 | |
| 2 | Dichlorodifluoromethane | 85 | 1.164 | 1.164 | (0.242) | 823221 | 100.000 | 99.77 |
| 3 | Chloromethane | 50 | 1.295 | 1.295 | (0.269) | 1410566 | 100.000 | 103.98 |
| 5 | Vinyl Chloride | 62 | 1.374 | 1.374 | (0.285) | 986224 | 100.000 | 104.67 |
| 6 | Bromomethane | 94 | 1.614 | 1.614 | (0.335) | 434819 | 100.000 | 94.21 |
| 7 | Chloroethane | 64 | 1.696 | 1.696 | (0.352) | 674738 | 100.000 | 97.37 |
| 8 | Trichlorofluoromethane | 101 | 1.895 | 1.895 | (0.394) | 1245989 | 100.000 | 103.08 |
| 9 | Acrolein | 56 | 2.262 | 2.262 | (0.470) | 114655 | 200.000 | 180.04(M) |
| 10 | Acetone | 43 | 2.409 | 2.409 | (0.500) | 787149 | 200.000 | 211.45(A) |
| 11 | 1,1-Dichloroethene | 96 | 2.334 | 2.334 | (0.485) | 735651 | 100.000 | 100.14 |
| 15 | Iodomethane | 142 | 2.469 | 2.469 | (0.513) | 938697 | 200.000 | 198.45 |
| 16 | Acrylonitrile | 53 | 3.065 | 3.065 | (0.636) | 832299 | 200.000 | 192.24 |
| 17 | Methylene Chloride | 84 | 2.795 | 2.795 | (0.580) | 885454 | 100.000 | 93.47 |
| 18 | Methyl tert-butyl ether | 73 | 3.080 | 3.080 | (0.640) | 2115315 | 100.000 | 101.41 |
| 19 | Carbon Disulfide | 76 | 2.521 | 2.521 | (0.524) | 4187477 | 200.000 | 211.02 |
| 20 | trans-1,2-Dichloroethene | 96 | 3.057 | 3.057 | (0.635) | 790832 | 100.000 | 102.61 |
| 21 | Vinyl Acetate | 43 | 3.604 | 3.604 | (0.749) | 5722144 | 200.000 | 209.87 |
| 22 | 1,1-Dichloroethane | 63 | 3.514 | 3.514 | (0.730) | 1523604 | 100.000 | 98.58 |
| 24 | 2-Butanone | 43 | 4.264 | 4.264 | (0.886) | 892012 | 200.000 | 198.28 |
| 26 | 2,2-Dichloropropane | 77 | 4.182 | 4.182 | (0.868) | 987674 | 100.000 | 105.53 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 27 cis-1,2-Dichloroethene | 96 | 4.197 | 4.197 (0.872) | 885739 | 100.000 | 100.52 |
| 28 Chloroform | 83 | 4.572 | 4.572 (0.949) | 1471908 | 100.000 | 98.08 |

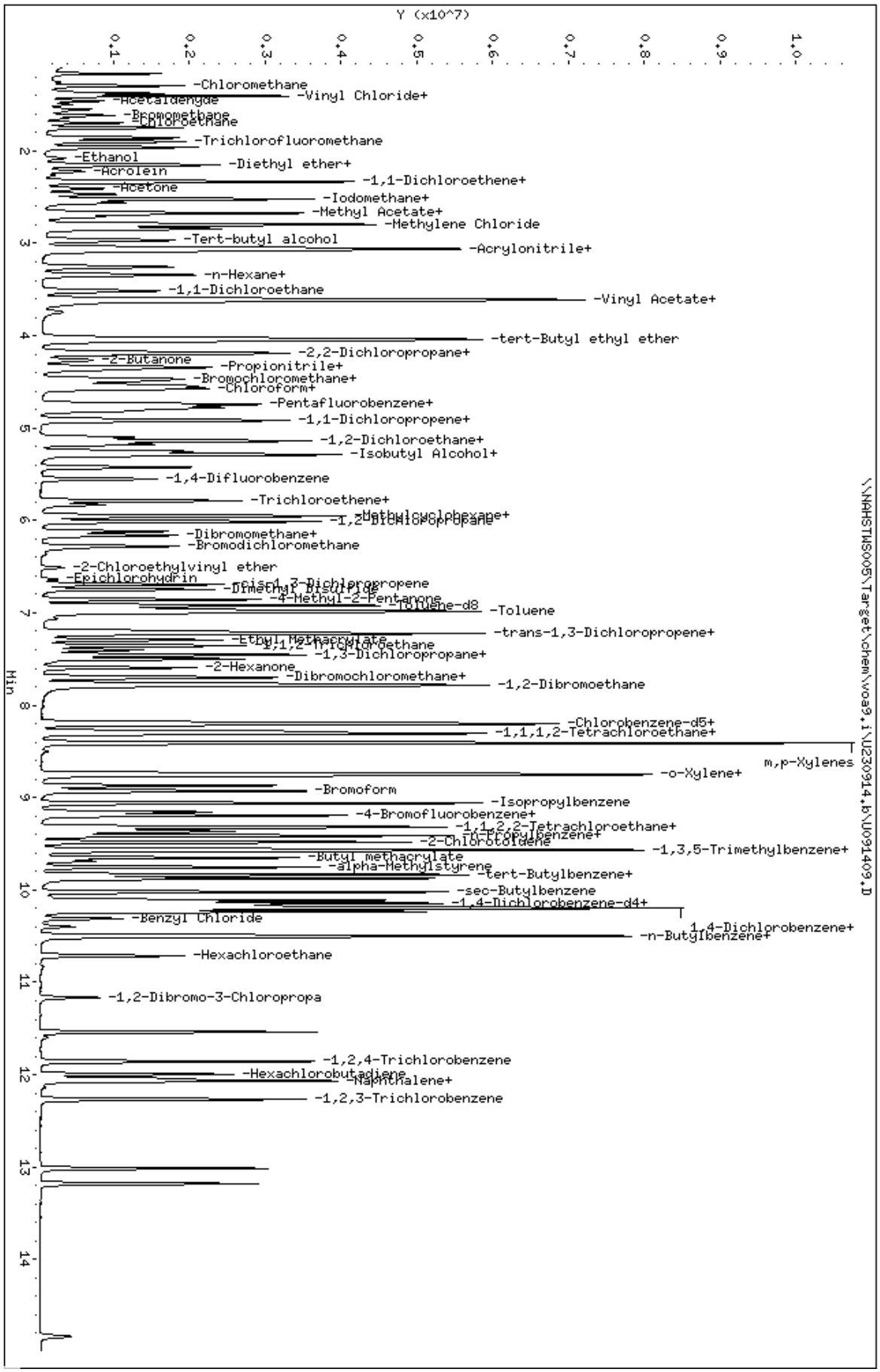
| | Compounds | QUANT SIG MASS | RT | EXP RT | REL RT | RESPONSE | AMOUNTS CAL-AMT ( ug/l) | ON-COL ( ug/l) |
|---|---|---|---|---|---|---|---|---|
| | 29 Bromochloromethane | 128 | 4.470 | 4.470 | (0.928) | 442434 | 100.000 | 95.81 |
| $ | 30 Dibromofluoromethane | 113 | 4.748 | 4.748 | (0.986) | 685902 | 100.000 | 101.07 |
| | 31 1,1,1-Trichloroethane | 97 | 4.740 | 4.740 | (0.984) | 1083271 | 100.000 | 106.29 |
| | 32 1,1-Dichloropropene | 75 | 4.920 | 4.920 | (0.886) | 960118 | 100.000 | 105.11 |
| | 33 1,2-Dichloroethane | 62 | 5.175 | 5.175 | (0.932) | 1091404 | 100.000 | 98.13 |
| | 34 Carbon Tetrachloride | 117 | 4.909 | 4.909 | (0.884) | 938140 | 100.000 | 114.80 |
| $ | 35 1,2-Dichloroethane-d4 | 65 | 5.096 | 5.096 | (1.058) | 775916 | 100.000 | 101.59 |
| * | 36 1,4-Difluorobenzene | 114 | 5.554 | 5.554 | (1.000) | 1150587 | 50.0000 | |
| | 37 Benzene | 78 | 5.138 | 5.138 | (0.925) | 2956564 | 100.000 | 102.30 |
| | 38 Trichloroethene | 130 | 5.786 | 5.786 | (1.042) | 833703 | 100.000 | 99.18 |
| | 39 Bromodichloromethane | 83 | 6.277 | 6.277 | (1.130) | 994877 | 100.000 | 106.14 |
| | 41 2-Chloroethylvinyl ether | 63 | 6.562 | 6.562 | (1.182) | 8728 | 200.000 | 209.49(M) |
| | 42 1,2-Dichloropropane | 63 | 6.011 | 6.011 | (1.082) | 791531 | 100.000 | 103.71(M) |
| | 44 Dibromomethane | 93 | 6.120 | 6.120 | (1.102) | 515227 | 100.000 | 98.05 |
| | 45 4-Methyl-2-Pentanone | 43 | 6.854 | 6.854 | (0.837) | 1680595 | 200.000 | 205.31 |
| | 46 cis-1,3-Dichloropropene | 75 | 6.690 | 6.690 | (1.205) | 1167680 | 100.000 | 97.26 |
| * | 47 Chlorobenzene-d5 | 117 | 8.185 | 8.185 | (1.000) | 1088748 | 50.0000 | |
| $ | 48 Toluene-d8 | 98 | 6.922 | 6.922 | (0.846) | 2536024 | 100.000 | 105.65 |
| | 50 Toluene | 91 | 6.982 | 6.982 | (0.853) | 3184353 | 100.000 | 108.92 |
| | 51 trans-1,3-Dichloropropene | 75 | 7.196 | 7.196 | (1.296) | 972012 | 100.000 | 99.85 |
| | 52 2-Hexanone | 43 | 7.593 | 7.593 | (0.928) | 1124170 | 200.000 | 227.75 |
| | 53 1,1,2-Trichloroethane | 83 | 7.357 | 7.357 | (0.899) | 624595 | 100.000 | 97.97 |
| | 54 1,3-Dichloropropane | 76 | 7.499 | 7.499 | (0.916) | 1299270 | 100.000 | 101.32 |
| | 55 Dibromochloromethane | 129 | 7.690 | 7.690 | (0.940) | 849759 | 100.000 | 111.98 |
| | 56 Tetrachloroethene | 164 | 7.458 | 7.458 | (0.911) | 719095 | 100.000 | 105.56 |
| | 57 1,2-Dibromoethane | 107 | 7.784 | 7.784 | (0.951) | 783163 | 100.000 | 102.22 |
| | 58 1-Chlorohexane | 55 | 8.197 | 8.197 | (1.476) | 710963 | 100.000 | 102.28 |
| | 59 Chlorobenzene | 112 | 8.208 | 8.208 | (1.003) | 2161725 | 100.000 | 99.97 |
| | 60 1,1,1,2-Tetrachloroethane | 131 | 8.283 | 8.283 | (1.012) | 767225 | 100.000 | 105.57 |
| | 61 Ethylbenzene | 106 | 8.305 | 8.305 | (1.015) | 1086475 | 100.000 | 112.21 |
| | 62 m,p-Xylenes | 106 | 8.410 | 8.410 | (1.027) | 2756924 | 200.000 | 226.43 |
| | 63 o-Xylene | 106 | 8.748 | 8.748 | (1.069) | 1352093 | 100.000 | 106.85 |
| | 64 Styrene | 104 | 8.759 | 8.759 | (1.070) | 2124765 | 100.000 | 109.36 |
| | 66 Bromoform | 173 | 8.916 | 8.916 | (1.089) | 553169 | 100.000 | 93.24 |
| | 67 Isopropylbenzene | 105 | 9.062 | 9.062 | (1.107) | 3338525 | 100.000 | 102.96 |
| | 68 1,1,2,2-Tetrachloroethane | 83 | 9.329 | 9.329 | (0.917) | 1118164 | 100.000 | 99.27 |
| $ | 69 4-Bromofluorobenzene | 95 | 9.194 | 9.194 | (1.123) | 1113602 | 100.000 | 100.17 |
| * | 70 1,4-Dichlorobenzene-d4 | 152 | 10.168 | 10.168 | (1.000) | 579795 | 50.0000 | |
| | 71 1,2,3-Trichloropropane | 75 | 9.362 | 9.362 | (0.921) | 1003028 | 100.000 | 104.49 |
| | 73 n-Propylbenzene | 91 | 9.411 | 9.411 | (0.926) | 3742926 | 100.000 | 101.01 |
| | 74 Bromobenzene | 156 | 9.317 | 9.317 | (0.916) | 936735 | 100.000 | 101.65 |
| | 75 1,3,5-Trimethylbenzene | 105 | 9.561 | 9.561 | (0.940) | 2477040 | 100.000 | 113.58 |
| | 76 2-Chlorotoluene | 91 | 9.482 | 9.482 | (0.933) | 2355205 | 100.000 | 109.40 |
| | 77 4-Chlorotoluene | 91 | 9.576 | 9.576 | (0.942) | 2811017 | 100.000 | 111.27 |
| | 78 tert-Butylbenzene | 119 | 9.838 | 9.838 | (0.968) | 2425690 | 100.000 | 115.58 |
| | 79 1,2,4-Trimethylbenzene | 105 | 9.876 | 9.876 | (0.971) | 2490027 | 100.000 | 111.07 |
| | 81 sec-Butylbenzene | 105 | 10.022 | 10.022 | (0.986) | 3233827 | 100.000 | 104.42 |
| | 82 p-Isopropyltoluene | 119 | 10.146 | 10.146 | (0.998) | 2596903 | 100.000 | 103.96 |
| | 83 1,3-Dichlorobenzene | 146 | 10.116 | 10.116 | (0.995) | 1662049 | 100.000 | 102.26 |
| | 84 1,4-Dichlorobenzene | 146 | 10.191 | 10.191 | (1.002) | 1821529 | 100.000 | 99.75 |
| | 87 n-Butylbenzene | 91 | 10.491 | 10.491 | (1.032) | 2423452 | 100.000 | 105.38 |
| | 88 1,2-Dichlorobenzene | 146 | 10.506 | 10.506 | (1.033) | 1754755 | 100.000 | 105.56 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 89 | 1,2-Dibromo-3-Chloropropane | 155 | 11.165 | 11.165 (1.098) | 148641 | 100.000 | 106.06 |
| 90 | 1,2,4-Trichlorobenzene | 180 | 11.855 | 11.855 (1.166) | 1064867 | 100.000 | 112.52 |

| | | QUANT SIG | | | | | AMOUNTS CAL-AMT | AMOUNTS ON-COL |
|---|---|---|---|---|---|---|---|---|
| | Compounds | MASS | RT | EXP RT | REL RT | RESPONSE | ( ug/l) | ( ug/l) |
| | 91 Hexachlorobutadiene | 225 | 11.998 | 11.998 | (1.180) | 453589 | 100.000 | 106.83 |
| | 92 Naphthalene | 128 | 12.065 | 12.065 | (1.187) | 2667441 | 100.000 | 100.07 |
| | 93 1,2,3-Trichlorobenzene | 180 | 12.268 | 12.268 | (1.206) | 1025886 | 100.000 | 114.18 |
| M | 94 1,2-Dichloroethylene (total) | 96 | | | | 1676571 | 200.000 | |
| M | 95 Xylenes (total) | 106 | | | | 4109017 | 300.000 | |
| | 135 1,4-Dioxane | 88 | 6.168 | 6.168 | (1.281) | 208874 | 2000.00 | 1936.12 |
| | 141 Cyclohexane | 56 | 4.781 | 4.781 | (0.993) | 1133205 | 100.000 | 106.39 |
| | 138 Freon TF | 101 | 2.334 | 2.334 | (0.485) | 684389 | 100.000 | 104.28 |
| | 140 1,3-Butadiene | 54 | 1.404 | 1.404 | (0.292) | 902435 | 100.000 | 102.92 |
| | 147 Methylcyclohexane | 55 | 5.947 | 5.947 | (1.071) | 1920608 | 100.000 | 113.87(A) |
| | 146 Methyl Acetate | 43 | 2.712 | 2.712 | (0.563) | 834142 | 100.000 | 92.69 |
| | 148 Tert-Butyl alcohol | 59 | 2.963 | 2.963 | (0.615) | 1746456 | 2000.00 | 1920.45 |
| | 149 Isopropyl Alcohol | 45 | 2.562 | 2.562 | (0.532) | 1258105 | 2000.00 | 1928.44 |

QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.
M - Compound response manually integrated.




Data File: \\NAHSTNS005\Target\chem\voa9.i\U230914.b\U091409.D
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Client ID: VSTD100
Sample Info: VSTD100;VSTD100;1;8;
Purge Volume: 5.0
Column phase: DB624

Instrument: VOA9.i
Operator: PC
Column diameter: 0.18

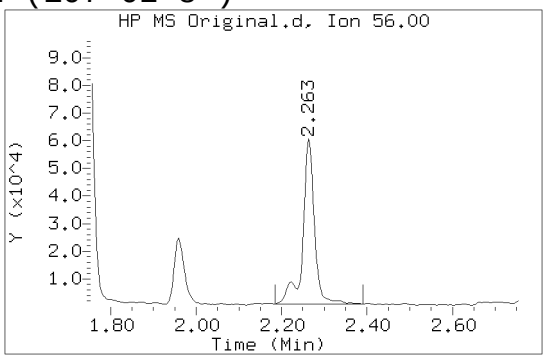
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InstruID : VOA9.i
LabSampID : VSTD100

## Acrolein (107-02-8 )

Reason Code:

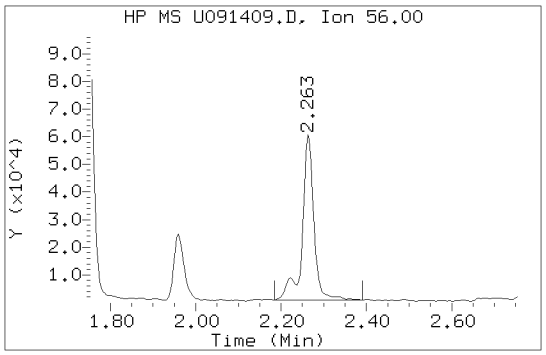
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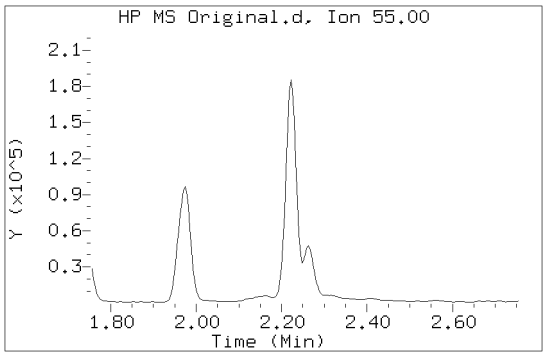

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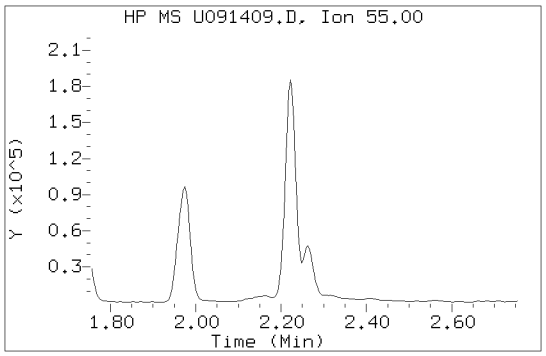

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AFTER

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18-Sep-2023
12:30
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pham

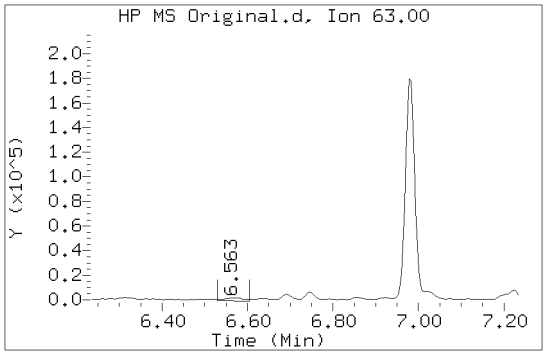



## 2-Chloroethylvinyl ether (110-75-8)

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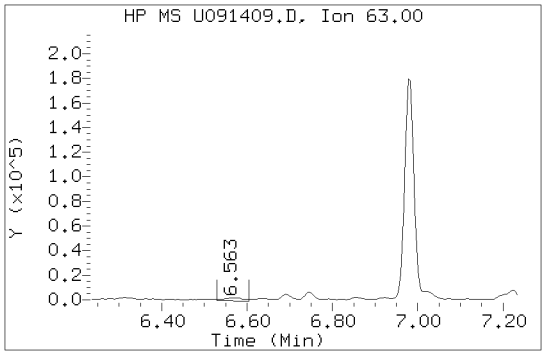
BEFORE

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pham



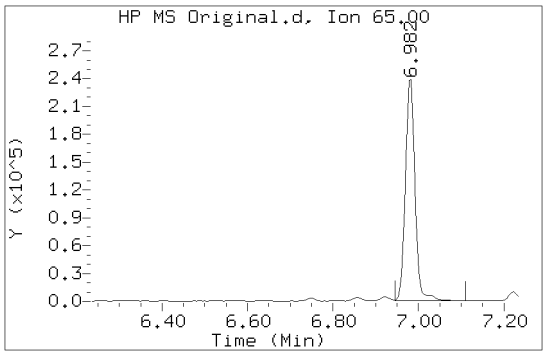

AFTER

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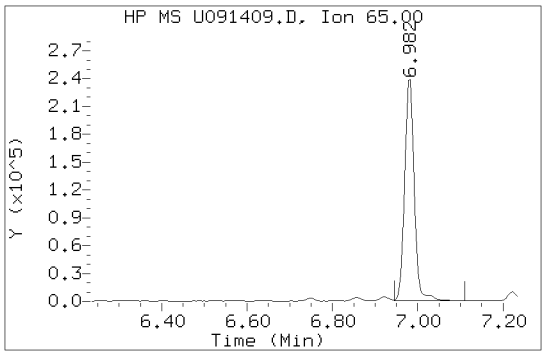

BEFORE

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HEIGHT
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AFTER

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18-Sep-2023
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linh
pham



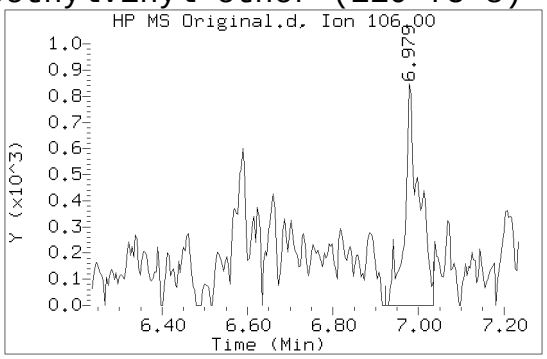
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Inj Date : 14-SEP-2023 18:44
InstruID : VOA9.i
LabSampID : VSTD100

## 2-Chloroethylvinyl ether (110-75-8)

Reason Code:

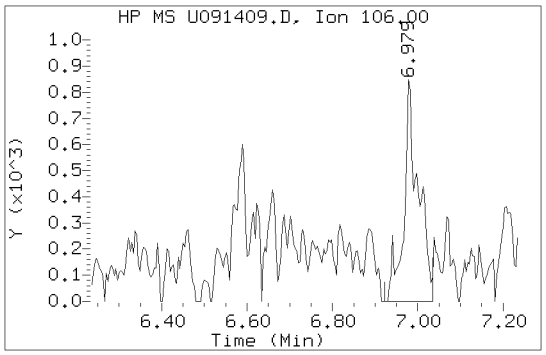
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AFTER

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18-Sep-2023
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linh
pham

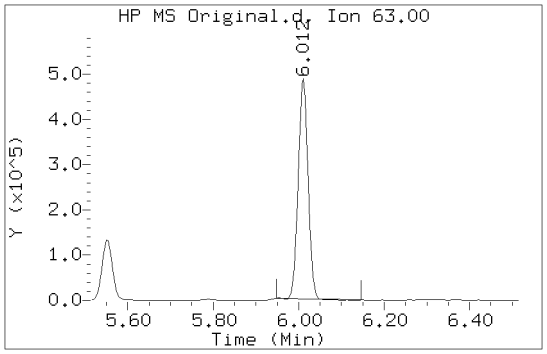



## 1,2-Dichloropropane (78-87-5)

Reason Code:

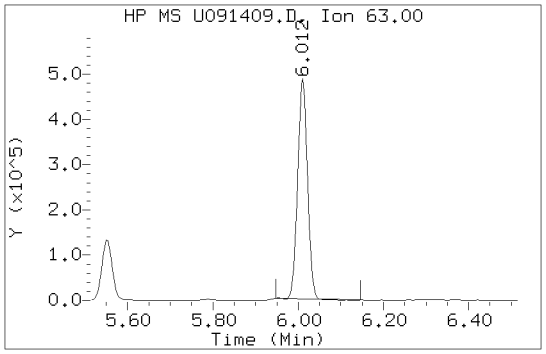
BEFORE

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HEIGHT
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18-Sep-2023
12:30
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pham



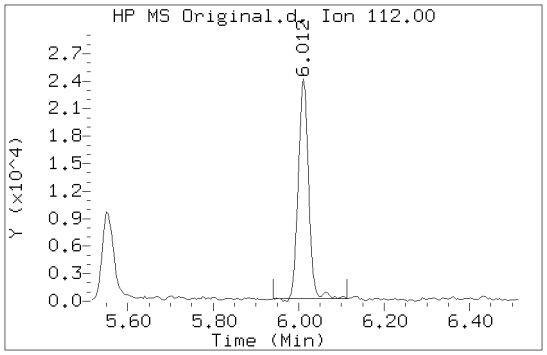

AFTER

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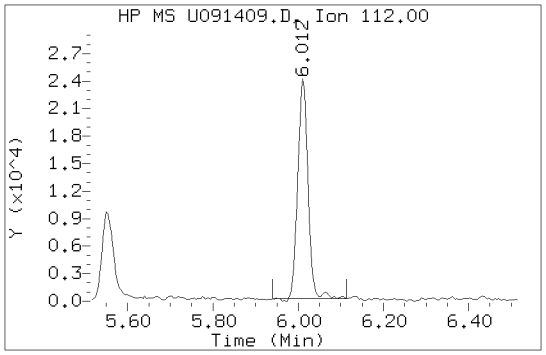

BEFORE

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18-Sep-2023
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pham




AFTER

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HEIGHT
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18-Sep-2023
12:30
linh
pham



Data File: \\NAHSTWS005\Target\chem\voa9.i\U230914.b\U091410.D  Page 1
Report Date: 18-Sep-2023 12:31

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa9.i\U230914.b\U091410.D
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Inj Date  : 14-SEP-2023 19:06
Operator  : PC  Inst ID: VOA9.i
Smp Info  : VSTD150;VSTD150;1;9;
Misc Info : V9;WATER;0;1;
Comment   :
Method    : \\NAHSTWS005\Target\chem\voa9.i\U230914.b\8260C.m
Meth Date : 18-Sep-2023 12:31 VOA9.i  Quant Type: ISTD
Cal Date  : 14-SEP-2023 18:44  Cal File: U091409.D
Als bottle: 11  Calibration Sample, Level: 9
Dil Factor: 1.00000
Integrator: HP RTE  Compound Sublist: 08260V9.sub
Target Version:  4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

| Name | Value | Description |
|---|---|---|
| DF | 1.000 | Dilution Factor |
| Uf | 5.000 | ng unit correction factor |
| Vo | 5.000 | sample purged |
| Cpnd Variable | | Local Compound Variable |

| | Compounds | QUANT SIG MASS | RT | EXP RT | REL RT | RESPONSE | AMOUNTS CAL-AMT ( ug/l) | ON-COL ( ug/l) |
|---|---|---|---|---|---|---|---|---|
| * 1 | Pentafluorobenzene | 168 | 4.812 | 4.812 | (1.000) | 803267 | 50.0000 | |
| 2 | Dichlorodifluoromethane | 85 | 1.157 | 1.157 | (0.240) | 1304711 | 150.000 | 145.48 |
| 3 | Chloromethane | 50 | 1.288 | 1.288 | (0.268) | 2165321 | 150.000 | 147.90 |
| 5 | Vinyl Chloride | 62 | 1.370 | 1.370 | (0.285) | 1647876 | 150.000 | 161.60 |
| 6 | Bromomethane | 94 | 1.603 | 1.603 | (0.333) | 772902 | 150.000 | 154.44 |
| 7 | Chloroethane | 64 | 1.689 | 1.689 | (0.351) | 1145180 | 150.000 | 152.70 |
| 8 | Trichlorofluoromethane | 101 | 1.891 | 1.891 | (0.393) | 2054095 | 150.000 | 157.01 |
| 9 | Acrolein | 56 | 2.259 | 2.259 | (0.469) | 183213 | 300.000 | 265.82(M) |
| 10 | Acetone | 43 | 2.401 | 2.401 | (0.499) | 1181608 | 300.000 | 294.11(A) |
| 11 | 1,1-Dichloroethene | 96 | 2.326 | 2.326 | (0.484) | 1222059 | 150.000 | 153.70 |
| 15 | Iodomethane | 142 | 2.461 | 2.461 | (0.512) | 1796657 | 300.000 | 307.94 |
| 16 | Acrylonitrile | 53 | 3.057 | 3.057 | (0.635) | 1376634 | 300.000 | 293.79 |
| 17 | Methylene Chloride | 84 | 2.787 | 2.787 | (0.579) | 1469875 | 150.000 | 142.46 |
| 18 | Methyl tert-butyl ether | 73 | 3.072 | 3.072 | (0.639) | 3604607 | 150.000 | 159.67 |
| 19 | Carbon Disulfide | 76 | 2.514 | 2.514 | (0.522) | 6993810 | 300.000 | 325.64 |
| 20 | trans-1,2-Dichloroethene | 96 | 3.053 | 3.053 | (0.635) | 1316506 | 150.000 | 157.84 |
| 21 | Vinyl Acetate | 43 | 3.601 | 3.601 | (0.748) | 9900282 | 300.000 | 335.50 |
| 22 | 1,1-Dichloroethane | 63 | 3.511 | 3.511 | (0.730) | 2514269 | 150.000 | 150.30 |
| 24 | 2-Butanone | 43 | 4.260 | 4.260 | (0.885) | 1428537 | 300.000 | 293.40 |
| 26 | 2,2-Dichloropropane | 77 | 4.178 | 4.178 | (0.868) | 1638736 | 150.000 | 161.79 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 27 cis-1,2-Dichloroethene | 96 | 4.189 | 4.189 (0.871) | 1464313 | 150.000 | 153.54 |
| 28 Chloroform | 83 | 4.568 | 4.568 (0.949) | 2391910 | 150.000 | 147.26 |

Data File: \\NAHSTWS005\Target\chem\voa9.i\U230914.b\U091410.D Page 2
Report Date: 18-Sep-2023 12:31

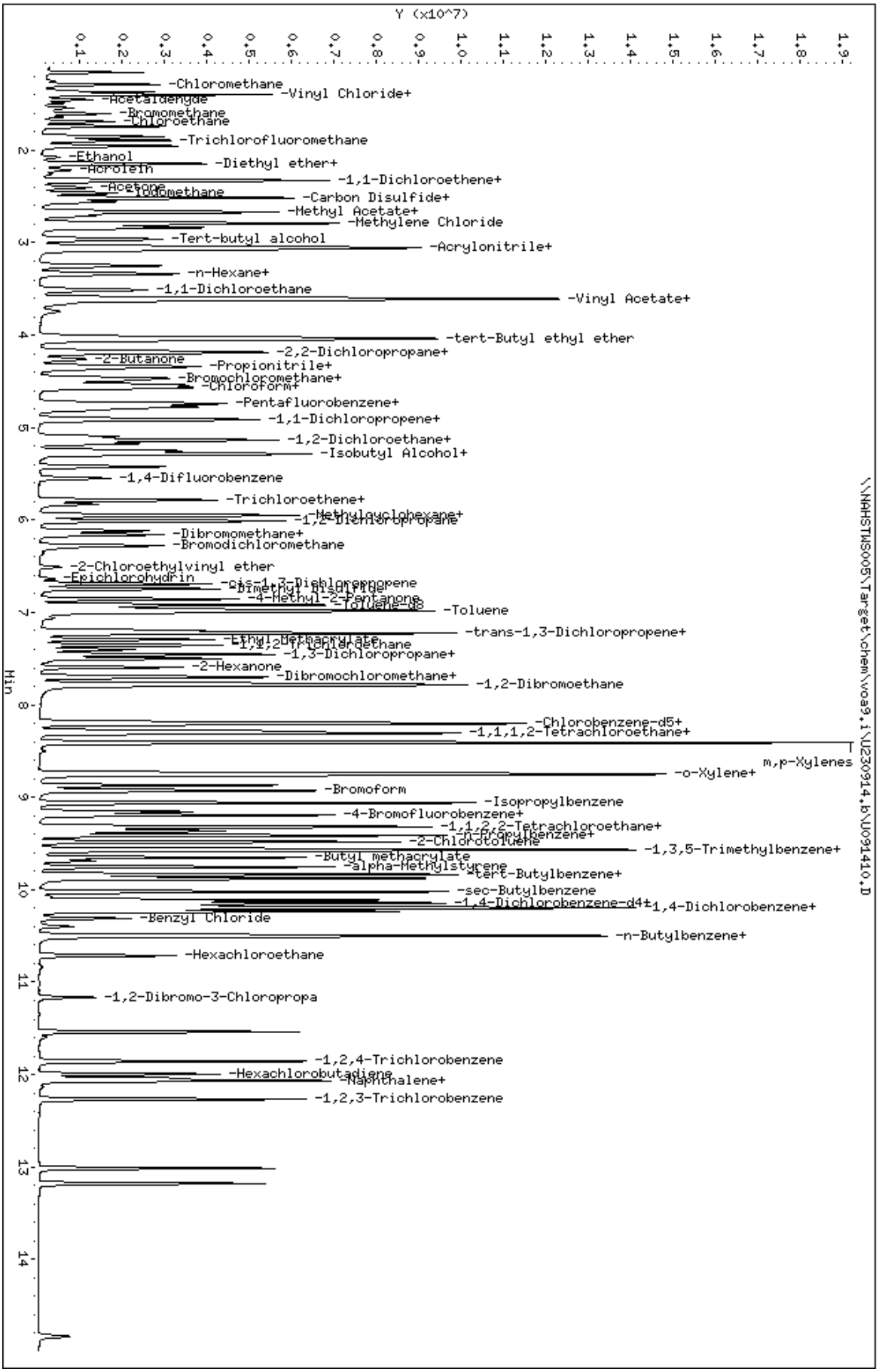
| | Compounds | QUANT SIG MASS | RT | EXP RT | REL RT | RESPONSE | AMOUNTS CAL-AMT ( ug/l) | ON-COL ( ug/l) |
|---|---|---|---|---|---|---|---|---|
| 29 | Bromochloromethane | 128 | 4.467 | 4.467 | (0.928) | 712433 | 150.000 | 142.55 |
| $ 30 | Dibromofluoromethane | 113 | 4.744 | 4.744 | (0.986) | 1058564 | 150.000 | 144.04 |
| 31 | 1,1,1-Trichloroethane | 97 | 4.737 | 4.737 | (0.984) | 1712311 | 150.000 | 155.24 |
| 32 | 1,1-Dichloropropene | 75 | 4.916 | 4.916 | (0.886) | 1538254 | 150.000 | 155.06 |
| 33 | 1,2-Dichloroethane | 62 | 5.175 | 5.175 | (0.932) | 1690386 | 150.000 | 139.94 |
| 34 | Carbon Tetrachloride | 117 | 4.905 | 4.905 | (0.884) | 1464787 | 150.000 | 165.04 |
| $ 35 | 1,2-Dichloroethane-d4 | 65 | 5.096 | 5.096 | (1.059) | 1180336 | 150.000 | 142.85 |
| * 36 | 1,4-Difluorobenzene | 114 | 5.550 | 5.550 | (1.000) | 1249613 | 50.0000 | |
| 37 | Benzene | 78 | 5.134 | 5.134 | (0.925) | 4629744 | 150.000 | 147.50 |
| 38 | Trichloroethene | 130 | 5.786 | 5.786 | (1.043) | 1322314 | 150.000 | 144.84 |
| 39 | Bromodichloromethane | 83 | 6.277 | 6.277 | (1.131) | 1583332 | 150.000 | 155.53 |
| 41 | 2-Chloroethylvinyl ether | 63 | 6.566 | 6.566 | (1.183) | 13383 | 300.000 | 295.55(M) |
| 42 | 1,2-Dichloropropane | 63 | 6.007 | 6.007 | (1.082) | 1276026 | 150.000 | 153.95(M) |
| 44 | Dibromomethane | 93 | 6.116 | 6.116 | (1.102) | 804886 | 150.000 | 141.04 |
| 45 | 4-Methyl-2-Pentanone | 43 | 6.855 | 6.855 | (0.837) | 2729579 | 300.000 | 300.41 |
| 46 | cis-1,3-Dichloropropene | 75 | 6.690 | 6.690 | (1.205) | 1934103 | 150.000 | 146.67 |
| * 47 | Chlorobenzene-d5 | 117 | 8.185 | 8.185 | (1.000) | 1203789 | 50.0000 | |
| $ 48 | Toluene-d8 | 98 | 6.922 | 6.922 | (0.846) | 3880752 | 150.000 | 146.22 |
| 50 | Toluene | 91 | 6.978 | 6.978 | (0.853) | 5075148 | 150.000 | 157.00 |
| 51 | trans-1,3-Dichloropropene | 75 | 7.196 | 7.196 | (1.296) | 1618558 | 150.000 | 151.81 |
| 52 | 2-Hexanone | 43 | 7.593 | 7.593 | (0.928) | 1828358 | 300.000 | 335.02 |
| 53 | 1,1,2-Trichloroethane | 83 | 7.353 | 7.353 | (0.898) | 979422 | 150.000 | 138.95 |
| 54 | 1,3-Dichloropropane | 76 | 7.499 | 7.499 | (0.916) | 2074705 | 150.000 | 146.33 |
| 55 | Dibromochloromethane | 129 | 7.691 | 7.691 | (0.940) | 1359439 | 150.000 | 162.03 |
| 56 | Tetrachloroethene | 164 | 7.454 | 7.454 | (0.911) | 1103938 | 150.000 | 146.57 |
| 57 | 1,2-Dibromoethane | 107 | 7.784 | 7.784 | (0.951) | 1289657 | 150.000 | 152.24 |
| 58 | 1-Chlorohexane | 55 | 8.197 | 8.197 | (1.477) | 1224152 | 150.000 | 162.15 |
| 59 | Chlorobenzene | 112 | 8.208 | 8.208 | (1.003) | 3526073 | 150.000 | 147.48 |
| 60 | 1,1,1,2-Tetrachloroethane | 131 | 8.283 | 8.283 | (1.012) | 1255141 | 150.000 | 156.20 |
| 61 | Ethylbenzene | 106 | 8.305 | 8.305 | (1.015) | 1780371 | 150.000 | 166.31 |
| 62 | m,p-Xylenes | 106 | 8.407 | 8.407 | (1.027) | 4701736 | 300.000 | 349.26 |
| 63 | o-Xylene | 106 | 8.748 | 8.748 | (1.069) | 2314095 | 150.000 | 165.40 |
| 64 | Styrene | 104 | 8.759 | 8.759 | (1.070) | 3833381 | 150.000 | 178.44 |
| 66 | Bromoform | 173 | 8.920 | 8.920 | (1.090) | 971749 | 150.000 | 146.05 |
| 67 | Isopropylbenzene | 105 | 9.063 | 9.063 | (1.107) | 5778129 | 150.000 | 151.87 |
| 68 | 1,1,2,2-Tetrachloroethane | 83 | 9.329 | 9.329 | (0.917) | 1920642 | 150.000 | 145.26 |
| $ 69 | 4-Bromofluorobenzene | 95 | 9.194 | 9.194 | (1.123) | 1883700 | 150.000 | 144.24 |
| * 70 | 1,4-Dichlorobenzene-d4 | 152 | 10.168 | 10.168 | (1.000) | 680590 | 50.0000 | |
| 71 | 1,2,3-Trichloropropane | 75 | 9.362 | 9.362 | (0.921) | 1734512 | 150.000 | 153.93 |
| 73 | n-Propylbenzene | 91 | 9.411 | 9.411 | (0.926) | 6534980 | 150.000 | 148.77 |
| 74 | Bromobenzene | 156 | 9.317 | 9.317 | (0.916) | 1596591 | 150.000 | 147.60 |
| 75 | 1,3,5-Trimethylbenzene | 105 | 9.561 | 9.561 | (0.940) | 4430358 | 150.000 | 173.06 |
| 76 | 2-Chlorotoluene | 91 | 9.482 | 9.482 | (0.933) | 4034469 | 150.000 | 159.65 |
| 77 | 4-Chlorotoluene | 91 | 9.576 | 9.576 | (0.942) | 4899220 | 150.000 | 165.21 |
| 78 | tert-Butylbenzene | 119 | 9.835 | 9.835 | (0.967) | 4279534 | 150.000 | 173.71 |
| 79 | 1,2,4-Trimethylbenzene | 105 | 9.880 | 9.880 | (0.972) | 4477117 | 150.000 | 170.14 |
| 81 | sec-Butylbenzene | 105 | 10.022 | 10.022 | (0.986) | 5794903 | 150.000 | 150.97 |
| 82 | p-Isopropyltoluene | 119 | 10.146 | 10.146 | (0.998) | 4754112 | 150.000 | 151.43 |
| 83 | 1,3-Dichlorobenzene | 146 | 10.116 | 10.116 | (0.995) | 2889427 | 150.000 | 151.45 |
| 84 | 1,4-Dichlorobenzene | 146 | 10.191 | 10.191 | (1.002) | 3065233 | 150.000 | 143.00 |
| 87 | n-Butylbenzene | 91 | 10.491 | 10.491 | (1.032) | 4319547 | 150.000 | 150.07 |
| 88 | 1,2-Dichlorobenzene | 146 | 10.506 | 10.506 | (1.033) | 2952266 | 150.000 | 151.30 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 89 | 1,2-Dibromo-3-Chloropropane | 155 | 11.166 | 11.166 (1.098) | 250593 | 150.000 | 152.32 |
| 90 | 1,2,4-Trichlorobenzene | 180 | 11.855 | 11.855 (1.166) | 1788273 | 150.000 | 160.98 |

| | Compounds | QUANT SIG MASS | RT | EXP RT | REL RT | RESPONSE | AMOUNTS CAL-AMT ( ug/l) | ON-COL ( ug/l) |
|---|---|---|---|---|---|---|---|---|
| | 91 Hexachlorobutadiene | 225 | 11.998 | 11.998 | (1.180) | 723917 | 150.000 | 145.24 |
| | 92 Naphthalene | 128 | 12.065 | 12.065 | (1.187) | 4538786 | 150.000 | 143.84 |
| | 93 1,2,3-Trichlorobenzene | 180 | 12.268 | 12.268 | (1.206) | 1730699 | 150.000 | 164.10 |
| M | 94 1,2-Dichloroethylene (total) | 96 | | | | 2780819 | 300.000 | |
| M | 95 Xylenes (total) | 106 | | | | 7015831 | 450.000 | |
| | 135 1,4-Dioxane | 88 | 6.169 | 6.169 | (1.282) | 319192 | 3000.00 | 2733.71 |
| | 141 Cyclohexane | 56 | 4.778 | 4.778 | (0.993) | 1767337 | 150.000 | 147.10 |
| | 138 Freon TF | 101 | 2.330 | 2.330 | (0.484) | 1134738 | 150.000 | 148.53 |
| | 140 1,3-Butadiene | 54 | 1.396 | 1.396 | (0.290) | 1515916 | 150.000 | 159.74 |
| | 147 Methylcyclohexane | 55 | 5.947 | 5.947 | (1.072) | 2995811 | 150.000 | 163.54(A) |
| | 146 Methyl Acetate | 43 | 2.709 | 2.709 | (0.563) | 1394248 | 150.000 | 143.15 |
| | 148 Tert-Butyl alcohol | 59 | 2.960 | 2.960 | (0.615) | 2979324 | 3000.00 | 3027.04 |
| | 149 Isopropyl Alcohol | 45 | 2.555 | 2.555 | (0.531) | 2140260 | 3000.00 | 3031.16 |

## QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.
M - Compound response manually integrated.




Data File: \\NAHSTWS005\Target\chem\voa9,i\U230914,b\U091410.D
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Client ID: VSTD150
Sample Info: VSTD150;VSTD150;1;9;
Purge Volume: 5.0
Column phase: DB624

Instrument: VOA9,i
Operator: PC
Column diameter: 0.18

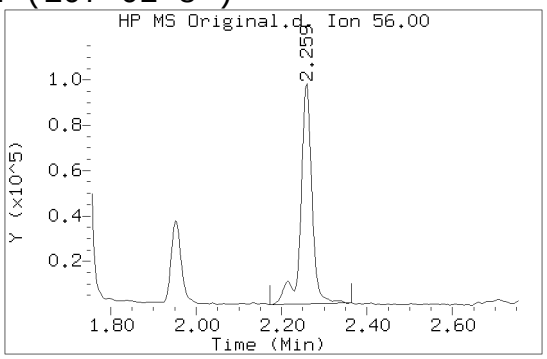
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InstruID : VOA9.i
LabSampID : VSTD150

## Acrolein (107-02-8 )

Reason Code:

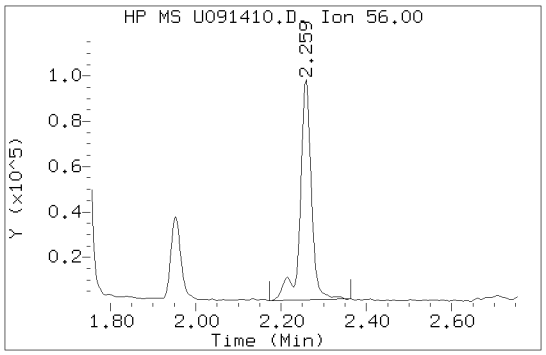
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pham



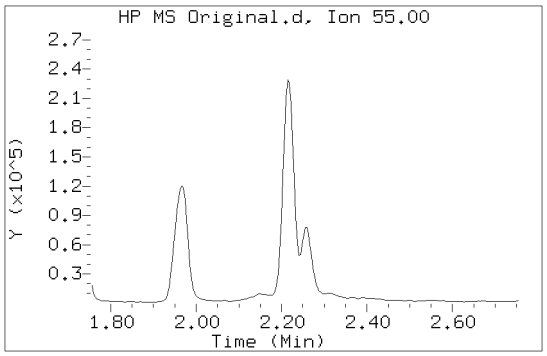

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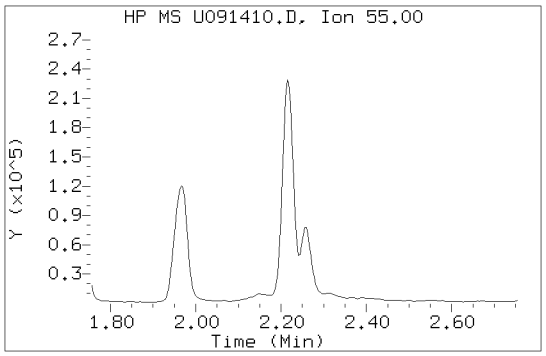

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AFTER

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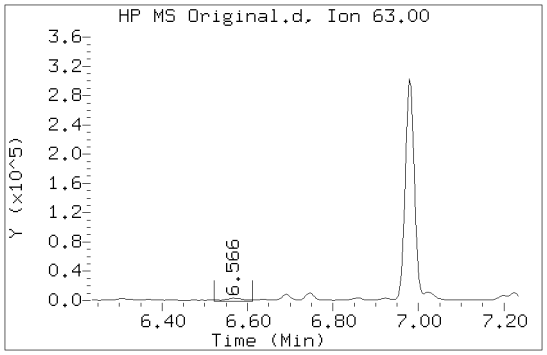



## 2-Chloroethylvinyl ether (110-75-8)

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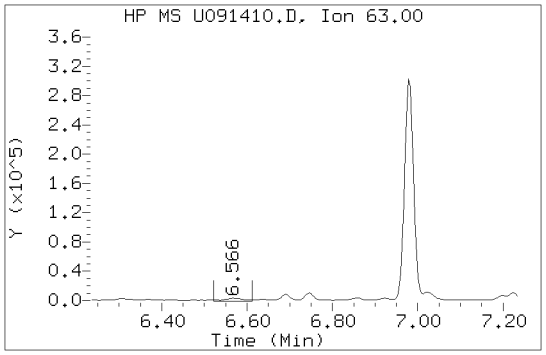
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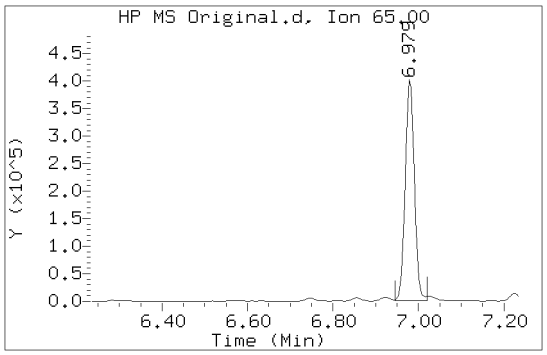

AFTER

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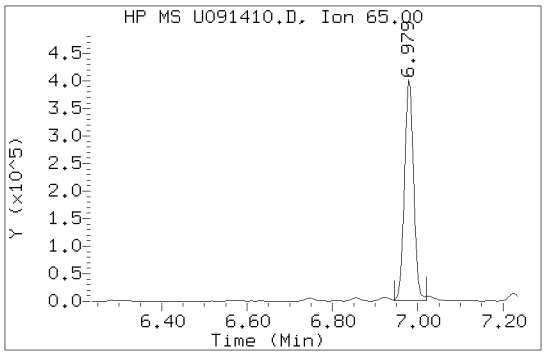

BEFORE

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18-Sep-2023
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AFTER

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18-Sep-2023
12:30
linh
pham



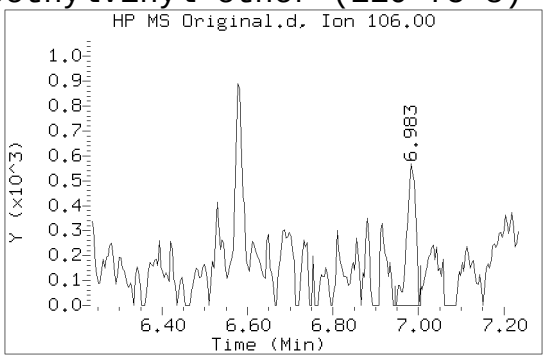
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Inj Date : 14-SEP-2023 19:06
InstruID : VOA9.i
LabSampID : VSTD150

## 2-Chloroethylvinyl ether (110-75-8)

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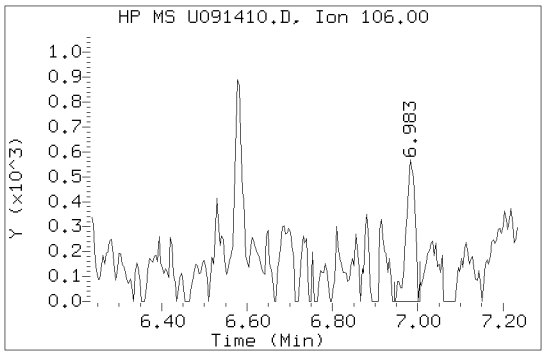
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AFTER

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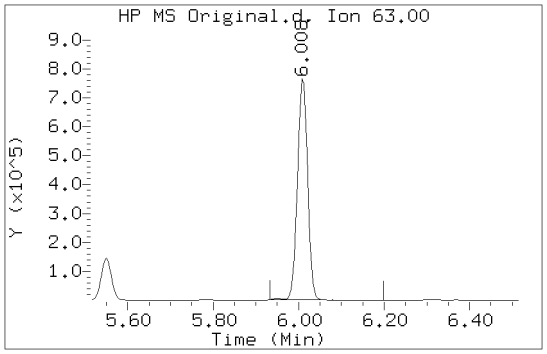



## 1,2-Dichloropropane (78-87-5)

Reason Code:

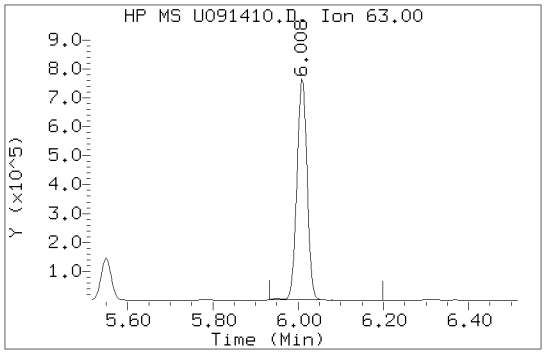
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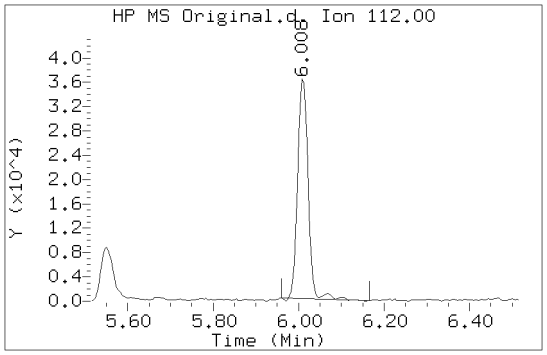

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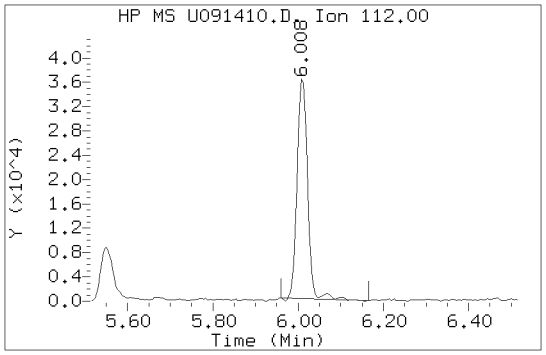

BEFORE

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AFTER

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linh
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Data File: \\NAHSTWS005\Target\chem\voa9.i\U230914.b\U091411.D  Page 1
Report Date: 18-Sep-2023 12:31

ALS Laboratory Group

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Inj Date  : 14-SEP-2023 19:28
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Smp Info  : VSTD200;VSTD200;1;10;
Misc Info : V9;WATER;0;1;
Comment   :
Method    : \\NAHSTWS005\Target\chem\voa9.i\U230914.b\8260C.m
Meth Date : 18-Sep-2023 12:31 VOA9.i  Quant Type: ISTD
Cal Date  : 14-SEP-2023 19:06  Cal File: U091410.D
Als bottle: 12  Calibration Sample, Level: 10
Dil Factor: 1.00000
Integrator: HP RTE  Compound Sublist: 08260V9.sub
Target Version:  4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

| Name | Value | Description |
|---|---|---|
| DF | 1.000 | Dilution Factor |
| Uf | 5.000 | ng unit correction factor |
| Vo | 5.000 | sample purged |
| Cpnd Variable | | Local Compound Variable |

| | Compounds | QUANT SIG MASS | RT | EXP RT | REL RT | RESPONSE | AMOUNTS CAL-AMT ( ug/l) | ON-COL ( ug/l) |
|---|---|---|---|---|---|---|---|---|
| * 1 | Pentafluorobenzene | 168 | 4.808 | 4.808 | (1.000) | 765052 | 50.0000 | |
| 2 | Dichlorodifluoromethane | 85 | 1.153 | 1.153 | (0.240) | 1749434 | 200.000 | 204.28(A) |
| 3 | Chloromethane | 50 | 1.284 | 1.284 | (0.267) | 2776648 | 200.000 | 199.46 |
| 5 | Vinyl Chloride | 62 | 1.363 | 1.363 | (0.284) | 2279456 | 200.000 | 234.71(A) |
| 6 | Bromomethane | 94 | 1.591 | 1.591 | (0.331) | 1252773 | 200.000 | 262.52(A) |
| 7 | Chloroethane | 64 | 1.681 | 1.681 | (0.350) | 1579435 | 200.000 | 221.13(A) |
| 8 | Trichlorofluoromethane | 101 | 1.884 | 1.884 | (0.392) | 2896704 | 200.000 | 232.48(A) |
| 9 | Acrolein | 56 | 2.255 | 2.255 | (0.469) | 267616 | 400.000 | 407.68(AM) |
| 10 | Acetone | 43 | 2.397 | 2.397 | (0.499) | 1749808 | 400.000 | 458.50(A) |
| 11 | 1,1-Dichloroethene | 96 | 2.322 | 2.322 | (0.483) | 1723607 | 200.000 | 227.61(A) |
| 15 | Iodomethane | 142 | 2.457 | 2.457 | (0.511) | 2669085 | 400.000 | 397.17 |
| 16 | Acrylonitrile | 53 | 3.053 | 3.053 | (0.635) | 2024088 | 400.000 | 453.55(A) |
| 17 | Methylene Chloride | 84 | 2.784 | 2.784 | (0.579) | 2059188 | 200.000 | 208.75(A) |
| 18 | Methyl tert-butyl ether | 73 | 3.068 | 3.068 | (0.638) | 5346254 | 200.000 | 248.66(A) |
| 19 | Carbon Disulfide | 76 | 2.510 | 2.510 | (0.522) | 9712692 | 400.000 | 474.83(A) |
| 20 | trans-1,2-Dichloroethene | 96 | 3.050 | 3.050 | (0.634) | 1843642 | 200.000 | 232.08(A) |
| 21 | Vinyl Acetate | 43 | 3.597 | 3.597 | (0.748) | 14357679 | 400.000 | 510.86(A) |
| 22 | 1,1-Dichloroethane | 63 | 3.507 | 3.507 | (0.729) | 3596608 | 200.000 | 225.75(A) |
| 24 | 2-Butanone | 43 | 4.257 | 4.257 | (0.885) | 2106054 | 400.000 | 454.17(A) |
| 26 | 2,2-Dichloropropane | 77 | 4.174 | 4.174 | (0.868) | 2386254 | 200.000 | 247.36(A) |

| | | | | | | |
|---|---|---|---|---|---|---|
| 27 cis-1,2-Dichloroethene | 96 | 4.189 | 4.189 (0.871) | 2052035 | 200.000 | 225.92(A) |
| 28 Chloroform | 83 | 4.568 | 4.568 (0.950) | 3356606 | 200.000 | 216.98(A) |

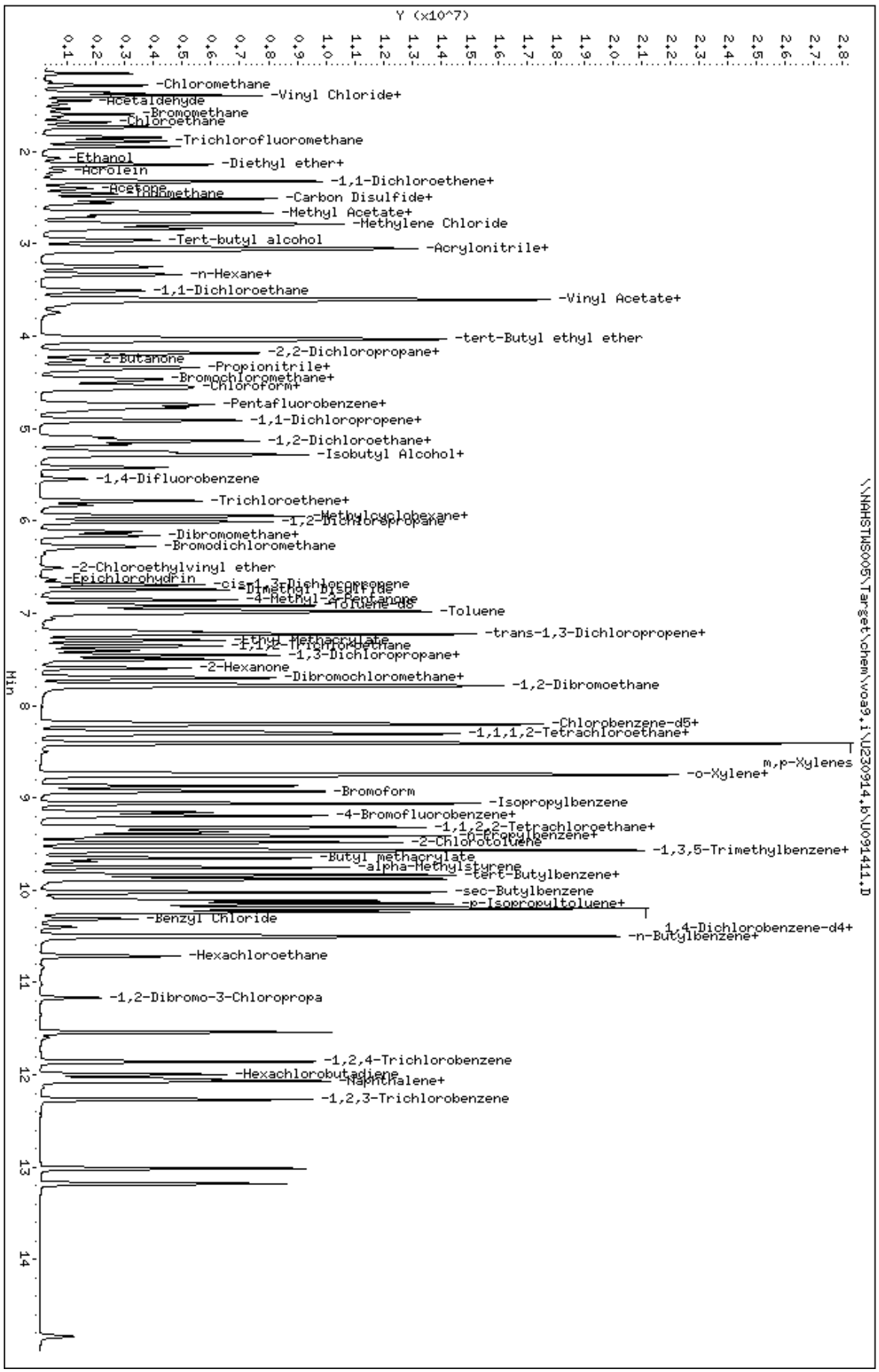
| | Compounds | QUANT SIG MASS | RT | EXP RT | REL RT | RESPONSE | AMOUNTS CAL-AMT ( ug/l) | ON-COL ( ug/l) |
|---|---|---|---|---|---|---|---|---|
| | 29 Bromochloromethane | 128 | 4.463 | 4.463 | (0.928) | 989080 | 200.000 | 207.79(A) |
| $ | 30 Dibromofluoromethane | 113 | 4.740 | 4.740 | (0.986) | 1427589 | 200.000 | 203.87(A) |
| | 31 1,1,1-Trichloroethane | 97 | 4.737 | 4.737 | (0.985) | 2349575 | 200.000 | 223.66(A) |
| | 32 1,1-Dichloropropene | 75 | 4.913 | 4.913 | (0.886) | 2091036 | 200.000 | 214.44(A) |
| | 33 1,2-Dichloroethane | 62 | 5.171 | 5.171 | (0.932) | 2264955 | 200.000 | 190.76 |
| | 34 Carbon Tetrachloride | 117 | 4.905 | 4.905 | (0.884) | 1971605 | 200.000 | 226.00(A) |
| $ | 35 1,2-Dichloroethane-d4 | 65 | 5.093 | 5.093 | (1.059) | 1605933 | 200.000 | 204.13(A) |
| * | 36 1,4-Difluorobenzene | 114 | 5.546 | 5.546 | (1.000) | 1228306 | 50.0000 | |
| | 37 Benzene | 78 | 5.134 | 5.134 | (0.926) | 6155499 | 200.000 | 199.52 |
| | 38 Trichloroethene | 130 | 5.782 | 5.782 | (1.043) | 1740889 | 200.000 | 194.00 |
| | 39 Bromodichloromethane | 83 | 6.277 | 6.277 | (1.132) | 2138543 | 200.000 | 213.72(A) |
| | 41 2-Chloroethylvinyl ether | 63 | 6.570 | 6.570 | (1.185) | 13941 | 400.000 | 313.18(M) |
| | 42 1,2-Dichloropropane | 63 | 6.007 | 6.007 | (1.083) | 1720199 | 200.000 | 211.14(AM) |
| | 44 Dibromomethane | 93 | 6.116 | 6.116 | (1.103) | 1103109 | 200.000 | 196.65 |
| | 45 4-Methyl-2-Pentanone | 43 | 6.855 | 6.855 | (0.837) | 3882854 | 400.000 | 398.73 |
| | 46 cis-1,3-Dichloropropene | 75 | 6.690 | 6.690 | (1.206) | 2674030 | 200.000 | 205.02(A) |
| * | 47 Chlorobenzene-d5 | 117 | 8.185 | 8.185 | (1.000) | 1287469 | 50.0000 | |
| $ | 48 Toluene-d8 | 98 | 6.918 | 6.918 | (0.845) | 5383811 | 200.000 | 189.67 |
| | 50 Toluene | 91 | 6.978 | 6.978 | (0.853) | 7226000 | 200.000 | 209.02(A) |
| | 51 trans-1,3-Dichloropropene | 75 | 7.196 | 7.196 | (1.297) | 2363995 | 200.000 | 224.42(A) |
| | 52 2-Hexanone | 43 | 7.593 | 7.593 | (0.928) | 2864702 | 400.000 | 490.80(A) |
| | 53 1,1,2-Trichloroethane | 83 | 7.353 | 7.353 | (0.898) | 1441503 | 200.000 | 191.22 |
| | 54 1,3-Dichloropropane | 76 | 7.499 | 7.499 | (0.916) | 2991395 | 200.000 | 197.28 |
| | 55 Dibromochloromethane | 129 | 7.691 | 7.691 | (0.940) | 1988714 | 200.000 | 221.63(A) |
| | 56 Tetrachloroethene | 164 | 7.454 | 7.454 | (0.911) | 1578033 | 200.000 | 195.90 |
| | 57 1,2-Dibromoethane | 107 | 7.784 | 7.784 | (0.951) | 1945642 | 200.000 | 214.75(A) |
| | 58 1-Chlorohexane | 55 | 8.197 | 8.197 | (1.478) | 1896062 | 200.000 | 255.51(A) |
| | 59 Chlorobenzene | 112 | 8.208 | 8.208 | (1.003) | 5236580 | 200.000 | 204.79(A) |
| | 60 1,1,1,2-Tetrachloroethane | 131 | 8.283 | 8.283 | (1.012) | 1865470 | 200.000 | 217.07(A) |
| | 61 Ethylbenzene | 106 | 8.305 | 8.305 | (1.015) | 2634094 | 200.000 | 230.06(A) |
| | 62 m,p-Xylenes | 106 | 8.407 | 8.407 | (1.027) | 6983196 | 400.000 | 485.03(A) |
| | 63 o-Xylene | 106 | 8.748 | 8.748 | (1.069) | 3523648 | 200.000 | 235.49(A) |
| | 64 Styrene | 104 | 8.759 | 8.759 | (1.070) | 5763441 | 200.000 | 250.85(A) |
| | 66 Bromoform | 173 | 8.920 | 8.920 | (1.090) | 1484437 | 200.000 | 207.07(A) |
| | 67 Isopropylbenzene | 105 | 9.063 | 9.063 | (1.107) | 8637564 | 200.000 | 198.65 |
| | 68 1,1,2,2-Tetrachloroethane | 83 | 9.329 | 9.329 | (0.917) | 2800981 | 200.000 | 201.55(A) |
| $ | 69 4-Bromofluorobenzene | 95 | 9.194 | 9.194 | (1.123) | 2804888 | 200.000 | 186.57 |
| * | 70 1,4-Dichlorobenzene-d4 | 152 | 10.172 | 10.172 | (1.000) | 715330 | 50.0000 | |
| | 71 1,2,3-Trichloropropane | 75 | 9.362 | 9.362 | (0.920) | 2671988 | 200.000 | 225.61(A) |
| | 73 n-Propylbenzene | 91 | 9.411 | 9.411 | (0.925) | 9390355 | 200.000 | 202.29(A) |
| | 74 Bromobenzene | 156 | 9.317 | 9.317 | (0.916) | 2358754 | 200.000 | 207.47(A) |
| | 75 1,3,5-Trimethylbenzene | 105 | 9.561 | 9.561 | (0.940) | 6663134 | 200.000 | 247.64(A) |
| | 76 2-Chlorotoluene | 91 | 9.482 | 9.482 | (0.932) | 5938208 | 200.000 | 223.57(A) |
| | 77 4-Chlorotoluene | 91 | 9.576 | 9.576 | (0.941) | 7120485 | 200.000 | 228.46(A) |
| | 78 tert-Butylbenzene | 119 | 9.839 | 9.839 | (0.967) | 6182289 | 200.000 | 238.77(A) |
| | 79 1,2,4-Trimethylbenzene | 105 | 9.880 | 9.880 | (0.971) | 6708498 | 200.000 | 242.55(A) |
| | 81 sec-Butylbenzene | 105 | 10.022 | 10.022 | (0.985) | 8545916 | 200.000 | 198.80 |
| | 82 p-Isopropyltoluene | 119 | 10.146 | 10.146 | (0.997) | 7125106 | 200.000 | 198.73 |
| | 83 1,3-Dichlorobenzene | 146 | 10.116 | 10.116 | (0.994) | 4176175 | 200.000 | 208.27(A) |
| | 84 1,4-Dichlorobenzene | 146 | 10.191 | 10.191 | (1.002) | 4453497 | 200.000 | 197.67 |
| | 87 n-Butylbenzene | 91 | 10.491 | 10.491 | (1.031) | 6555037 | 200.000 | 199.09 |
| | 88 1,2-Dichlorobenzene | 146 | 10.506 | 10.506 | (1.033) | 4292379 | 200.000 | 209.30(A) |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 89 | 1,2-Dibromo-3-Chloropropane | 155 | 11.166 | 11.166 (1.098) | 401927 | 200.000 | 232.45(A) |
| 90 | 1,2,4-Trichlorobenzene | 180 | 11.859 | 11.859 (1.166) | 2706101 | 200.000 | 231.78(A) |

| | Compounds | QUANT SIG MASS | RT | EXP RT | REL RT | RESPONSE | AMOUNTS CAL-AMT ( ug/l) | ON-COL ( ug/l) |
|---|---|---|---|---|---|---|---|---|
| | 91 Hexachlorobutadiene | 225 | 11.998 | 11.998 | (1.179) | 1099198 | 200.000 | 209.83(A) |
| | 92 Naphthalene | 128 | 12.065 | 12.065 | (1.186) | 6850147 | 200.000 | 205.35(A) |
| | 93 1,2,3-Trichlorobenzene | 180 | 12.268 | 12.268 | (1.206) | 2632662 | 200.000 | 237.51(A) |
| M | 94 1,2-Dichloroethylene (total) | 96 | | | | 3895677 | 400.000 | |
| M | 95 Xylenes (total) | 106 | | | | 10506844 | 600.000 | |
| | 135 1,4-Dioxane | 88 | 6.169 | 6.169 | (1.283) | 431286 | 4000.00 | 3878.25 |
| | 141 Cyclohexane | 56 | 4.774 | 4.774 | (0.993) | 2438404 | 200.000 | 200.14(A) |
| | 138 Freon TF | 101 | 2.322 | 2.322 | (0.483) | 1638859 | 200.000 | 200.00(A) |
| | 140 1,3-Butadiene | 54 | 1.393 | 1.393 | (0.290) | 2133087 | 200.000 | 236.00(A) |
| | 147 Methylcyclohexane | 55 | 5.944 | 5.944 | (1.072) | 4348902 | 200.000 | 241.52(A) |
| | 146 Methyl Acetate | 43 | 2.701 | 2.701 | (0.562) | 2016180 | 200.000 | 217.35(A) |
| | 148 Tert-Butyl alcohol | 59 | 2.960 | 2.960 | (0.616) | 4391311 | 4000.00 | 4684.50(A) |
| | 149 Isopropyl Alcohol | 45 | 2.555 | 2.555 | (0.531) | 3113180 | 4000.00 | 4629.30(A) |

QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.
M - Compound response manually integrated.


Y (x10^7)
Min
-Chloromethane
-Vinyl Chloride+
-Acetaldehyde
-Bromomethane
-Chloroethane
-Trichlorofluoromethane
-Ethanol
-Diethyl ether+
-Acrolein
-1,1-Dichloroethene+
-Acetone
-Carbon Disulfide+
-Methyl Acetate+
-Methylene Chloride
-Tert-butyl alcohol
-Acrylonitrile+
-n-Hexane+
-1,1-Dichloroethane
-Vinyl Acetate+
-tert-Butyl ethyl ether
-2,2-Dichloropropane+
-2-Butanone
-Propionitrile+
-Bromochloromethane+
-Chloroform+
-Pentafluorobenzene+
-1,1-Dichloropropene+
-1,2-Dichloroethane+
-Isobutyl Alcohol+
-1,4-Difluorobenzene
-Trichloroethene+
-Methylcyclohexane+
-1,2-Dichloropropane
-Dibromomethane+
-Bromodichloromethane
-2-Chloroethylvinyl ether
-Epichlorohydrin
-cis-1,3-Dichloropropene
-Dimethyl disulfide
-4-Methyl-2-Pentanone
-Toluene-d8
-Toluene
-trans-1,3-Dichloropropene+
-Ethyl Methacrylate
-1,1,2-Trichloroethane
-1,3-Dichloropropane+
-2-Hexanone
-Dibromochloromethane+
-1,2-Dibromoethane
-Chlorobenzene-d5+
-1,1,1,2-Tetrachloroethane+
m,p-Xylenes
-o-Xylene+
-Bromoform
-Isopropylbenzene
-4-Bromofluorobenzene+
-1,1,2,2-Tetrachloroethane+
-n-Propylbenzene+
-2-Chlorotoluene
-1,3,5-Trimethylbenzene+
-Butyl methacrylate
-alpha-Methylstyrene
-tert-Butylbenzene+
-sec-Butylbenzene
-p-Isopropyltoluene+
-Benzyl Chloride
1,4-Dichlorobenzene-d4+
-n-Butylbenzene+
-Hexachloroethane
-1,2-Dibromo-3-Chloropropa
-1,2,4-Trichlorobenzene
-Hexachlorobutadiene
-Naphthalene+
-1,2,3-Trichlorobenzene
\\NAHSTWS005\Target\chem\voa9.i\U230914.b\U091411.D
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Instrument: VOA9.i
Operator: PC
Column diameter: 0.18
Page 1

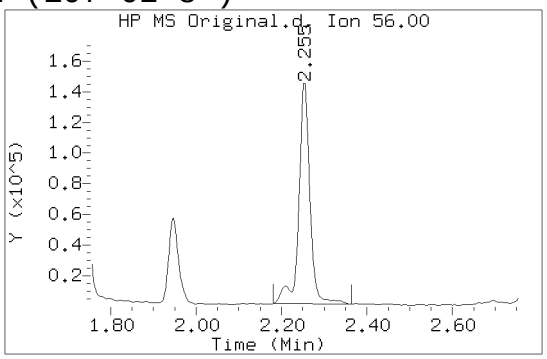
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LabSampID : VSTD200

## Acrolein (107-02-8 )

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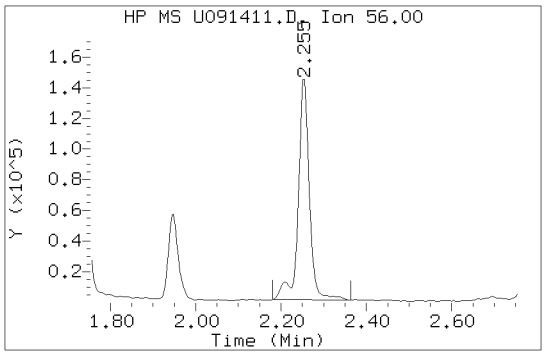
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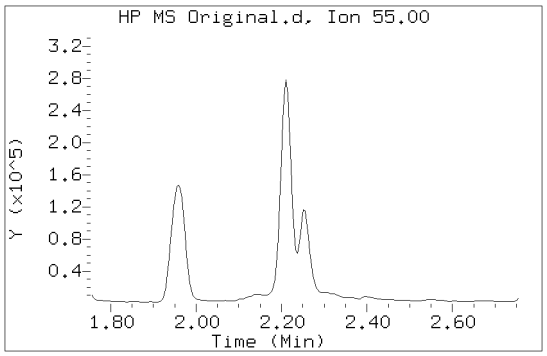

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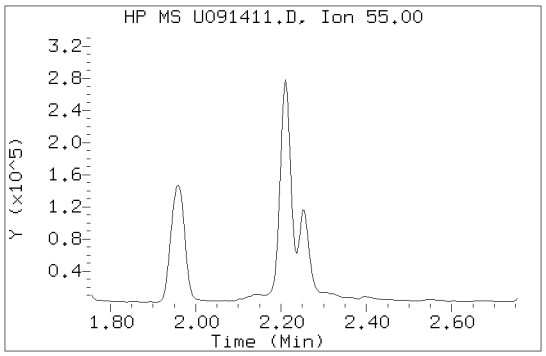

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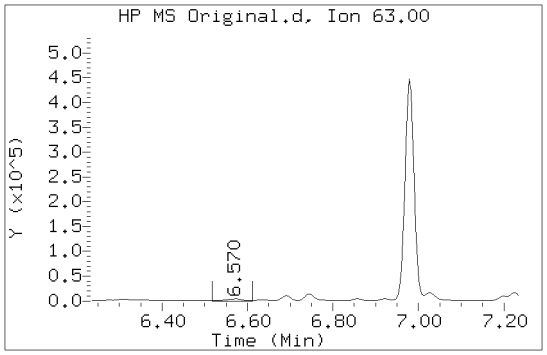



## 2-Chloroethylvinyl ether (110-75-8)

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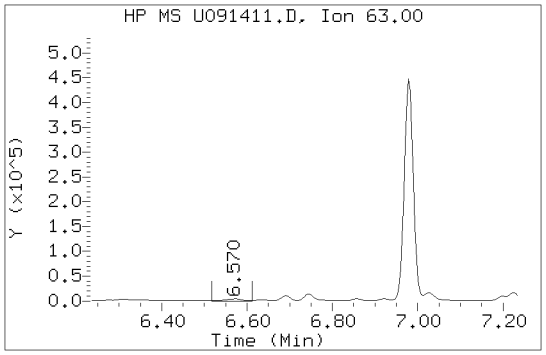
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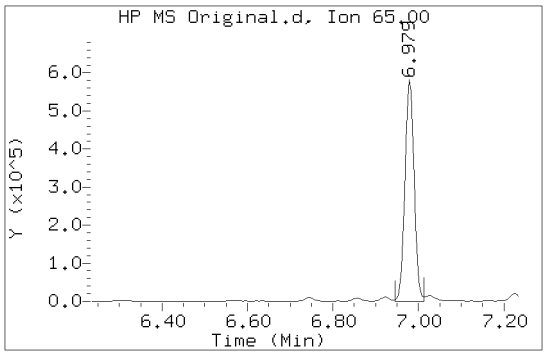

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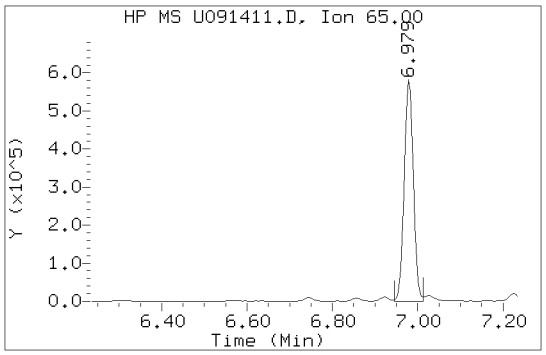

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AFTER

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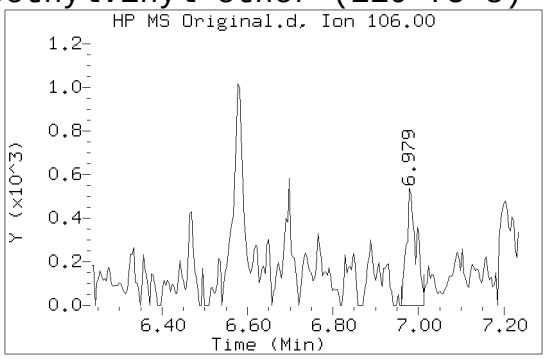
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LabSampID : VSTD200

## 2-Chloroethylvinyl ether (110-75-8)

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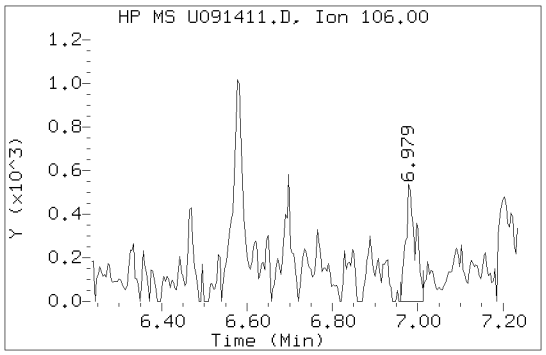
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AFTER

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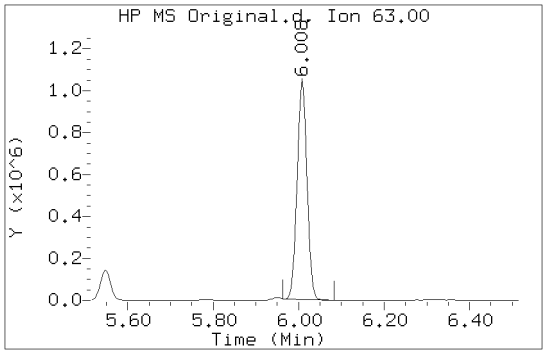



## 1,2-Dichloropropane (78-87-5)

Reason Code:

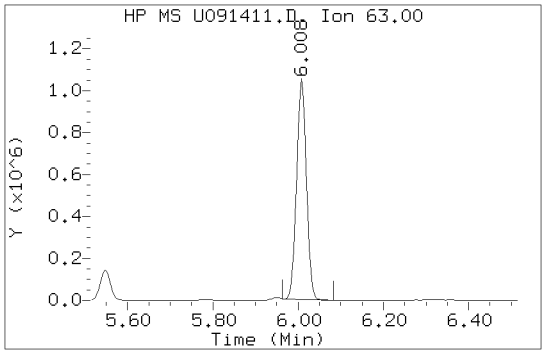
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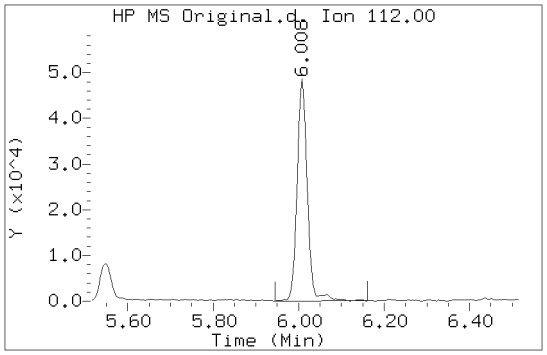

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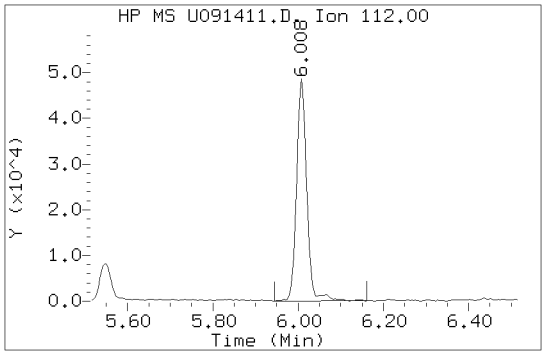

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AFTER

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HEIGHT
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18-Sep-2023
12:30
linh
pham



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Report Date: 18-Sep-2023 13:23

ALS Laboratory Group

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Inj Date  : 14-SEP-2023 20:13
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Smp Info  : CCV;CCV;2;;;ICV
Misc Info : V9;WATER;0;1;
Comment   :
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Cal Date  : 14-SEP-2023 19:28  Cal File: U091411.D
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Dil Factor: 1.00000
Integrator: HP RTE  Compound Sublist: 8260_GB.sub
Target Version:  4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

| Name | Value | Description |
|---|---|---|
| DF | 1.000 | Dilution Factor |
| Uf | 5.000 | ng unit correction factor |
| Vo | 5.000 | sample purged |
| Cpnd Variable | | Local Compound Variable |

| | Compounds | QUANT SIG MASS | RT | EXP RT | REL RT | RESPONSE | CONCENTRATIONS ON-COLUMN ( ug/l) | FINAL ( ug/l) |
|---|---|---|---|---|---|---|---|---|
| * 1 | Pentafluorobenzene | 168 | 4.815 | 4.815 | (1.000) | 762470 | 50.0000 | |
| 2 | Dichlorodifluoromethane | 85 | 1.168 | 1.167 | (0.243) | 373445 | 44.8060 | 44.80 |
| 3 | Chloromethane | 50 | 1.299 | 1.299 | (0.270) | 613546 | 43.4647 | 43.46 |
| 5 | Vinyl Chloride | 62 | 1.381 | 1.381 | (0.287) | 456551 | 47.1697 | 47.16 |
| 6 | Bromomethane | 94 | 1.621 | 1.625 | (0.337) | 254810 | 53.9337 | 53.93 |
| 7 | Chloroethane | 64 | 1.704 | 1.703 | (0.354) | 326184 | 45.8234 | 45.82 |
| 8 | Trichlorofluoromethane | 101 | 1.899 | 1.902 | (0.394) | 576233 | 46.4034 | 46.40 |
| 9 | Acrolein | 56 | 2.270 | 2.269 | (0.471) | 56069 | 85.7037 | 85.70 |
| 10 | Acetone | 43 | 2.412 | 2.412 | (0.501) | 373869 | 96.5981 | 96.59 |
| 11 | 1,1-Dichloroethene | 96 | 2.337 | 2.337 | (0.485) | 341766 | 45.2851 | 45.28 |
| 15 | Iodomethane | 142 | 2.472 | 2.472 | (0.513) | 476890 | 107.268 | 107.26 |
| 16 | Acrylonitrile | 53 | 3.068 | 3.068 | (0.637) | 431945 | 97.1174 | 97.11 |
| 17 | Methylene Chloride | 84 | 2.798 | 2.798 | (0.581) | 443674 | 46.4573 | 46.45 |
| 18 | Methyl tert-butyl ether | 73 | 3.083 | 3.083 | (0.640) | 1137013 | 53.0633 | 53.06 |
| 19 | Carbon Disulfide | 76 | 2.525 | 2.524 | (0.524) | 1994333 | 97.8283 | 97.82 |
| 20 | trans-1,2-Dichloroethene | 96 | 3.061 | 3.060 | (0.636) | 383014 | 48.3782 | 48.37 |
| 21 | Vinyl Acetate | 43 | 3.608 | 3.612 | (0.749) | 2836526 | 101.269 | 101.26 |
| 22 | 1,1-Dichloroethane | 63 | 3.514 | 3.518 | (0.730) | 749609 | 47.2111 | 47.21 |
| 24 | 2-Butanone | 43 | 4.268 | 4.268 | (0.886) | 451092 | 97.6074 | 97.60 |
| 26 | 2,2-Dichloropropane | 77 | 4.185 | 4.185 | (0.869) | 460574 | 47.9056 | 47.90 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 27 | cis-1,2-Dichloroethene | 96 | 4.197 | 4.196 (0.872) | 444407 | 49.0944 | 49.09 |
| 28 | Chloroform | 83 | 4.575 | 4.575 (0.950) | 730573 | 47.3872 | 47.38 |

Data File: \\NAHSTWS005\Target\chem\voa9.i\U230914.b\U091413.D Page 2
Report Date: 18-Sep-2023 13:23

| | Compounds | QUANT SIG MASS | RT | EXP RT | REL RT | RESPONSE | CONCENTRATIONS ON-COLUMN ( ug/l) | FINAL ( ug/l) |
|---|---|---|---|---|---|---|---|---|
| | 29 Bromochloromethane | 128 | 4.470 | 4.470 | (0.928) | 221891 | 46.7750 | 46.77 |
| $ | 30 Dibromofluoromethane | 113 | 4.748 | 4.747 | (0.986) | 366520 | 52.6744 | 52.67 |
| | 31 1,1,1-Trichloroethane | 97 | 4.744 | 4.744 | (0.985) | 494690 | 47.2502 | 47.25 |
| | 32 1,1-Dichloropropene | 75 | 4.920 | 4.924 | (0.886) | 444906 | 46.3917 | 46.39 |
| | 33 1,2-Dichloroethane | 62 | 5.179 | 5.178 | (0.933) | 535323 | 45.8422 | 45.84 |
| | 34 Carbon Tetrachloride | 117 | 4.909 | 4.912 | (0.884) | 390361 | 45.4973 | 45.49 |
| $ | 35 1,2-Dichloroethane-d4 | 65 | 5.100 | 5.100 | (1.059) | 412660 | 52.5221 | 52.52 |
| * | 36 1,4-Difluorobenzene | 114 | 5.554 | 5.553 | (1.000) | 1208072 | 50.0000 | |
| | 37 Benzene | 78 | 5.138 | 5.141 | (0.925) | 1437665 | 47.3803 | 47.38 |
| | 38 Trichloroethene | 130 | 5.790 | 5.790 | (1.043) | 394023 | 44.6459 | 44.64 |
| | 39 Bromodichloromethane | 83 | 6.277 | 6.281 | (1.130) | 465805 | 47.3312 | 47.33 |
| | 41 2-Chloroethylvinyl ether | 63 | 6.566 | 6.570 | (1.182) | 3914 | 89.7724 | 89.77(M) |
| | 42 1,2-Dichloropropane | 63 | 6.011 | 6.011 | (1.082) | 400812 | 50.0216 | 50.02 |
| | 44 Dibromomethane | 93 | 6.120 | 6.119 | (1.102) | 252818 | 45.8247 | 45.82 |
| | 45 4-Methyl-2-Pentanone | 43 | 6.858 | 6.858 | (0.838) | 815463 | 97.6171 | 97.61 |
| | 46 cis-1,3-Dichloropropene | 75 | 6.693 | 6.693 | (1.205) | 544821 | 44.9726 | 44.97 |
| * | 47 Chlorobenzene-d5 | 117 | 8.185 | 8.185 | (1.000) | 1126682 | 50.0000 | |
| $ | 48 Toluene-d8 | 98 | 6.922 | 6.922 | (0.846) | 1347261 | 54.2390 | 54.23 |
| | 50 Toluene | 91 | 6.982 | 6.982 | (0.853) | 1516303 | 50.1201 | 50.12 |
| | 51 trans-1,3-Dichloropropene | 75 | 7.196 | 7.199 | (1.296) | 449839 | 45.3510 | 45.35 |
| | 52 2-Hexanone | 43 | 7.593 | 7.593 | (0.928) | 541318 | 105.978 | 105.97 |
| | 53 1,1,2-Trichloroethane | 83 | 7.357 | 7.356 | (0.899) | 308418 | 46.7513 | 46.75 |
| | 54 1,3-Dichloropropane | 76 | 7.499 | 7.499 | (0.916) | 639759 | 48.2136 | 48.21 |
| | 55 Dibromochloromethane | 129 | 7.690 | 7.694 | (0.940) | 395929 | 50.4227 | 50.42 |
| | 56 Tetrachloroethene | 164 | 7.458 | 7.458 | (0.911) | 342764 | 48.6253 | 48.62 |
| | 57 1,2-Dibromoethane | 107 | 7.784 | 7.784 | (0.951) | 384077 | 48.4428 | 48.44 |
| | 58 1-Chlorohexane | 55 | 8.196 | 8.196 | (1.476) | 302754 | 41.4823 | 41.48 |
| | 59 Chlorobenzene | 112 | 8.208 | 8.211 | (1.003) | 1030076 | 46.0342 | 46.03 |
| | 60 1,1,1,2-Tetrachloroethane | 131 | 8.283 | 8.282 | (1.012) | 360975 | 47.9994 | 47.99 |
| | 61 Ethylbenzene | 106 | 8.305 | 8.305 | (1.015) | 506381 | 50.5406 | 50.54 |
| | 62 m,p-Xylenes | 106 | 8.406 | 8.410 | (1.027) | 1260997 | 100.084 | 100.08 |
| | 63 o-Xylene | 106 | 8.748 | 8.747 | (1.069) | 624736 | 47.7110 | 47.71 |
| | 64 Styrene | 104 | 8.759 | 8.762 | (1.070) | 1004768 | 49.9743 | 49.97 |
| | 66 Bromoform | 173 | 8.920 | 8.920 | (1.090) | 249812 | 42.7012 | 42.70 |
| | 67 Isopropylbenzene | 105 | 9.062 | 9.062 | (1.107) | 1494789 | 47.7375 | 47.73 |
| | 68 1,1,2,2-Tetrachloroethane | 83 | 9.329 | 9.328 | (0.917) | 535133 | 47.5013 | 47.50 |
| $ | 69 4-Bromofluorobenzene | 95 | 9.194 | 9.193 | (1.123) | 577860 | 52.9595 | 52.95 |
| * | 70 1,4-Dichlorobenzene-d4 | 152 | 10.168 | 10.172 | (1.000) | 579889 | 50.0000 | |
| | 71 1,2,3-Trichloropropane | 75 | 9.362 | 9.362 | (0.921) | 472585 | 49.2242 | 49.22 |
| | 73 n-Propylbenzene | 91 | 9.411 | 9.411 | (0.926) | 1689405 | 47.2430 | 47.24 |
| | 74 Bromobenzene | 156 | 9.317 | 9.317 | (0.916) | 464477 | 50.3976 | 50.39 |
| | 75 1,3,5-Trimethylbenzene | 105 | 9.561 | 9.561 | (0.940) | 1153378 | 52.8786 | 52.87 |
| | 76 2-Chlorotoluene | 91 | 9.482 | 9.482 | (0.933) | 1107535 | 51.4378 | 51.43 |
| | 77 4-Chlorotoluene | 91 | 9.576 | 9.576 | (0.942) | 1298176 | 51.3808 | 51.38 |
| | 78 tert-Butylbenzene | 119 | 9.838 | 9.838 | (0.968) | 1069786 | 50.9670 | 50.96 |
| | 79 1,2,4-Trimethylbenzene | 105 | 9.876 | 9.879 | (0.971) | 1196006 | 53.3442 | 53.34 |
| | 81 sec-Butylbenzene | 105 | 10.022 | 10.022 | (0.986) | 1407639 | 48.7491 | 48.74 |
| | 82 p-Isopropyltoluene | 119 | 10.146 | 10.145 | (0.998) | 1165790 | 50.3945 | 50.39 |
| | 83 1,3-Dichlorobenzene | 146 | 10.116 | 10.115 | (0.995) | 786169 | 48.3644 | 48.36 |
| | 84 1,4-Dichlorobenzene | 146 | 10.191 | 10.190 | (1.002) | 844030 | 46.2147 | 46.21 |
| | 87 n-Butylbenzene | 91 | 10.491 | 10.490 | (1.032) | 1030869 | 48.7630 | 48.76 |
| | 88 1,2-Dichlorobenzene | 146 | 10.506 | 10.505 | (1.033) | 805152 | 48.4300 | 48.42 |

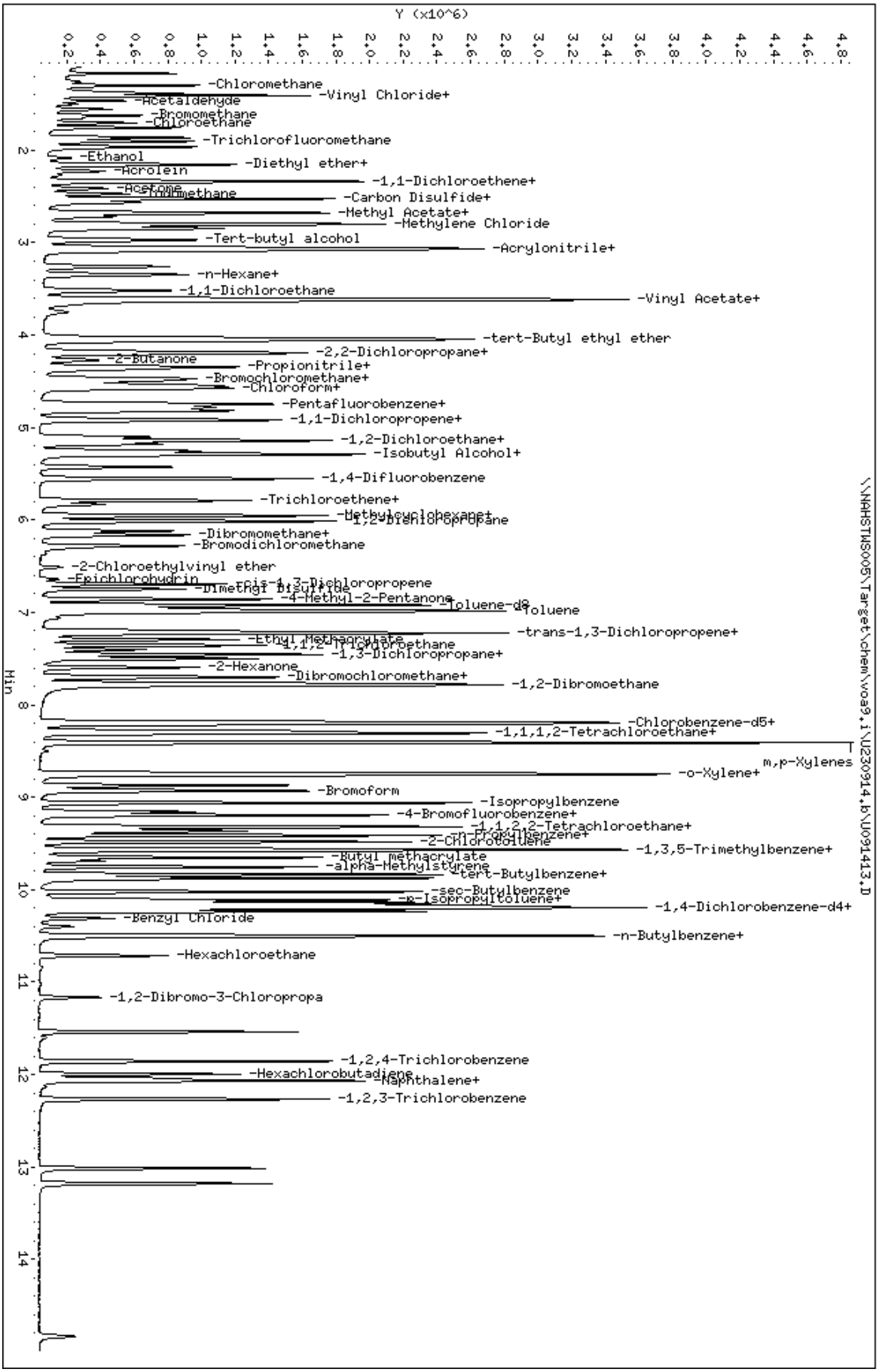
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|---|---|---|---|---|---|---|---|
| 89 | 1,2-Dibromo-3-Chloropropane | 155 | 11.165 | 11.169 (1.098) | 72413 | 51.6619 | 51.66 |
| 90 | 1,2,4-Trichlorobenzene | 180 | 11.855 | 11.859 (1.166) | 521982 | 55.1514 | 55.15 |

Data File: \\NAHSTWS005\Target\chem\voa9.i\U230914.b\U091413.D Page 3
Report Date: 18-Sep-2023 13:23

| | Compounds | QUANT SIG MASS | RT | EXP RT | REL RT | RESPONSE | CONCENTRATIONS ON-COLUMN ( ug/l) | FINAL ( ug/l) |
|---|---|---|---|---|---|---|---|---|
| | 91 Hexachlorobutadiene | 225 | 11.998 | 11.997 | (1.180) | 204226 | 48.0923 | 48.09 |
| | 92 Naphthalene | 128 | 12.065 | 12.065 | (1.187) | 1329508 | 51.2430 | 51.24 |
| | 93 1,2,3-Trichlorobenzene | 180 | 12.268 | 12.267 | (1.206) | 518198 | 57.6699 | 57.66 |
| M | 94 1,2-Dichloroethylene (total) | 96 | | | | 827421 | 97.5206 | 97.52 |
| M | 95 Xylenes (total) | 106 | | | | 1885733 | 142.615 | 142.61 |
| | 135 1,4-Dioxane | 88 | 6.172 | 6.172 | (1.282) | 101350 | 914.455 | 914.45 |
| | 141 Cyclohexane | 56 | 4.781 | 4.781 | (0.993) | 490305 | 47.4109 | 47.41 |
| | 138 Freon TF | 101 | 2.337 | 2.337 | (0.485) | 309471 | 49.3545 | 49.35 |
| | 140 1,3-Butadiene | 54 | 1.408 | 1.407 | (0.292) | 417668 | 46.3672 | 46.36 |
| | 147 Methylcyclohexane | 55 | 5.951 | 5.951 | (1.072) | 885318 | 49.9921 | 49.99 |
| | 146 Methyl Acetate | 43 | 2.716 | 2.716 | (0.564) | 440005 | 47.5945 | 47.59 |
| | 148 Tert-Butyl alcohol | 59 | 2.971 | 2.970 | (0.617) | 939019 | 1005.11 | 1005.10 |
| | 149 Isopropyl Alcohol | 45 | 2.566 | 2.566 | (0.533) | 648816 | 968.058 | 968.05 |
| | 72 trans-1,4-Dichloro-2-butene | 53 | 9.377 | 9.377 | (1.146) | 74288 | 43.6516 | 43.65 |
| | 12 Isobutyl Alcohol | 43 | 5.291 | 5.291 | (1.099) | 1108543 | 972.553 | 972.55 |
| | 13 Acetonitrile | 39 | 2.675 | 2.674 | (0.555) | 566596 | 487.050 | 487.04 |
| | 14 Allyl Chloride | 41 | 2.675 | 2.674 | (0.555) | 1282405 | 47.4353 | 47.43 |
| | 25 Methacrylonitrile | 41 | 4.497 | 4.500 | (0.934) | 323055 | 53.8984 | 53.89 |
| | 40 Methyl Methacrylate | 41 | 6.157 | 6.161 | (1.279) | 337141 | 53.9972 | 53.99 |
| | 4 Propionitrile | 54 | 4.343 | 4.343 | (0.902) | 802797 | 486.022 | 486.02 |
| | 136 n-Hexane | 57 | 3.346 | 3.345 | (0.695) | 423164 | 48.3941 | 48.39 |
| | 194 Acetaldehyde | 44 | 1.464 | 1.464 | (0.304) | 277537 | 183.566 | 183.56(M) |
| | 131 Methyl Acrylate | 55 | 4.373 | 4.373 | (0.908) | 616486 | 51.9449 | 51.94 |
| | 200 Dimethyl Disulfide | 94 | 6.746 | 6.745 | (0.824) | 396963 | 44.4489 | 44.44 |
| | 23 Chloroprene | 53 | 2.161 | 2.161 | (0.449) | 155216 | 50.8747 | 50.87(M) |
| | 49 Ethyl Methacrylate | 69 | 7.293 | 7.293 | (1.313) | 527359 | 50.0543 | 50.05 |
| | 166 1,2,3-Trimethylbenzene | 105 | 10.232 | 10.235 | (1.006) | 1166243 | 52.2956 | 52.29 |
| | 167 Ethanol | 45 | 2.082 | 2.086 | (0.433) | 142939 | 890.813 | 890.81 |
| | 164 Dicyclopentadiene | 66 | 10.198 | 10.198 | (1.003) | 1313737 | 46.0400 | 46.03 |
| | 145 alpha-Methylstyrene | 118 | 9.752 | 9.752 | (0.959) | 450685 | 51.5793 | 51.57 |
| | 142 Tetrahydrofuran | 42 | 4.545 | 4.549 | (0.944) | 193559 | 101.167 | 101.16 |
| | 156 Diisopropyl ether | 45 | 3.623 | 3.623 | (0.752) | 1601368 | 48.5394 | 48.53 |
| | 151 4-Methyl-2-pentanol | 45 | 7.222 | 7.222 | (1.300) | 1576918 | 1031.41 | 1031.41 |
| | 150 Allyl alcohol | 57 | 3.346 | 3.345 | (0.695) | 423164 | 959.625 | 959.62 |
| | 86 Benzyl Chloride | 91 | 10.311 | 10.310 | (1.260) | 276875 | 48.5185 | 48.51 |
| | 162 Butyl acrylate | 55 | 8.733 | 8.736 | (1.067) | 677049 | 51.8592 | 51.85 |
| | 139 Diethyl ether | 59 | 2.146 | 2.150 | (0.446) | 364931 | 48.2944 | 48.29 |
| | 203 2-Ethylhexyl Acrylate | 55 | 12.043 | 12.042 | (1.184) | 277284 | 53.0411 | 53.04 |
| | 134 Cyclohexanone | 55 | 9.156 | 9.156 | (0.900) | 350326 | 970.262 | 970.26 |
| | 130 Ethyl Acetate | 43 | 4.343 | 4.346 | (0.902) | 570589 | 50.3095 | 50.30 |
| | 189 n-Butyl acetate | 43 | 7.705 | 7.709 | (0.941) | 622183 | 46.1953 | 46.19 |
| | 182 Epichlorohydrin | 57 | 6.633 | 6.637 | (1.194) | 15998 | 169.075 | 169.07(M) |
| | 132 n-Butanol | 56 | 5.831 | 5.834 | (1.211) | 222168 | 947.898 | 947.89 |
| | 133 Ethyl Acrylate | 55 | 5.951 | 5.951 | (1.236) | 885318 | 49.9291 | 49.92 |
| | 163 Butyl methacrylate | 41 | 9.651 | 9.651 | (0.949) | 412686 | 48.1493 | 48.14 |
| | 174 tert-Amyl methyl ether | 73 | 5.291 | 5.291 | (1.099) | 827355 | 48.8858 | 48.88(M) |
| | 175 tert-Butyl ethyl ether | 59 | 4.054 | 4.054 | (0.842) | 1166776 | 49.9897 | 49.98 |
| | 188 Isopropyl acetate | 43 | 5.291 | 5.291 | (0.953) | 1108439 | 50.5796 | 50.57 |
| | 179 Hexachloroethane | 166 | 10.712 | 10.712 | (1.053) | 88328 | 44.0287 | 44.02 |

QC Flag Legend

M - Compound response manually integrated.




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Column phase: DB624

Instrument: VOA9,i
Operator: PC
Column diameter: 0.18

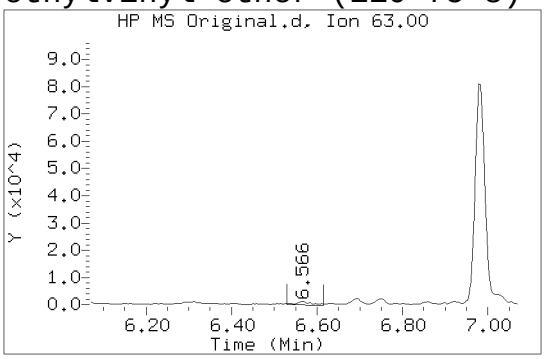
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## 2-Chloroethylvinyl ether (110-75-8)

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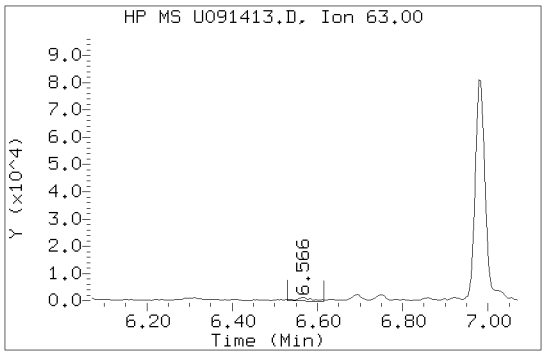
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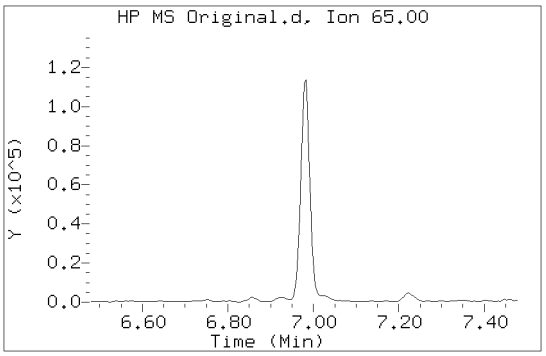

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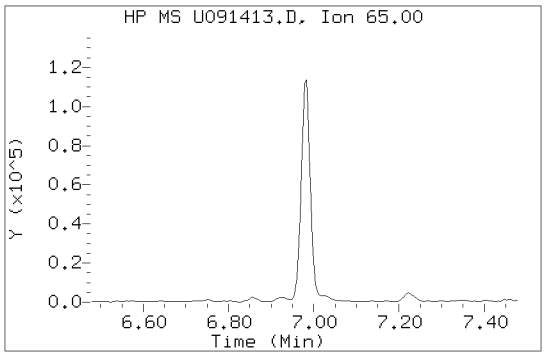

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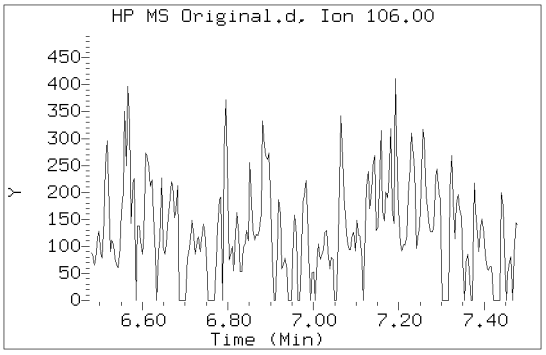

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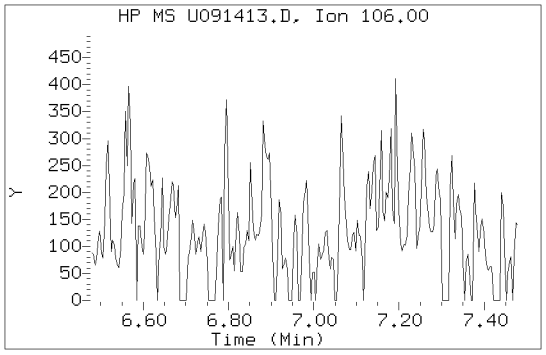

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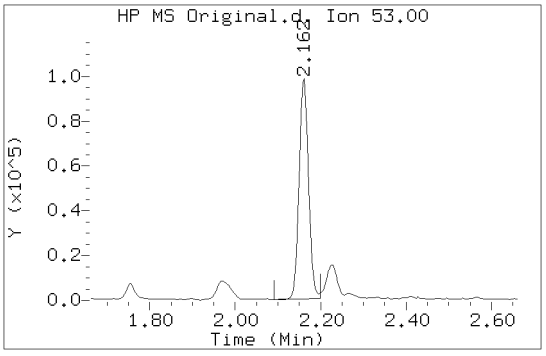



## Chloroprene (126-99-8)

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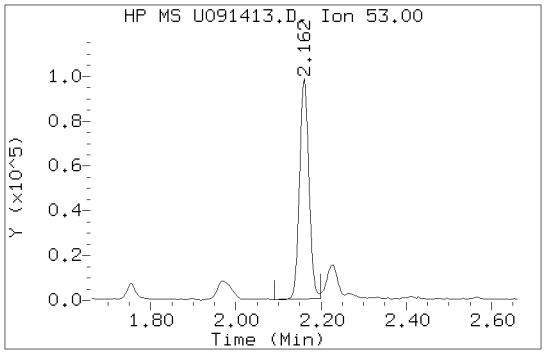
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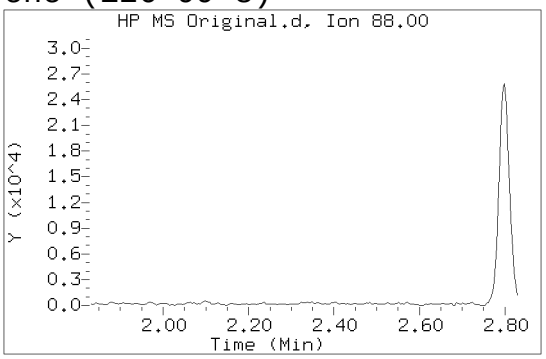
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## Chloroprene (126-99-8)

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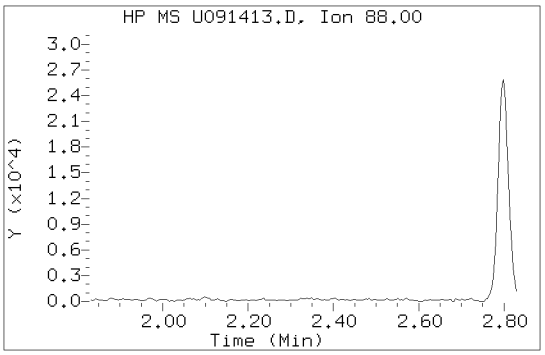
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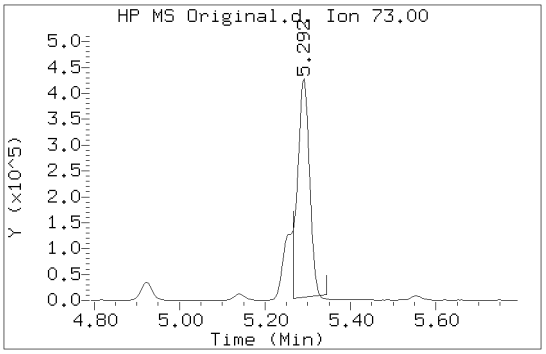



## tert-Amyl methyl ether (974-05-08)

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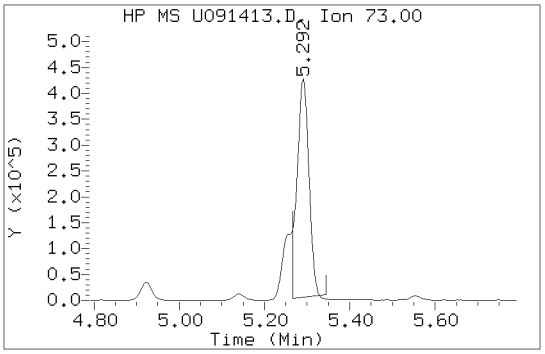
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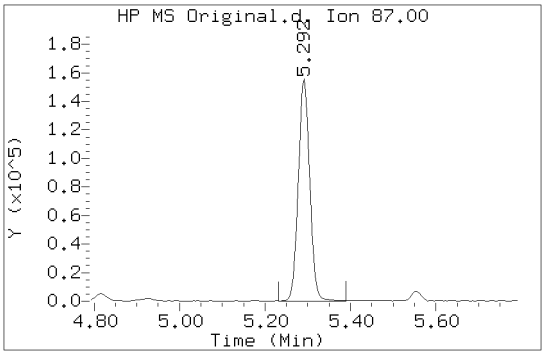

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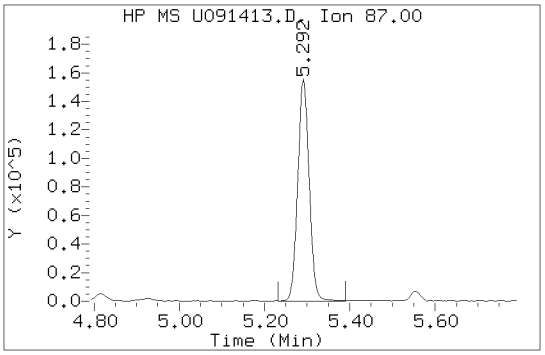

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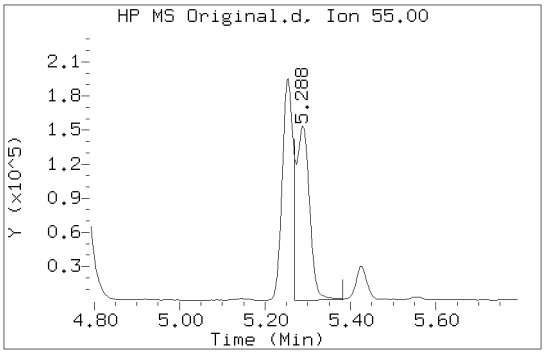

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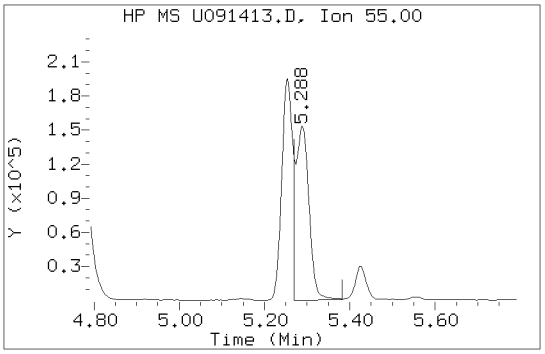

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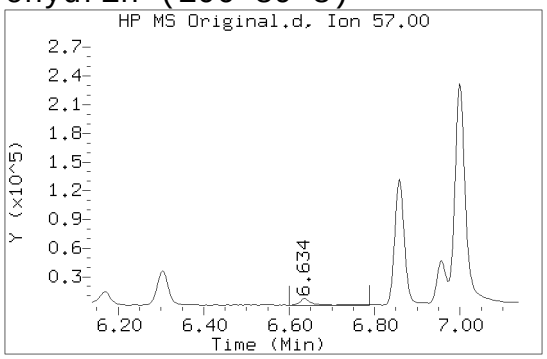


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LabSampID : CCV

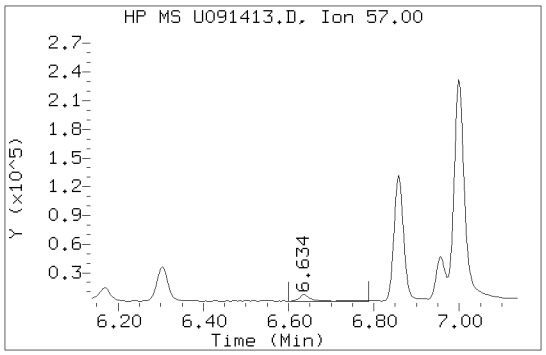
## Epichlorohydrin (106-89-8)

Reason Code:

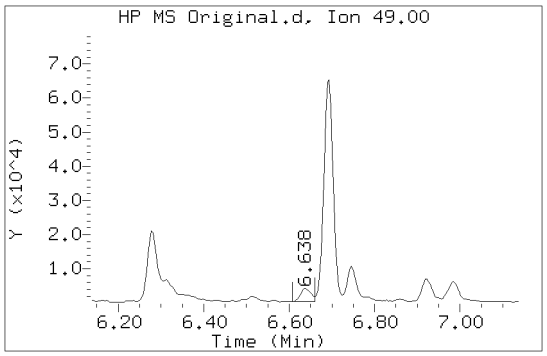
BEFORE
MASS
57
AREA
15998
HEIGHT
7408
18-Sep-2023
12:05
linh
pham



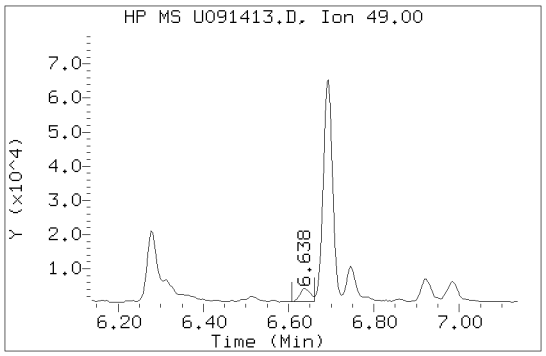

AFTER
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AREA
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HEIGHT
7408
18-Sep-2023
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linh
pham




BEFORE
MASS
49
AREA
6932
HEIGHT
3899
18-Sep-2023
12:05
linh
pham



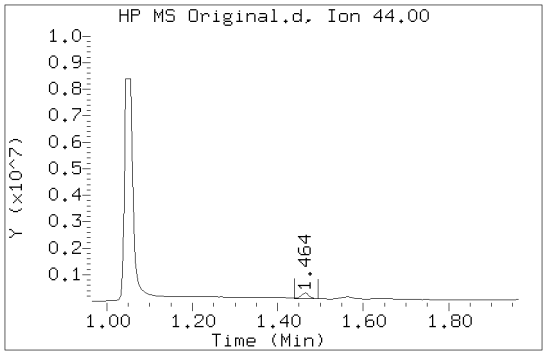

AFTER
MASS
49
AREA
6932
HEIGHT
3899
18-Sep-2023
13:23
linh
pham



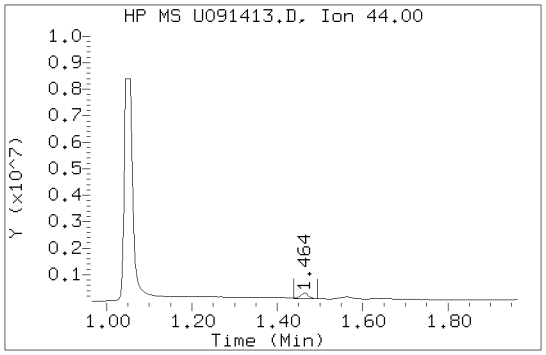

## Acetaldehyde (75-07-0)

Reason Code:

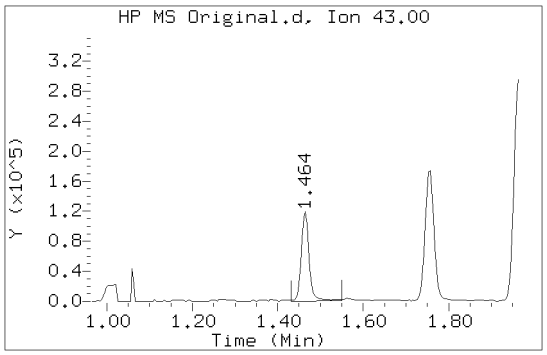
BEFORE
MASS
44
AREA
277537
HEIGHT
213565
18-Sep-2023
12:05
linh
pham



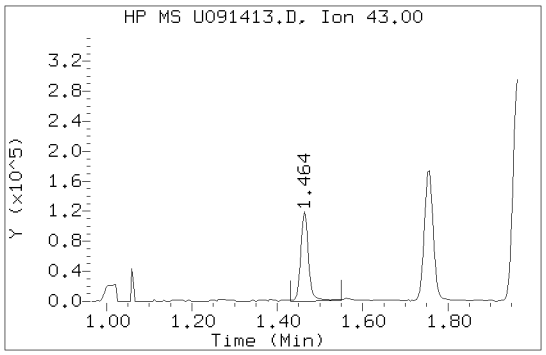

AFTER
MASS
44
AREA
277537
HEIGHT
213565
18-Sep-2023
13:23
linh
pham




BEFORE
MASS
43
AREA
156467
HEIGHT
118995
18-Sep-2023
12:05
linh
pham




AFTER
MASS
43
AREA
156467
HEIGHT
118995
18-Sep-2023
13:23
linh
pham



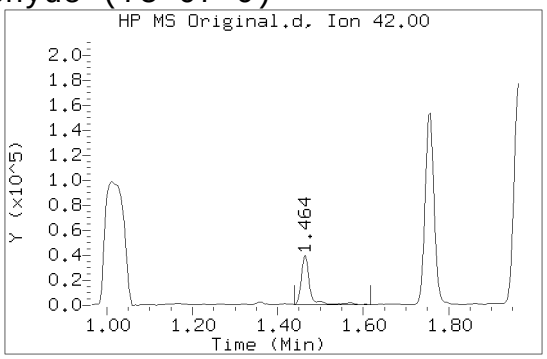
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Inj Date : 14-SEP-2023 20:13
InstruID : VOA9.i
LabSampID : CCV

Acetaldehyde (75-07-0)

Reason Code:

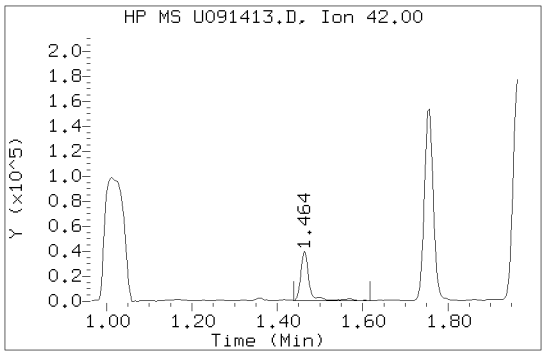
BEFORE

MASS
42
AREA
55755
HEIGHT
39637
18-Sep-2023
12:05
linh
pham




AFTER

MASS
42
AREA
55755
HEIGHT
39637
18-Sep-2023
13:23
linh
pham



right solutions.
right partner.

# Raw Data VOA9 447039

# Volatiles by EPA Volatiles Organics by Method 8260C

Workorder

HS23091194

Client

Bhate Environmental Associates, Inc.

Project

GROUNDWATER TREATMENT PLANT
BI-WEEKLY SAMPLES

09/26/2023

ALS Environmental–Houston Laboratory
10450 Stancliff Road, Suite 210, Houston, TX 77099
Phone (281) 530-5656 Fax (281) 530-5887
www.alsglobal.com

Data File: \\NAHSTWS005\Target\chem\voa9.i\U230921.b\U092101.D Page 1
Report Date: 21-Sep-2023 22:10

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa9.i\U230921.b\U092101.D
Lab Smp Id: BFB Client Smp ID: BFB
Inj Date : 21-SEP-2023 10:44
Operator : PC Inst ID: VOA9.i
Smp Info : BFB;BFB;3;;BFB
Misc Info : V9;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa9.i\U230921.b\bfb.m
Meth Date : 27-Jan-2023 08:08 apoluri Quant Type: ISTD
Cal Date : 30-MAR-2018 18:09 Cal File: U033003.d
Als bottle: 1 QC Sample: BFB
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.14 Sample Matrix: WATER
Processing Host: NAHSTW7051

Concentration Formula: Amt * DF * Uf * Vf * Vi * CpndVariable

| Name | Value | Description |
|---|---|---|
| DF | 1.000 | Dilution Factor |
| Uf | 5.000 | ng unit correction factor |
| Vf | 1.000 | Volumetric correction factor |
| Vi | 2.000 | Injection Volume |
| Cpnd Variable | | Local Compound Variable |

| | | | | | CONCENTRATIONS ON-COL ( ug/L) | FINAL ( ug/l) | | |
|---|---|---|---|---|---|---|---|---|
| RT | EXP RT | REL RT | MASS | RESPONSE | | | TARGET RANGE | RATIO |
| 1 bfb | | | | | | | CAS #: 460-00-4 | |
| 9.194 | 9.180 | ( 0.000) | 95 | 79432 | | | 0.00- 100.00 | 100.00 |
| 9.194 | 9.180 | ( 0.000) | 50 | 17112 | | | 15.00- 40.00 | 21.54 |
| 9.194 | 9.180 | ( 0.000) | 75 | 40512 | | | 30.00- 60.00 | 51.00 |
| 9.194 | 9.180 | ( 0.000) | 96 | 6673 | | | 5.00- 9.00 | 8.40 |
| 9.194 | 9.180 | ( 0.000) | 173 | 0 | 0.0 | 0.0 | 0.00- 2.00 | 0.00 |
| 9.194 | 9.180 | ( 0.000) | 174 | 66232 | | | 50.00- 0.00 | 83.38 |
| 9.194 | 9.180 | ( 0.000) | 175 | 5945 | | | 5.00- 9.00 | 8.98 |
| 9.194 | 9.180 | ( 0.000) | 176 | 63376 | | | 95.00- 101.00 | 95.69 |
| 9.194 | 9.180 | ( 0.000) | 177 | 4197 | | | 5.00- 9.00 | 6.62 |

| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 95 | Base Peak, 100% relative abundance | 100.00 |
| 50 | 15.00 - 40.00% of mass 95 | 21.54 |
| 75 | 30.00 - 60.00% of mass 95 | 51.00 |
| 96 | 5.00 - 9.00% of mass 95 | 8.40 |
| 173 | Less than 2.00% of mass 174 | 0.00 ( 0.00) |
| 174 | Greater than 50.00% of mass 95 | 83.38 |
| 175 | 5.00 - 9.00% of mass 174 | 7.48 ( 8.98) |
| 176 | 95.00 - 101.00% of mass 174 | 79.79 ( 95.69) |
| 177 | 5.00 - 9.00% of mass 176 | 5.28 ( 6.62) |

Data File: U092101.D
Spectrum: Scan 2293 ( 9.19)
Location of Maximum: 95.00
Number of points: 201

| m/z | Y | m/z | Y | m/z | Y | m/z | Y |
|---|---|---|---|---|---|---|---|
| 36.00 | 1325 | 88.00 | 3675 | 135.00 | 226 | 193.50 | 135 |
| 37.00 | 5403 | 89.30 | 68 | 136.10 | 126 | 194.60 | 85 |
| 38.00 | 5579 | 89.90 | 105 | 136.90 | 354 | 195.70 | 51 |
| 39.10 | 8566 | 91.00 | 645 | 137.80 | 114 | 198.30 | 77 |
| 40.00 | 2498 | 92.00 | 2328 | 139.10 | 243 | 199.00 | 64 |
| 41.10 | 8289 | 93.00 | 3612 | 139.80 | 213 | 200.40 | 72 |
| 42.00 | 9851 | 94.10 | 11840 | 141.00 | 2171 | 202.60 | 91 |
| 43.00 | 10591 | 95.00 | 79432 | 141.90 | 2225 | 204.30 | 62 |
| 44.10 | 4117 | 96.10 | 6673 | 142.90 | 1179 | 205.50 | 118 |
| 45.00 | 5461 | 97.10 | 612 | 143.60 | 127 | 207.10 | 98 |
| 45.90 | 438 | 98.00 | 4317 | 144.50 | 227 | 208.00 | 184 |
| 46.90 | 1503 | 98.90 | 226 | 145.20 | 187 | 221.10 | 58 |
| 48.00 | 946 | 100.20 | 229 | 145.70 | 156 | 221.80 | 70 |
| 49.00 | 4716 | 101.70 | 87 | 147.00 | 125 | 223.10 | 81 |
| 50.00 | 17112 | 102.20 | 114 | 147.80 | 135 | 227.90 | 125 |
| 51.00 | 5692 | 102.50 | 156 | 148.80 | 96 | 233.50 | 146 |
| 52.20 | 699 | 103.10 | 289 | 149.90 | 87 | 236.40 | 133 |
| 53.00 | 972 | 103.90 | 611 | 150.90 | 70 | 241.70 | 91 |
| 54.10 | 1437 | 104.90 | 450 | 151.60 | 108 | 243.80 | 81 |
| 55.00 | 11460 | 106.00 | 524 | 152.60 | 174 | 248.30 | 58 |
| 56.10 | 2963 | 107.10 | 311 | 153.70 | 100 | 249.80 | 116 |
| 57.00 | 3375 | 107.70 | 181 | 154.80 | 331 | 252.00 | 140 |
| 58.10 | 2974 | 108.70 | 238 | 156.10 | 74 | 258.80 | 111 |
| 59.00 | 11596 | 109.80 | 210 | 157.00 | 432 | 259.60 | 58 |
| 60.00 | 1293 | 110.80 | 177 | 157.50 | 135 | 265.90 | 52 |
| 61.00 | 4824 | 112.00 | 118 | 158.90 | 122 | 266.60 | 116 |
| 62.00 | 4434 | 112.60 | 228 | 161.00 | 243 | 268.50 | 66 |
| 63.00 | 3417 | 113.70 | 143 | 161.70 | 93 | 271.80 | 69 |
| 64.00 | 479 | 114.80 | 222 | 163.40 | 69 | 272.30 | 59 |
| 65.00 | 651 | 115.90 | 501 | 166.80 | 97 | 282.40 | 55 |
| 66.00 | 648 | 117.00 | 598 | 168.00 | 307 | 283.20 | 121 |
| 67.00 | 1100 | 117.80 | 414 | 168.90 | 186 | 289.50 | 64 |
| 68.00 | 10386 | 118.90 | 681 | 169.90 | 218 | 294.40 | 124 |
| 69.00 | 11252 | 120.20 | 225 | 170.90 | 1055 | 296.90 | 98 |
| 70.10 | 3716 | 121.10 | 89 | 171.80 | 621 | 298.50 | 64 |
| 71.10 | 336 | 121.70 | 77 | 172.20 | 633 | 311.40 | 70 |
| 72.00 | 847 | 123.10 | 73 | 173.90 | 66232 | 313.60 | 87 |
| 73.00 | 4022 | 123.70 | 219 | 175.00 | 5945 | 317.00 | 52 |
| 74.00 | 13736 | 124.20 | 157 | 175.90 | 63376 | 321.10 | 52 |
| 75.00 | 40512 | 125.80 | 161 | 176.90 | 4197 | 326.20 | 66 |
| 76.00 | 3418 | 126.90 | 4023 | 177.80 | 224 | 328.80 | 78 |
| 77.00 | 734 | 127.90 | 1208 | 178.20 | 77 | 335.00 | 51 |
| 79.00 | 3099 | 128.80 | 326 | 181.20 | 57 | 338.60 | 69 |
| 80.00 | 1690 | 129.50 | 228 | 184.50 | 157 | 341.00 | 67 |
| 80.90 | 3357 | 130.00 | 203 | 185.00 | 286 | 341.80 | 61 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 82.00 | 866 | 131.00 | 202 | 186.00 | 2027 | 343.90 | 97 |
| 83.00 | 1007 | 131.50 | 67 | 186.90 | 81 | 346.30 | 65 |
| 83.90 | 153 | 132.00 | 76 | 189.50 | 96 | 346.80 | 51 |
| 85.00 | 214 | 132.40 | 56 | 190.40 | 74 | | |
| 85.60 | 161 | 133.70 | 67 | 191.90 | 121 | | |
| 87.10 | 3205 | 134.20 | 148 | 192.50 | 86 | | |

Data File: \\nahstws005\target\chem\voa9.i\u230921.b\u092101.d Page 1

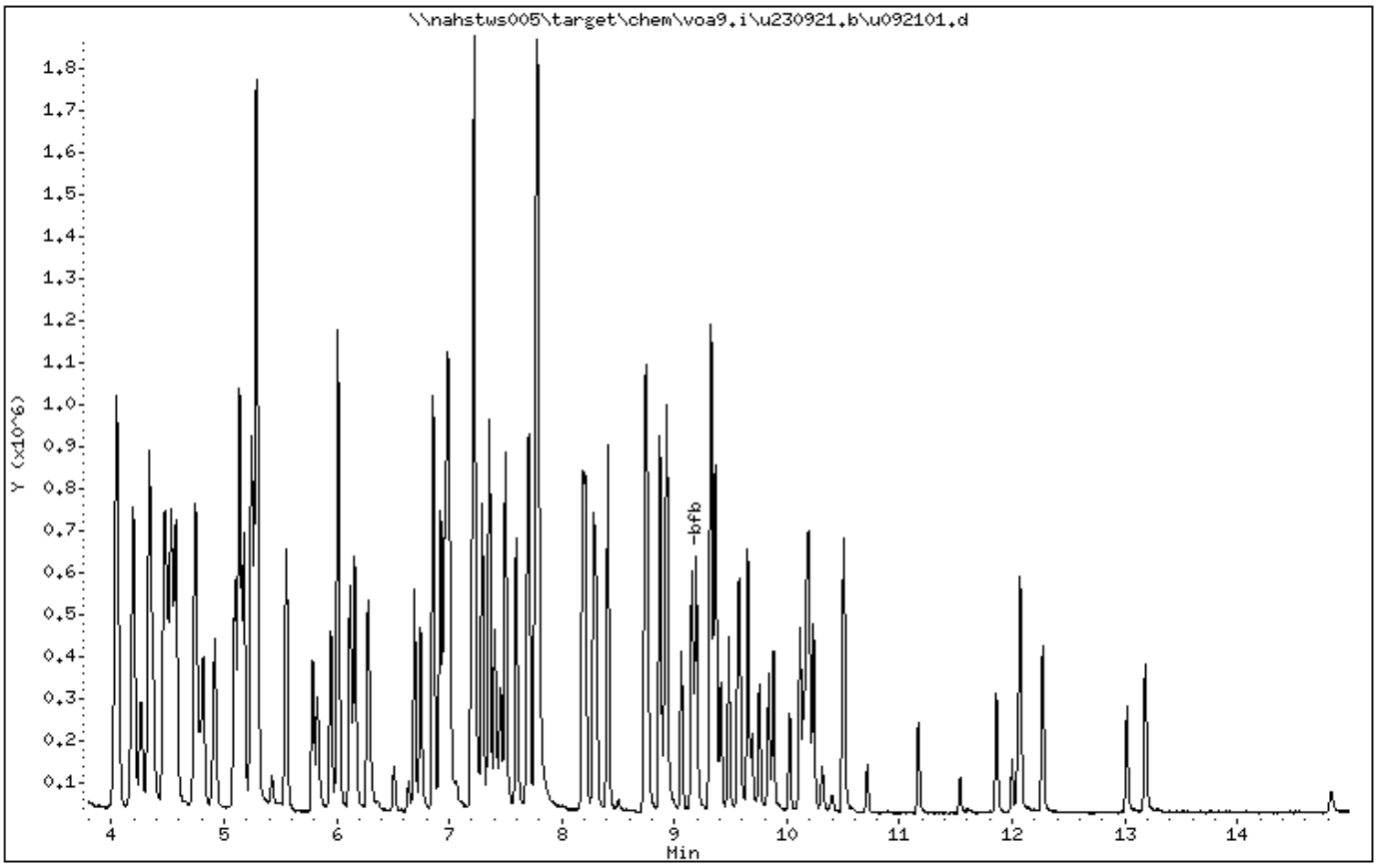
Date : 21-SEP-2023 10:44

Client ID: BFB Instrument: VOA9.i

Sample Info: BFB;BFB;3;;BFB

Volume Injected (uL): 2.0 Operator: PC

Column phase: DB624 Column diameter: 0.25



Data File : \\nahstws005\target\chem\voa9.i\u230921.b\u092101.d
Inj Date  : 21-SEP-2023 10:44
InstruID  : VOA9.i
LabSampID : BFB

NO MANUAL INTEGRATIONS

Data File: \\NAHSTWS005\Target\chem\voa9.i\U230921.b\U092103.D  Page 1
Report Date: 21-Sep-2023 12:08

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa9.i\U230921.b\U092103.D
Lab Smp Id: CCV  Client Smp ID: CCV
Inj Date  : 21-SEP-2023 11:28
Operator  : PC  Inst ID: VOA9.i
Smp Info  : CCV;CCV;2;;;
Misc Info : V9;WATER;0;1;
Comment   :
Method    : \\nahstws005\Target\chem\voa9.i\U230921.b\8260C.m
Meth Date : 21-Sep-2023 11:45  Quant Type: ISTD
Cal Date  : 14-SEP-2023 18:22  Cal File: U091408.D
Als bottle: 2  Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE  Compound Sublist: 8260_GB.sub
Target Version:  4.14
Processing Host: NAHSTWS005

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

| Name | Value | Description |
|---|---|---|
| DF | 1.000 | Dilution Factor |
| Uf | 5.000 | ng unit correction factor |
| Vo | 5.000 | sample purged |
| Cpnd Variable | | Local Compound Variable |

| Compounds | QUANT SIG MASS | RT | EXP RT | REL RT | RESPONSE | AMOUNTS CAL-AMT ( ug/l) | ON-COL ( ug/l) |
|---|---|---|---|---|---|---|---|
| * 1 Pentafluorobenzene | 168 | 4.811 | 4.811 | (1.000) | 694046 | 50.0000 | |
| 2 Dichlorodifluoromethane | 85 | 1.156 | 1.156 | (0.240) | 333097 | 50.0000 | 43.93 |
| 3 Chloromethane | 50 | 1.291 | 1.291 | (0.268) | 658522 | 50.0000 | 51.42 |
| 5 Vinyl Chloride | 62 | 1.370 | 1.370 | (0.285) | 483210 | 50.0000 | 54.84 |
| 6 Bromomethane | 94 | 1.614 | 1.614 | (0.335) | 248118 | 50.0000 | 57.66 |
| 7 Chloroethane | 64 | 1.692 | 1.692 | (0.352) | 345035 | 50.0000 | 53.25 |
| 8 Trichlorofluoromethane | 101 | 1.891 | 1.891 | (0.393) | 607616 | 50.0000 | 53.75 |
| 9 Acrolein | 56 | 2.258 | 2.258 | (0.469) | 56650 | 100.000 | 95.12 |
| 10 Acetone | 43 | 2.401 | 2.401 | (0.499) | 420595 | 100.000 | 119.89(M) |
| 11 1,1-Dichloroethene | 96 | 2.326 | 2.326 | (0.483) | 349577 | 50.0000 | 50.88 |
| 15 Iodomethane | 142 | 2.461 | 2.461 | (0.512) | 428593 | 100.000 | 106.04 |
| 16 Acrylonitrile | 53 | 3.057 | 3.057 | (0.635) | 440452 | 100.000 | 108.79 |
| 17 Methylene Chloride | 84 | 2.787 | 2.787 | (0.579) | 450482 | 50.0000 | 51.62 |
| 18 Methyl tert-butyl ether | 73 | 3.072 | 3.072 | (0.639) | 1091455 | 50.0000 | 55.95 |
| 19 Carbon Disulfide | 76 | 2.513 | 2.513 | (0.522) | 2037967 | 100.000 | 109.82 |
| 20 trans-1,2-Dichloroethene | 96 | 3.053 | 3.053 | (0.635) | 385511 | 50.0000 | 53.49 |
| 21 Vinyl Acetate | 43 | 3.600 | 3.600 | (0.748) | 2914536 | 100.000 | 114.31 |
| 22 1,1-Dichloroethane | 63 | 3.507 | 3.507 | (0.729) | 766429 | 50.0000 | 53.02 |
| 24 2-Butanone | 43 | 4.260 | 4.260 | (0.885) | 470298 | 100.000 | 111.79 |
| 26 2,2-Dichloropropane | 77 | 4.178 | 4.178 | (0.868) | 487581 | 50.0000 | 55.71 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 27 cis-1,2-Dichloroethene | 96 | 4.193 | 4.193 (0.871) | 435627 | 50.0000 | 52.86 |
| 28 Chloroform | 83 | 4.568 | 4.568 (0.949) | 742644 | 50.0000 | 52.91 |

| | Compounds | QUANT SIG MASS | RT | EXP RT | REL RT | RESPONSE | AMOUNTS CAL-AMT ( ug/l) | ON-COL ( ug/l) |
|---|---|---|---|---|---|---|---|---|
| | 29 Bromochloromethane | 128 | 4.466 | 4.466 | (0.928) | 220140 | 50.0000 | 50.98 |
| $ | 30 Dibromofluoromethane | 113 | 4.744 | 4.744 | (0.986) | 323985 | 50.0000 | 51.15 |
| | 31 1,1,1-Trichloroethane | 97 | 4.736 | 4.736 | (0.984) | 488619 | 50.0000 | 51.27 |
| | 32 1,1-Dichloropropene | 75 | 4.916 | 4.916 | (0.886) | 418974 | 50.0000 | 49.19 |
| | 33 1,2-Dichloroethane | 62 | 5.175 | 5.175 | (0.932) | 505328 | 50.0000 | 48.72 |
| | 34 Carbon Tetrachloride | 117 | 4.905 | 4.905 | (0.884) | 374095 | 50.0000 | 49.09 |
| $ | 35 1,2-Dichloroethane-d4 | 65 | 5.092 | 5.092 | (1.058) | 365708 | 50.0000 | 51.13 |
| * | 36 1,4-Difluorobenzene | 114 | 5.550 | 5.550 | (1.000) | 1072816 | 50.0000 | |
| | 37 Benzene | 78 | 5.134 | 5.134 | (0.925) | 1343768 | 50.0000 | 49.86 |
| | 38 Trichloroethene | 130 | 5.786 | 5.786 | (1.043) | 345427 | 50.0000 | 44.07 |
| | 39 Bromodichloromethane | 83 | 6.277 | 6.277 | (1.131) | 433870 | 50.0000 | 49.64 |
| | 41 2-Chloroethylvinyl ether | 63 | 6.554 | 6.554 | (1.181) | 3233 | 100.000 | 83.53(M) |
| | 42 1,2-Dichloropropane | 63 | 6.007 | 6.007 | (1.082) | 380785 | 50.0000 | 53.51 |
| | 44 Dibromomethane | 93 | 6.116 | 6.116 | (1.102) | 227590 | 50.0000 | 46.45 |
| | 45 4-Methyl-2-Pentanone | 43 | 6.854 | 6.854 | (0.837) | 819012 | 100.000 | 105.59 |
| | 46 cis-1,3-Dichloropropene | 75 | 6.689 | 6.689 | (1.205) | 505934 | 50.0000 | 46.88 |
| * | 47 Chlorobenzene-d5 | 117 | 8.185 | 8.185 | (1.000) | 1044011 | 50.0000 | |
| $ | 48 Toluene-d8 | 98 | 6.922 | 6.922 | (0.846) | 1172412 | 50.0000 | 50.93 |
| | 50 Toluene | 91 | 6.978 | 6.978 | (0.853) | 1466983 | 50.0000 | 52.32 |
| | 51 trans-1,3-Dichloropropene | 75 | 7.195 | 7.195 | (1.297) | 418272 | 50.0000 | 47.37 |
| | 52 2-Hexanone | 43 | 7.593 | 7.593 | (0.928) | 555790 | 100.000 | 117.42 |
| | 53 1,1,2-Trichloroethane | 83 | 7.357 | 7.357 | (0.899) | 293674 | 50.0000 | 48.04 |
| | 54 1,3-Dichloropropane | 76 | 7.499 | 7.499 | (0.916) | 621206 | 50.0000 | 50.52 |
| | 55 Dibromochloromethane | 129 | 7.690 | 7.690 | (0.940) | 367867 | 50.0000 | 50.55 |
| | 56 Tetrachloroethene | 164 | 7.454 | 7.454 | (0.911) | 302240 | 50.0000 | 46.27 |
| | 57 1,2-Dibromoethane | 107 | 7.784 | 7.784 | (0.951) | 357699 | 50.0000 | 48.68 |
| | 58 1-Chlorohexane | 55 | 8.196 | 8.196 | (1.477) | 313839 | 50.0000 | 48.42 |
| | 59 Chlorobenzene | 112 | 8.208 | 8.208 | (1.003) | 988200 | 50.0000 | 47.65 |
| | 60 1,1,1,2-Tetrachloroethane | 131 | 8.282 | 8.282 | (1.012) | 340142 | 50.0000 | 48.81 |
| | 61 Ethylbenzene | 106 | 8.305 | 8.305 | (1.015) | 466822 | 50.0000 | 50.28 |
| | 62 m,p-Xylenes | 106 | 8.406 | 8.406 | (1.027) | 1179452 | 100.000 | 101.02 |
| | 63 o-Xylene | 106 | 8.747 | 8.747 | (1.069) | 585894 | 50.0000 | 48.28 |
| | 64 Styrene | 104 | 8.759 | 8.759 | (1.070) | 944993 | 50.0000 | 50.72 |
| | 66 Bromoform | 173 | 8.920 | 8.920 | (1.090) | 230460 | 50.0000 | 42.52 |
| | 67 Isopropylbenzene | 105 | 9.062 | 9.062 | (1.107) | 1350852 | 50.0000 | 46.63 |
| | 68 1,1,2,2-Tetrachloroethane | 83 | 9.328 | 9.328 | (0.917) | 527914 | 50.0000 | 49.37 |
| $ | 69 4-Bromofluorobenzene | 95 | 9.193 | 9.193 | (1.123) | 505860 | 50.0000 | 50.17 |
| * | 70 1,4-Dichlorobenzene-d4 | 152 | 10.172 | 10.172 | (1.000) | 550378 | 50.0000 | |
| | 71 1,2,3-Trichloropropane | 75 | 9.362 | 9.362 | (0.920) | 469051 | 50.0000 | 51.47 |
| | 73 n-Propylbenzene | 91 | 9.411 | 9.411 | (0.925) | 1508715 | 50.0000 | 44.63 |
| | 74 Bromobenzene | 156 | 9.317 | 9.317 | (0.916) | 422841 | 50.0000 | 48.33 |
| | 75 1,3,5-Trimethylbenzene | 105 | 9.561 | 9.561 | (0.940) | 1035649 | 50.0000 | 50.02 |
| | 76 2-Chlorotoluene | 91 | 9.482 | 9.482 | (0.932) | 1001806 | 50.0000 | 49.02 |
| | 77 4-Chlorotoluene | 91 | 9.576 | 9.576 | (0.941) | 1192968 | 50.0000 | 49.74 |
| | 78 tert-Butylbenzene | 119 | 9.838 | 9.838 | (0.967) | 934235 | 50.0000 | 46.89 |
| | 79 1,2,4-Trimethylbenzene | 105 | 9.876 | 9.876 | (0.971) | 1080487 | 50.0000 | 50.77 |
| | 81 sec-Butylbenzene | 105 | 10.022 | 10.022 | (0.985) | 1236746 | 50.0000 | 45.38 |
| | 82 p-Isopropyltoluene | 119 | 10.146 | 10.146 | (0.997) | 970362 | 50.0000 | 44.65 |
| | 83 1,3-Dichlorobenzene | 146 | 10.116 | 10.116 | (0.994) | 719838 | 50.0000 | 46.65 |
| | 84 1,4-Dichlorobenzene | 146 | 10.191 | 10.191 | (1.002) | 802184 | 50.0000 | 46.27 |
| | 87 n-Butylbenzene | 91 | 10.490 | 10.490 | (1.031) | 941559 | 50.0000 | 47.07 |
| | 88 1,2-Dichlorobenzene | 146 | 10.505 | 10.505 | (1.033) | 748300 | 50.0000 | 47.42 |

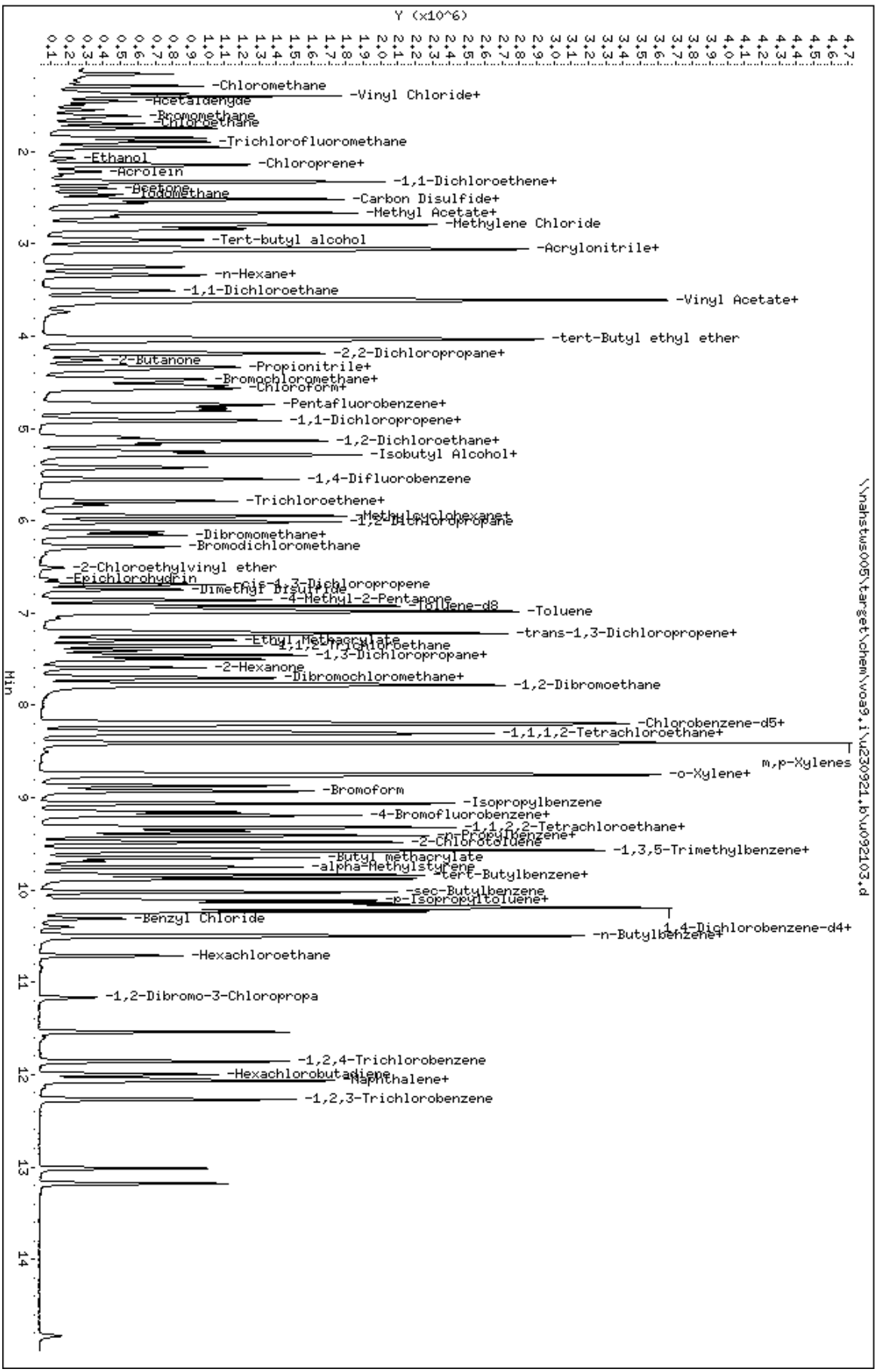
| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 89 | 1,2-Dibromo-3-Chloropropane | 155 | 11.169 | 11.169 (1.098) | 64192 | 50.0000 | 48.25 |
| 90 | 1,2,4-Trichlorobenzene | 180 | 11.859 | 11.859 (1.166) | 428134 | 50.0000 | 47.66 |

Data File: \\NAHSTWS005\Target\chem\voa9.i\U230921.b\U092103.D Page 3
Report Date: 21-Sep-2023 12:08

| | Compounds | QUANT SIG MASS | RT | EXP RT | REL RT | RESPONSE | AMOUNTS CAL-AMT ( ug/l) | ON-COL ( ug/l) |
|---|---|---|---|---|---|---|---|---|
| | 91 Hexachlorobutadiene | 225 | 11.997 | 11.997 | (1.179) | 177243 | 50.0000 | 43.97 |
| | 92 Naphthalene | 128 | 12.065 | 12.065 | (1.186) | 1152504 | 50.0000 | 47.03 |
| | 93 1,2,3-Trichlorobenzene | 180 | 12.267 | 12.267 | (1.206) | 433481 | 50.0000 | 50.82 |
| M | 94 1,2-Dichloroethylene (total) | 96 | | | | 821138 | 100.000 | 106.32 |
| M | 95 Xylenes (total) | 106 | | | | 1765346 | 150.000 | 150.34 |
| | 135 1,4-Dioxane | 88 | 6.168 | 6.168 | (1.282) | 89604 | 1000.00 | 888.17 |
| | 141 Cyclohexane | 56 | 4.777 | 4.777 | (0.993) | 500926 | 50.0000 | 52.91 |
| | 138 Freon TF | 101 | 2.330 | 2.330 | (0.484) | 329237 | 50.0000 | 57.13 |
| | 140 1,3-Butadiene | 54 | 1.396 | 1.396 | (0.290) | 446052 | 50.0000 | 54.40 |
| | 147 Methylcyclohexane | 55 | 5.947 | 5.947 | (1.072) | 878885 | 50.0000 | 55.88 |
| | 146 Methyl Acetate | 43 | 2.708 | 2.708 | (0.563) | 432620 | 50.0000 | 51.40 |
| | 148 Tert-Butyl alcohol | 59 | 2.959 | 2.959 | (0.615) | 912634 | 1000.00 | 1073.17 |
| | 149 Isopropyl Alcohol | 45 | 2.554 | 2.554 | (0.531) | 674878 | 1000.00 | 1106.21 |
| | 72 trans-1,4-Dichloro-2-butene | 53 | 9.377 | 9.377 | (1.146) | 84001 | 50.0000 | 52.47 |
| | 12 Isobutyl Alcohol | 43 | 5.287 | 5.287 | (1.099) | 1086286 | 1000.00 | 1044.12 |
| | 13 Acetonitrile | 39 | 2.667 | 2.667 | (0.554) | 621914 | 500.000 | 587.30 |
| | 14 Allyl Chloride | 41 | 2.667 | 2.667 | (0.554) | 1399276 | 50.0000 | 56.86 |
| | 25 Methacrylonitrile | 41 | 4.493 | 4.493 | (0.934) | 310597 | 50.0000 | 56.92 |
| | 40 Methyl Methacrylate | 41 | 6.157 | 6.157 | (1.280) | 327852 | 50.0000 | 57.68 |
| | 4 Propionitrile | 54 | 4.335 | 4.335 | (0.901) | 814596 | 500.000 | 541.78 |
| | 136 n-Hexane | 57 | 3.338 | 3.338 | (0.694) | 466041 | 50.0000 | 57.67 |
| | 194 Acetaldehyde | 44 | 1.452 | 1.452 | (0.302) | 281452 | 200.000 | 205.42(M) |
| | 131 Methyl Acrylate | 55 | 4.365 | 4.365 | (0.907) | 609556 | 50.0000 | 56.42 |
| | 200 Dimethyl Disulfide | 94 | 6.746 | 6.746 | (0.824) | 359535 | 50.0000 | 43.60 |
| | 23 Chloroprene | 53 | 2.150 | 2.150 | (0.447) | 173005 | 50.0000 | 62.29 |
| | 49 Ethyl Methacrylate | 69 | 7.293 | 7.293 | (1.314) | 495481 | 50.0000 | 52.95 |
| | 166 1,2,3-Trimethylbenzene | 105 | 10.236 | 10.236 | (1.006) | 1142083 | 50.0000 | 53.95 |
| | 167 Ethanol | 45 | 2.075 | 2.075 | (0.431) | 148865 | 1000.00 | 1019.20 |
| | 164 Dicyclopentadiene | 66 | 10.198 | 10.198 | (1.003) | 1385546 | 50.0000 | 50.76 |
| | 145 alpha-Methylstyrene | 118 | 9.756 | 9.756 | (0.959) | 409396 | 50.0000 | 49.53 |
| | 142 Tetrahydrofuran | 42 | 4.541 | 4.541 | (0.944) | 201922 | 100.000 | 115.94 |
| | 156 Diisopropyl ether | 45 | 3.615 | 3.615 | (0.751) | 1700844 | 50.0000 | 56.63 |
| | 151 4-Methyl-2-pentanol | 45 | 7.222 | 7.222 | (1.301) | 1506172 | 1000.00 | 1102.52 |
| | 150 Allyl alcohol | 57 | 3.338 | 3.338 | (0.694) | 466041 | 1000.00 | 1144.40 |
| | 86 Benzyl Chloride | 91 | 10.311 | 10.311 | (1.260) | 301028 | 50.0000 | 55.93 |
| | 162 Butyl acrylate | 55 | 8.736 | 8.736 | (1.067) | 639617 | 50.0000 | 52.77 |
| | 139 Diethyl ether | 59 | 2.138 | 2.138 | (0.445) | 381826 | 50.0000 | 55.51 |
| | 203 2-Ethylhexyl Acrylate | 55 | 12.042 | 12.042 | (1.184) | 261932 | 50.0000 | 52.81 |
| | 134 Cyclohexanone | 55 | 9.156 | 9.156 | (0.900) | 447925 | 1000.00 | 1282.56 |
| | 130 Ethyl Acetate | 43 | 4.339 | 4.339 | (0.902) | 576436 | 50.0000 | 55.83 |
| | 189 n-Butyl acetate | 43 | 7.705 | 7.705 | (0.941) | 628746 | 50.0000 | 50.15 |
| | 182 Epichlorohydrin | 57 | 6.633 | 6.633 | (1.195) | 13959 | 200.000 | 166.12 |
| | 132 n-Butanol | 56 | 5.831 | 5.831 | (1.212) | 210129 | 1000.00 | 982.09 |
| | 133 Ethyl Acrylate | 55 | 5.947 | 5.947 | (1.236) | 878885 | 50.0000 | 54.45 |
| | 163 Butyl methacrylate | 41 | 9.651 | 9.651 | (0.949) | 480259 | 50.0000 | 58.75 |
| | 174 tert-Amyl methyl ether | 73 | 5.287 | 5.287 | (1.099) | 828969 | 50.0000 | 53.62 |
| | 175 tert-Butyl ethyl ether | 59 | 4.046 | 4.046 | (0.841) | 1175519 | 50.0000 | 55.03 |
| | 188 Isopropyl acetate | 43 | 5.287 | 5.287 | (0.953) | 1088253 | 50.0000 | 55.91 |
| | 179 Hexachloroethane | 166 | 10.712 | 10.712 | (1.053) | 95746 | 50.0000 | 50.38 |

QC Flag Legend

M - Compound response manually integrated.




Data File: \\nahstws005\target\chem\voa9,i\u230921,b\u092103,d
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Sample Info: CCV;CCV;2;;;
Purge Volume: 5.0
Column phase: DB624

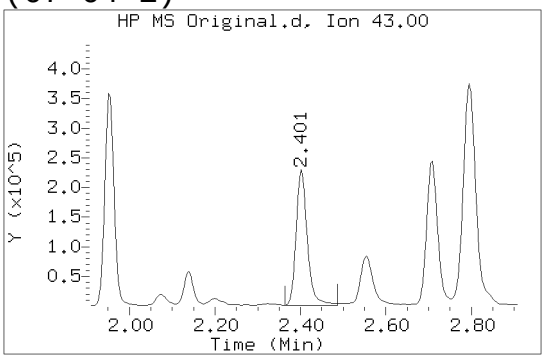
Instrument: VOA9,i
Operator: PC
Column diameter: 0.18

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InstruID : VOA9.i
LabSampID : CCV

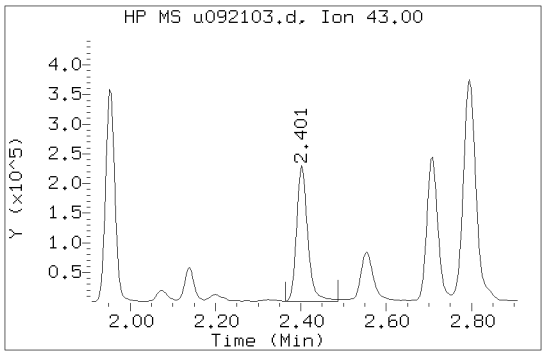
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Reason Code:

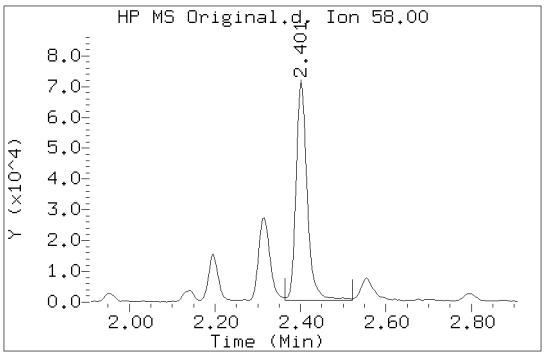
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HEIGHT
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21-Sep-2023
12:08



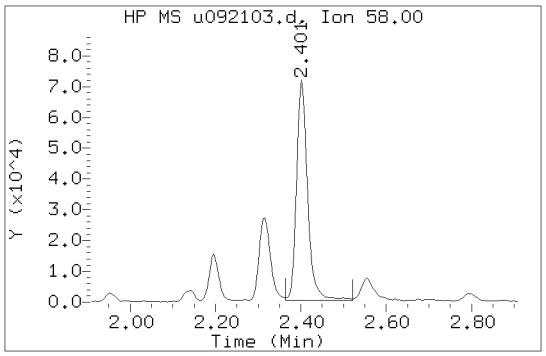

AFTER
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420595
HEIGHT
229124
21-Sep-2023
12:08




BEFORE
MASS
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AREA
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HEIGHT
71578
21-Sep-2023
12:08



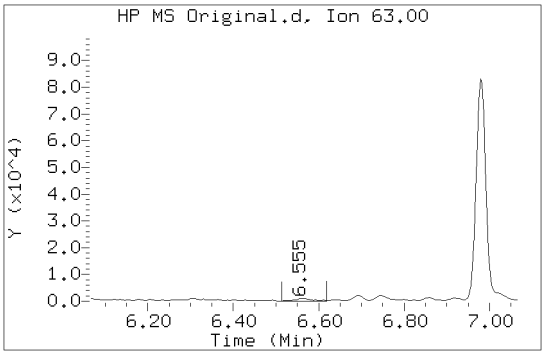

AFTER
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21-Sep-2023
12:08



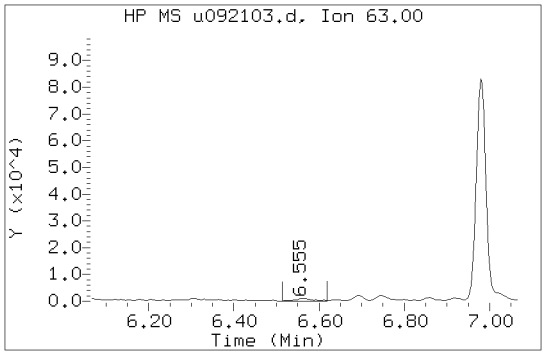

## 2-Chloroethylvinyl ether (110-75-8)

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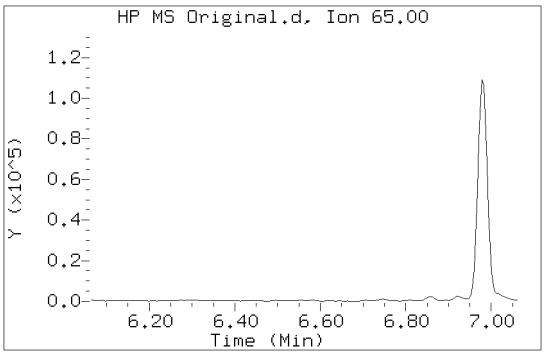
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MASS
63
AREA
3233
HEIGHT
985
21-Sep-2023
12:08



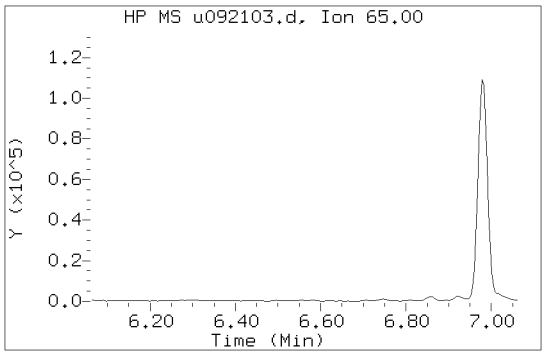

AFTER
MASS
63
AREA
3233
HEIGHT
985
21-Sep-2023
12:08




BEFORE
MASS
65
AREA
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HEIGHT
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21-Sep-2023
12:08




AFTER
MASS
65
AREA
0
HEIGHT
0
21-Sep-2023
12:08



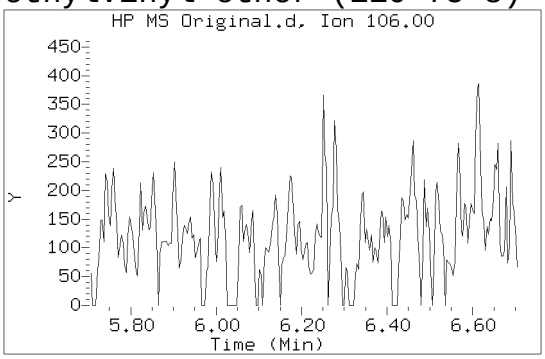
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InstruID : VOA9.i
LabSampID : CCV

## 2-Chloroethylvinyl ether (110-75-8)

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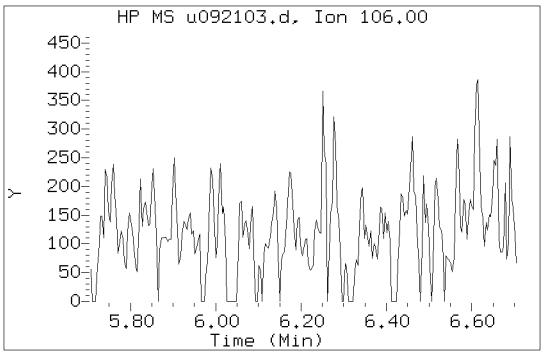
BEFORE

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106
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21-Sep-2023
12:08




AFTER

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AREA
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HEIGHT
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21-Sep-2023
12:08

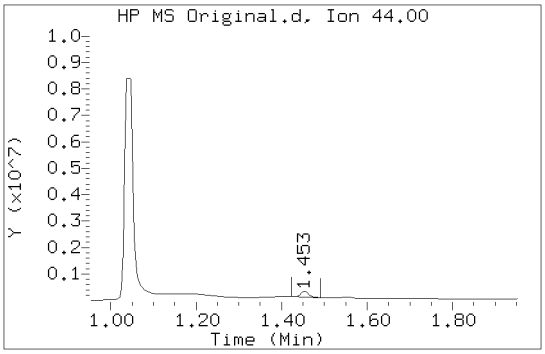



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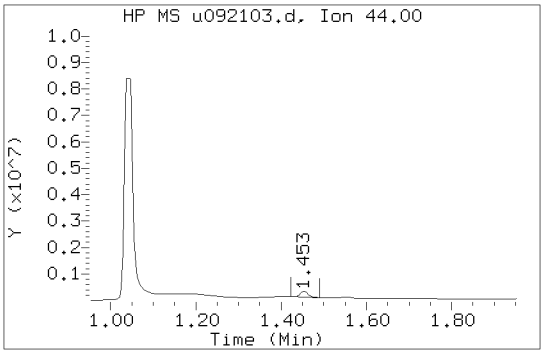
BEFORE

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AREA
281452
HEIGHT
215702
21-Sep-2023
12:08



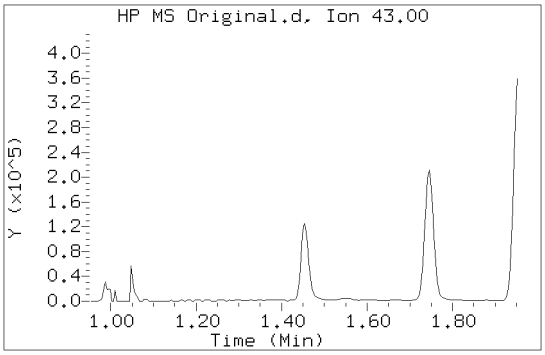

AFTER

MASS
44
AREA
281452
HEIGHT
215702
21-Sep-2023
12:08



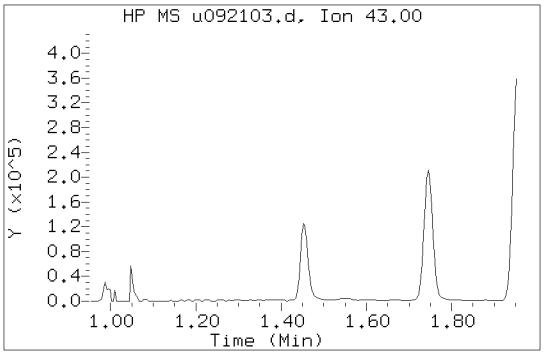

BEFORE

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AREA
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HEIGHT
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21-Sep-2023
12:08



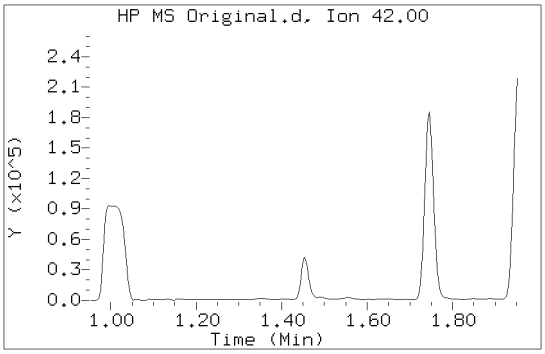

AFTER

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AREA
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HEIGHT
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21-Sep-2023
12:08



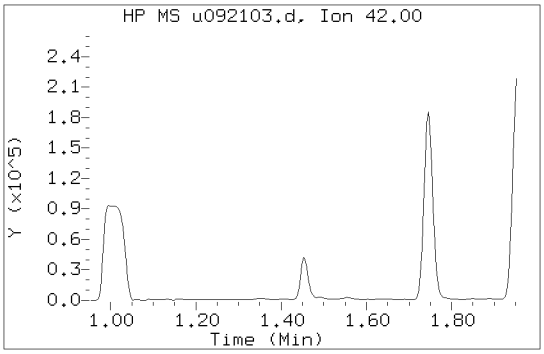

BEFORE

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AREA
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HEIGHT
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21-Sep-2023
12:08




AFTER

MASS
42
AREA
0
HEIGHT
0
21-Sep-2023
12:08



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Report Date: 21-Sep-2023 16:12

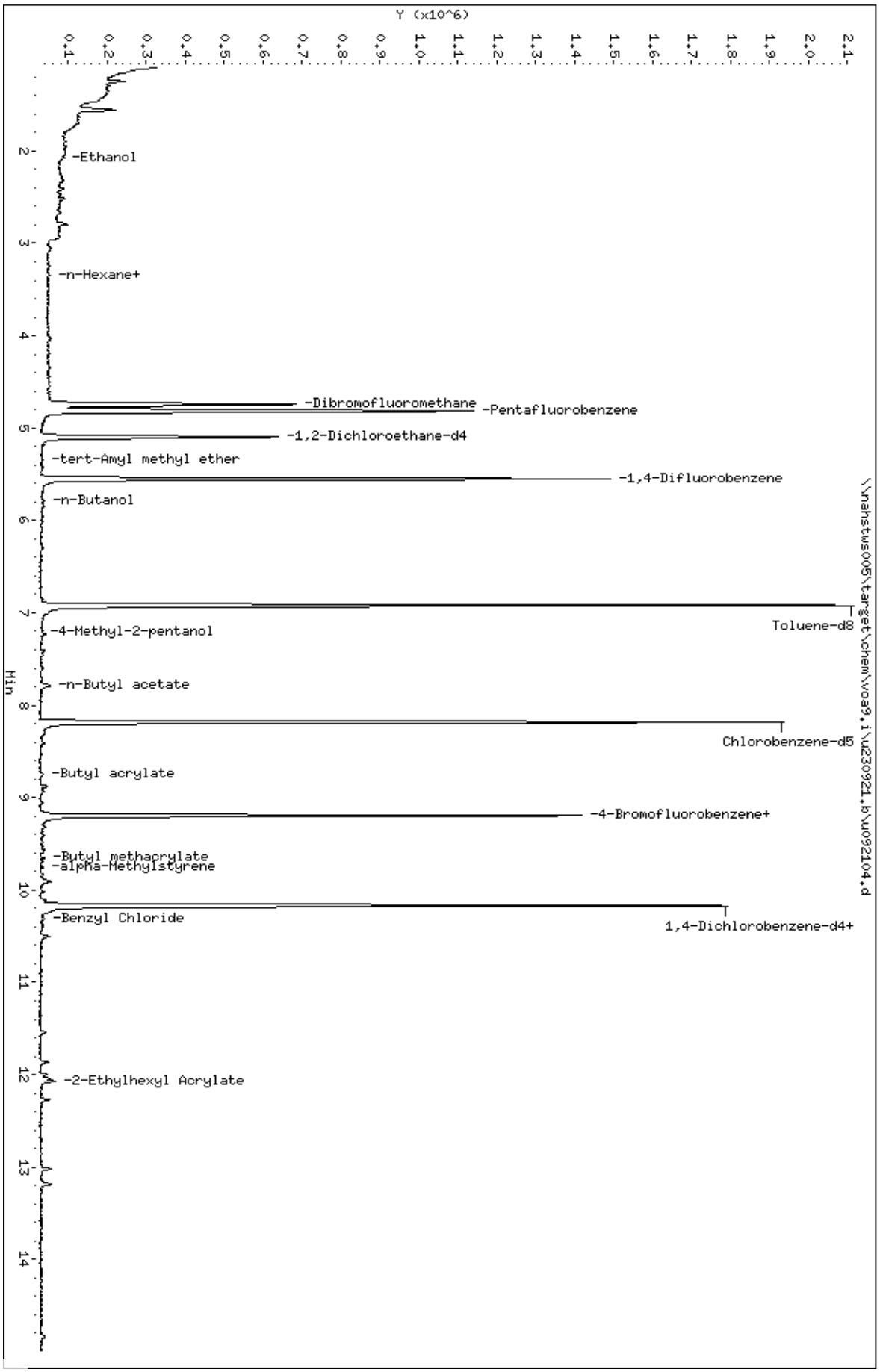
ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa9.i\U230921.b\U092104.D
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Inj Date  : 21-SEP-2023 11:51
Operator  : PC  Inst ID: VOA9.i
Smp Info  : CCB;CCB;;;
Misc Info : V9;WATER;0;1;
Comment   :
Method    : \\nahstws005\Target\chem\voa9.i\U230921.b\8260C.m
Meth Date : 21-Sep-2023 16:12 pcabasca  Quant Type: ISTD
Cal Date  : 14-SEP-2023 18:22  Cal File: U091408.D
Als bottle: 3
Dil Factor: 1.00000
Integrator: HP RTE  Compound Sublist: 8260_GB.sub
Target Version:  4.14
Processing Host: NAHSTWS005

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

| Name | Value | Description |
|---|---|---|
| DF | 1.000 | Dilution Factor |
| Uf | 5.000 | ng unit correction factor |
| Vo | 5.000 | sample purged |
| Cpnd Variable | | Local Compound Variable |

| Compounds | QUANT SIG MASS | RT | EXP RT | REL RT | RESPONSE | CONCENTRATIONS ON-COLUMN ( ug/l) | FINAL ( ug/l) |
|---|---|---|---|---|---|---|---|
| * 1 Pentafluorobenzene | 168 | 4.811 | 4.815 | (1.000) | 755694 | 50.0000 | |
| $ 30 Dibromofluoromethane | 113 | 4.744 | 4.748 | (0.986) | 362141 | 52.5124 | 52.51 |
| $ 35 1,2-Dichloroethane-d4 | 65 | 5.096 | 5.096 | (1.059) | 400403 | 51.4159 | 51.41 |
| * 36 1,4-Difluorobenzene | 114 | 5.550 | 5.554 | (1.000) | 1075659 | 50.0000 | |
| * 47 Chlorobenzene-d5 | 117 | 8.185 | 8.185 | (1.000) | 949645 | 50.0000 | |
| $ 48 Toluene-d8 | 98 | 6.922 | 6.922 | (0.846) | 1186059 | 56.6508 | 56.65 |
| $ 69 4-Bromofluorobenzene | 95 | 9.194 | 9.194 | (1.123) | 409636 | 44.8953 | 44.89 |
| * 70 1,4-Dichlorobenzene-d4 | 152 | 10.172 | 10.168 | (1.000) | 453271 | 50.0000 | |




Data File: \\nahstws005\target\chem\woa9.i\u230921.b\u092104.d
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Sample Info: CCB;CCB;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: WOA9.i
Operator: PC
Column diameter: 0.18

Data File : \\nahstws005\target\chem\voa9.i\u230921.b\u092104.d
Inj Date  : 21-SEP-2023 11:51
InstruID  : VOA9.i
LabSampID : CCB

NO MANUAL INTEGRATIONS

Data File: \\NAHSTWS005\Target\chem\voa9.i\U230921.b\U092105.D  Page 1
Report Date: 21-Sep-2023 22:42

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa9.i\U230921.b\U092105.D
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Inj Date  : 21-SEP-2023 12:13
Operator  : PC  Inst ID: VOA9.i
Smp Info  : VLCSW-230921;VLCSW-230921;3;;LCS
Misc Info : V9;WATER;0;1;
Comment   :
Method    : \\nahstws005\Target\chem\voa9.i\U230921.b\8260C.m
Meth Date : 21-Sep-2023 22:08 pcabasca  Quant Type: ISTD
Cal Date  : 14-SEP-2023 18:22  Cal File: U091408.D
Als bottle: 4  QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE  Compound Sublist: 8260_GB.sub
Target Version:  4.14
Processing Host: NAHSTWS005

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

| Name | Value | Description |
|---|---|---|
| DF | 1.000 | Dilution Factor |
| Uf | 5.000 | ng unit correction factor |
| Vo | 5.000 | sample purged |
| Cpnd Variable | | Local Compound Variable |

| Compounds | QUANT SIG MASS | RT | EXP RT | REL RT | RESPONSE | CONCENTRATIONS ON-COLUMN ( ug/l) | FINAL ( ug/l) |
|---|---|---|---|---|---|---|---|
| * 1 Pentafluorobenzene | 168 | 4.811 | 4.815 | (1.000) | 650405 | 50.0000 | |
| 2 Dichlorodifluoromethane | 85 | 1.156 | 1.164 | (0.240) | 125472 | 18.4590 | 18.45 |
| 3 Chloromethane | 50 | 1.291 | 1.295 | (0.268) | 268408 | 21.8146 | 21.81 |
| 5 Vinyl Chloride | 62 | 1.370 | 1.378 | (0.285) | 179972 | 21.7980 | 21.79 |
| 6 Bromomethane | 94 | 1.614 | 1.617 | (0.335) | 103274 | 25.8604 | 25.86 |
| 7 Chloroethane | 64 | 1.692 | 1.700 | (0.352) | 139400 | 22.9576 | 22.95 |
| 8 Trichlorofluoromethane | 101 | 1.887 | 1.899 | (0.392) | 240108 | 22.6672 | 22.66 |
| 9 Acrolein | 56 | 2.258 | 2.266 | (0.469) | 20077 | 35.9761 | 35.97 |
| 10 Acetone | 43 | 2.401 | 2.408 | (0.499) | 158292 | 46.8565 | 46.85 |
| 11 1,1-Dichloroethene | 96 | 2.326 | 2.333 | (0.483) | 133560 | 20.7464 | 20.74 |
| 15 Iodomethane | 142 | 2.461 | 2.468 | (0.512) | 143528 | 41.6685 | 41.66 |
| 16 Acrylonitrile | 53 | 3.061 | 3.064 | (0.636) | 164394 | 43.3305 | 43.33 |
| 17 Methylene Chloride | 84 | 2.787 | 2.795 | (0.579) | 191962 | 24.3981 | 24.39 |
| 18 Methyl tert-butyl ether | 73 | 3.072 | 3.079 | (0.639) | 413528 | 22.6242 | 22.62 |
| 19 Carbon Disulfide | 76 | 2.513 | 2.521 | (0.522) | 783112 | 45.0329 | 45.03 |
| 20 trans-1,2-Dichloroethene | 96 | 3.053 | 3.057 | (0.635) | 150001 | 22.2110 | 22.21 |
| 21 Vinyl Acetate | 43 | 3.600 | 3.608 | (0.748) | 1071654 | 44.8521 | 44.85 |
| 22 1,1-Dichloroethane | 63 | 3.507 | 3.514 | (0.729) | 302924 | 22.3656 | 22.36 |
| 24 2-Butanone | 43 | 4.260 | 4.268 | (0.885) | 175886 | 44.6157 | 44.61 |
| 26 2,2-Dichloropropane | 77 | 4.178 | 4.182 | (0.868) | 183158 | 22.3333 | 22.33 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 27 cis-1,2-Dichloroethene | 96 | 4.189 | 4.197 (0.871) | 173953 | 22.5280 | 22.52 |
| 28 Chloroform | 83 | 4.568 | 4.571 (0.949) | 300276 | 22.8327 | 22.83 |

Data File: \\NAHSTWS005\Target\chem\voa9.i\U230921.b\U092105.D Page 2
Report Date: 21-Sep-2023 22:42

| | Compounds | QUANT SIG MASS | RT | EXP RT | REL RT | RESPONSE | CONCENTRATIONS ON-COLUMN ( ug/l) | FINAL ( ug/l) |
|---|---|---|---|---|---|---|---|---|
| | 29 Bromochloromethane | 128 | 4.463 | 4.470 | (0.928) | 87056 | 21.5136 | 21.51 |
| $ | 30 Dibromofluoromethane | 113 | 4.744 | 4.748 | (0.986) | 353308 | 59.4972 | 59.49(M) |
| | 31 1,1,1-Trichloroethane | 97 | 4.736 | 4.740 | (0.984) | 214154 | 23.9792 | 23.97 |
| | 32 1,1-Dichloropropene | 75 | 4.916 | 4.920 | (0.886) | 164053 | 20.0680 | 20.06 |
| | 33 1,2-Dichloroethane | 62 | 5.175 | 5.175 | (0.932) | 203637 | 20.4576 | 20.45 |
| | 34 Carbon Tetrachloride | 117 | 4.905 | 4.909 | (0.884) | 141819 | 19.3911 | 19.39 |
| $ | 35 1,2-Dichloroethane-d4 | 65 | 5.092 | 5.096 | (1.058) | 361371 | 53.9230 | 53.92 |
| * | 36 1,4-Difluorobenzene | 114 | 5.550 | 5.554 | (1.000) | 1029779 | 50.0000 | |
| | 37 Benzene | 78 | 5.134 | 5.137 | (0.925) | 530857 | 20.5242 | 20.52 |
| | 38 Trichloroethene | 130 | 5.786 | 5.786 | (1.043) | 137655 | 18.2979 | 18.29 |
| | 39 Bromodichloromethane | 83 | 6.277 | 6.277 | (1.131) | 165095 | 19.6801 | 19.68 |
| | 41 2-Chloroethylvinyl ether | 63 | 6.543 | 6.562 | (1.179) | 1137 | 30.9370 | 30.93(M) |
| | 42 1,2-Dichloropropane | 63 | 6.007 | 6.011 | (1.082) | 148161 | 21.6920 | 21.69 |
| | 44 Dibromomethane | 93 | 6.119 | 6.120 | (1.103) | 89519 | 19.0351 | 19.03 |
| | 45 4-Methyl-2-Pentanone | 43 | 6.858 | 6.858 | (0.838) | 301318 | 43.3237 | 43.32 |
| | 46 cis-1,3-Dichloropropene | 75 | 6.689 | 6.693 | (1.205) | 169978 | 18.4592 | 18.45 |
| * | 47 Chlorobenzene-d5 | 117 | 8.185 | 8.185 | (1.000) | 970470 | 50.0000 | |
| $ | 48 Toluene-d8 | 98 | 6.922 | 6.922 | (0.846) | 1156950 | 54.0747 | 54.07 |
| | 50 Toluene | 91 | 6.978 | 6.982 | (0.853) | 580736 | 22.2856 | 22.28 |
| | 51 trans-1,3-Dichloropropene | 75 | 7.195 | 7.195 | (1.297) | 140096 | 18.0889 | 18.08 |
| | 52 2-Hexanone | 43 | 7.593 | 7.593 | (0.928) | 190268 | 43.2464 | 43.24 |
| | 53 1,1,2-Trichloroethane | 83 | 7.357 | 7.357 | (0.899) | 112931 | 19.8741 | 19.87 |
| | 54 1,3-Dichloropropane | 76 | 7.499 | 7.499 | (0.916) | 245988 | 21.5222 | 21.52 |
| | 55 Dibromochloromethane | 129 | 7.690 | 7.690 | (0.940) | 131296 | 19.4124 | 19.41 |
| | 56 Tetrachloroethene | 164 | 7.458 | 7.458 | (0.911) | 126025 | 20.7560 | 20.75 |
| | 57 1,2-Dibromoethane | 107 | 7.784 | 7.784 | (0.951) | 139130 | 20.3728 | 20.37 |
| | 58 1-Chlorohexane | 55 | 8.196 | 8.196 | (1.477) | 128378 | 20.6354 | 20.63 |
| | 59 Chlorobenzene | 112 | 8.207 | 8.208 | (1.003) | 392278 | 20.3528 | 20.35 |
| | 60 1,1,1,2-Tetrachloroethane | 131 | 8.282 | 8.283 | (1.012) | 128972 | 19.9101 | 19.91 |
| | 61 Ethylbenzene | 106 | 8.305 | 8.305 | (1.015) | 185085 | 21.4463 | 21.44 |
| | 62 m,p-Xylenes | 106 | 8.406 | 8.406 | (1.027) | 457892 | 42.1923 | 42.19 |
| | 63 o-Xylene | 106 | 8.747 | 8.747 | (1.069) | 227401 | 20.1620 | 20.16 |
| | 64 Styrene | 104 | 8.762 | 8.762 | (1.071) | 347239 | 20.0507 | 20.05 |
| | 66 Bromoform | 173 | 8.920 | 8.916 | (1.090) | 82951 | 18.6521 | 18.65 |
| | 67 Isopropylbenzene | 105 | 9.062 | 9.062 | (1.107) | 549863 | 21.6708 | 21.67 |
| | 68 1,1,2,2-Tetrachloroethane | 83 | 9.328 | 9.328 | (0.917) | 209312 | 21.0632 | 21.06 |
| $ | 69 4-Bromofluorobenzene | 95 | 9.193 | 9.194 | (1.123) | 491249 | 52.3032 | 52.30 |
| * | 70 1,4-Dichlorobenzene-d4 | 152 | 10.172 | 10.168 | (1.000) | 511515 | 50.0000 | |
| | 71 1,2,3-Trichloropropane | 75 | 9.362 | 9.362 | (0.920) | 178562 | 21.0850 | 21.08 |
| | 73 n-Propylbenzene | 91 | 9.411 | 9.411 | (0.925) | 616019 | 21.2995 | 21.29 |
| | 74 Bromobenzene | 156 | 9.317 | 9.317 | (0.916) | 164771 | 20.2681 | 20.26 |
| | 75 1,3,5-Trimethylbenzene | 105 | 9.561 | 9.561 | (0.940) | 410391 | 21.3301 | 21.33 |
| | 76 2-Chlorotoluene | 91 | 9.482 | 9.482 | (0.932) | 402537 | 21.1942 | 21.19 |
| | 77 4-Chlorotoluene | 91 | 9.576 | 9.576 | (0.941) | 480272 | 21.5497 | 21.54 |
| | 78 tert-Butylbenzene | 119 | 9.834 | 9.838 | (0.967) | 396112 | 21.3942 | 21.39 |
| | 79 1,2,4-Trimethylbenzene | 105 | 9.879 | 9.876 | (0.971) | 444387 | 22.4699 | 22.46 |
| | 81 sec-Butylbenzene | 105 | 10.022 | 10.022 | (0.985) | 509507 | 21.4794 | 21.47 |
| | 82 p-Isopropyltoluene | 119 | 10.146 | 10.146 | (0.997) | 388975 | 20.6933 | 20.69 |
| | 83 1,3-Dichlorobenzene | 146 | 10.116 | 10.116 | (0.994) | 296290 | 20.6639 | 20.66 |
| | 84 1,4-Dichlorobenzene | 146 | 10.191 | 10.191 | (1.002) | 311017 | 19.3060 | 19.30 |
| | 87 n-Butylbenzene | 91 | 10.494 | 10.491 | (1.032) | 373592 | 21.7418 | 21.74 |
| | 88 1,2-Dichlorobenzene | 146 | 10.505 | 10.506 | (1.033) | 292797 | 19.9659 | 19.96 |

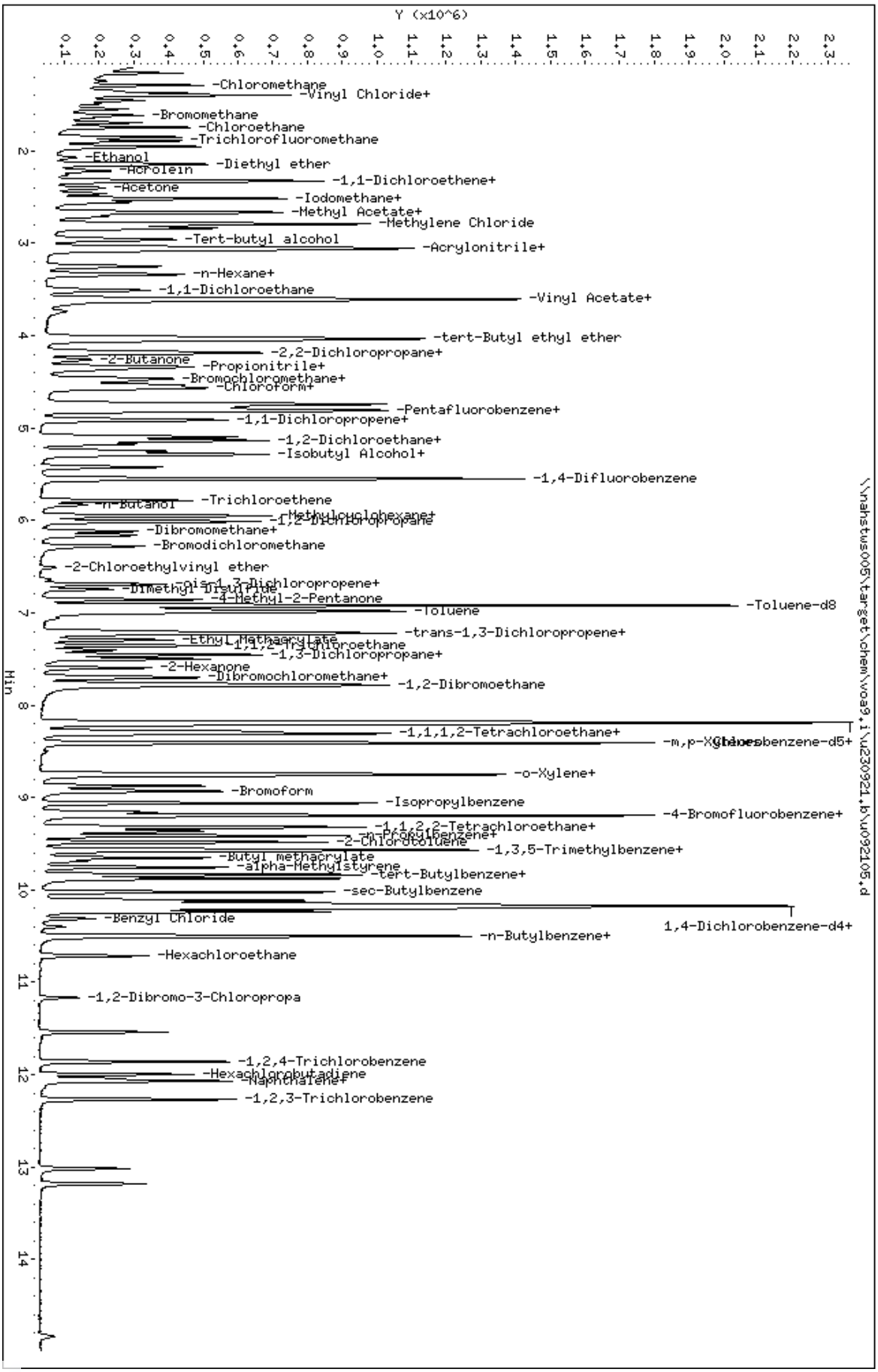
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|---|---|---|---|---|---|---|---|
| 89 | 1,2-Dibromo-3-Chloropropane | 155 | 11.165 | 11.169 (1.098) | 20214 | 16.3491 | 16.34 |
| 90 | 1,2,4-Trichlorobenzene | 180 | 11.859 | 11.855 (1.166) | 164529 | 19.7074 | 19.70 |

Data File: \\NAHSTWS005\Target\chem\voa9.i\U230921.b\U092105.D Page 3
Report Date: 21-Sep-2023 22:42

| | Compounds | QUANT SIG MASS | RT | EXP RT | REL RT | RESPONSE | CONCENTRATIONS ON-COLUMN ( ug/l) | FINAL ( ug/l) |
|---|---|---|---|---|---|---|---|---|
| | 91 Hexachlorobutadiene | 225 | 11.997 | 11.998 | (1.179) | 78349 | 20.9163 | 20.91 |
| | 92 Naphthalene | 128 | 12.069 | 12.065 | (1.186) | 382784 | 18.5651 | 18.56 |
| | 93 1,2,3-Trichlorobenzene | 180 | 12.267 | 12.267 | (1.206) | 169877 | 21.4326 | 21.43 |
| M | 94 1,2-Dichloroethylene (total) | 96 | | | | 323954 | 44.7602 | 44.76 |
| M | 95 Xylenes (total) | 106 | | | | 685293 | 60.8010 | 60.80 |
| | 135 1,4-Dioxane | 88 | 6.168 | 6.172 | (1.282) | 29895 | 316.210 | 316.21 |
| | 141 Cyclohexane | 56 | 4.777 | 4.781 | (0.993) | 245911 | 28.4963 | 28.49 |
| | 138 Freon TF | 101 | 2.330 | 2.333 | (0.484) | 131377 | 25.2962 | 25.29 |
| | 140 1,3-Butadiene | 54 | 1.396 | 1.404 | (0.290) | 164566 | 21.4170 | 21.41 |
| | 147 Methylcyclohexane | 55 | 5.947 | 5.947 | (1.072) | 308466 | 20.4342 | 20.43 |
| | 146 Methyl Acetate | 43 | 2.708 | 2.712 | (0.563) | 174313 | 22.1039 | 22.10 |
| | 148 Tert-Butyl alcohol | 59 | 2.956 | 2.967 | (0.614) | 362178 | 454.463 | 454.46 |
| | 149 Isopropyl Alcohol | 45 | 2.554 | 2.562 | (0.531) | 256308 | 448.313 | 448.31 |
| | 72 trans-1,4-Dichloro-2-butene | 53 | 9.377 | 9.377 | (1.146) | 27927 | 20.0790 | 20.07 |
| | 12 Isobutyl Alcohol | 43 | 5.287 | 5.291 | (1.099) | 398695 | 431.637 | 431.63 |
| | 13 Acetonitrile | 39 | 2.663 | 2.671 | (0.554) | 232187 | 233.979 | 233.97 |
| | 14 Allyl Chloride | 41 | 2.667 | 2.671 | (0.554) | 534842 | 23.1922 | 23.19 |
| | 25 Methacrylonitrile | 41 | 4.493 | 4.496 | (0.934) | 122761 | 24.0104 | 24.01 |
| | 40 Methyl Methacrylate | 41 | 6.157 | 6.157 | (1.280) | 113804 | 21.3676 | 21.36 |
| | 4 Propionitrile | 54 | 4.335 | 4.339 | (0.901) | 313604 | 222.572 | 222.57(a) |
| | 194 Acetaldehyde | 44 | 1.452 | 1.452 | (0.302) | 120777 | 89.7005 | 89.70(M) |
| | 131 Methyl Acrylate | 55 | 4.365 | 4.369 | (0.907) | 229730 | 22.6922 | 22.69 |
| | 200 Dimethyl Disulfide | 94 | 6.745 | 6.746 | (0.824) | 93790 | 16.6398 | 16.63 |
| | 49 Ethyl Methacrylate | 69 | 7.293 | 7.293 | (1.314) | 164702 | 18.3393 | 18.33 |
| | 166 1,2,3-Trimethylbenzene | 105 | 10.232 | 10.232 | (1.006) | 424508 | 21.5799 | 21.57 |
| | 182 Epichlorohydrin | 57 | 6.633 | 6.637 | (1.195) | 5639 | 69.9139 | 69.91(M) |

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.




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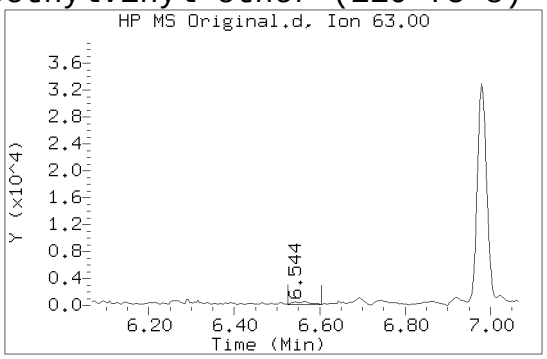
Instrument: VOA9,i
Operator: PC
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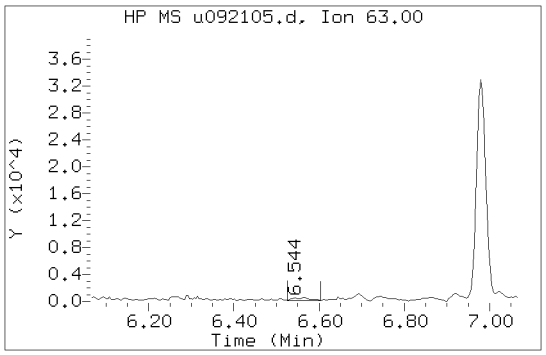
## 2-Chloroethylvinyl ether (110-75-8)

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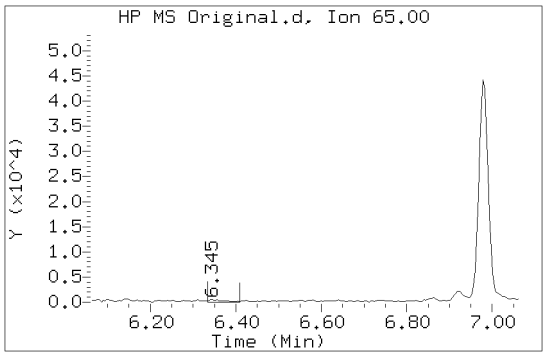
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22:42



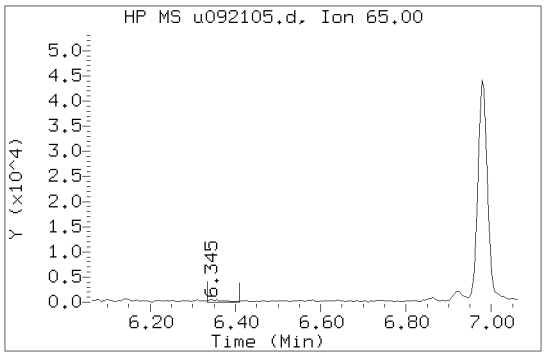

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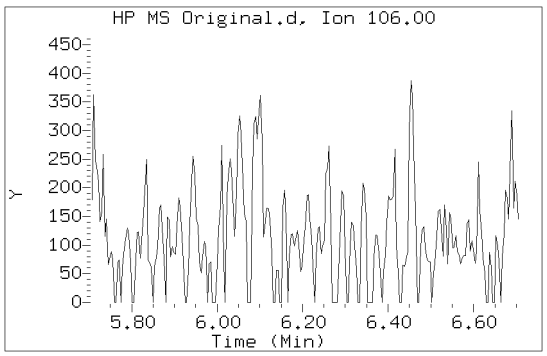

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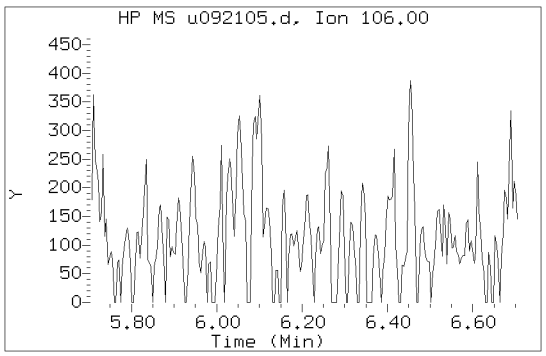

AFTER
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21-Sep-2023
22:42



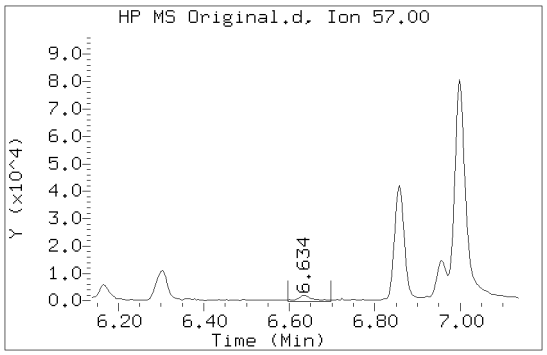

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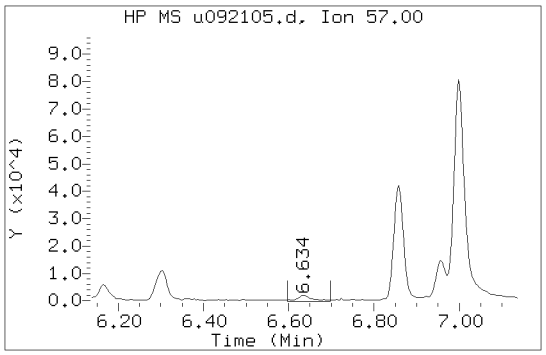

## Epichlorohydrin (106-89-8)

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22:42




AFTER
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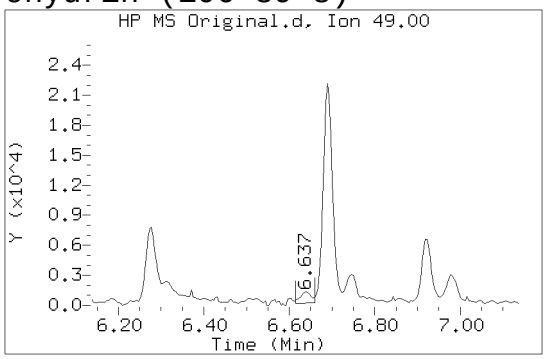


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LabSampID : VLCSW-230921

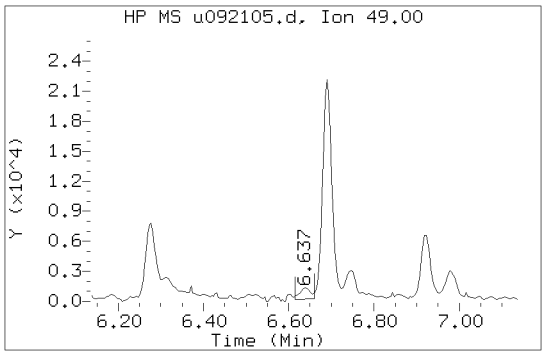
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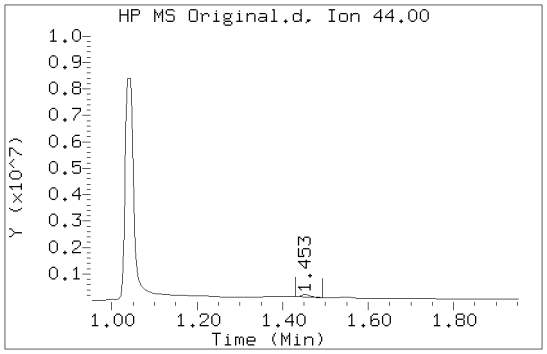

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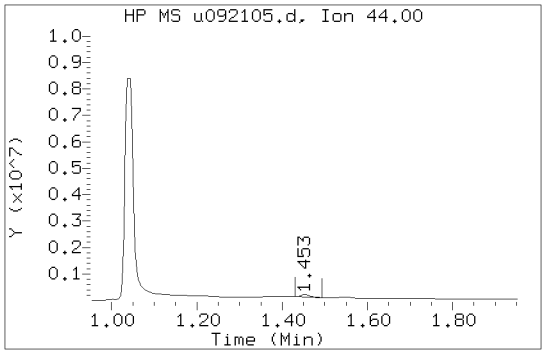

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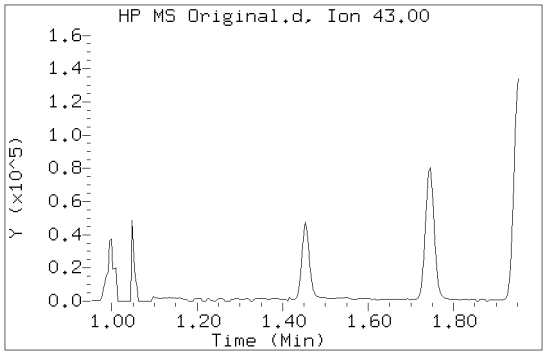
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21-Sep-2023
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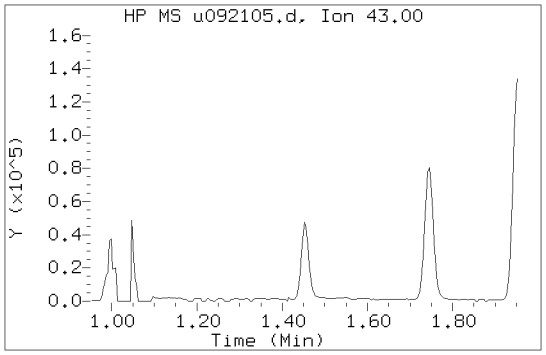

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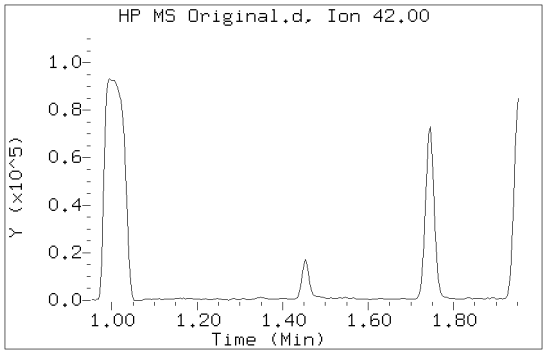

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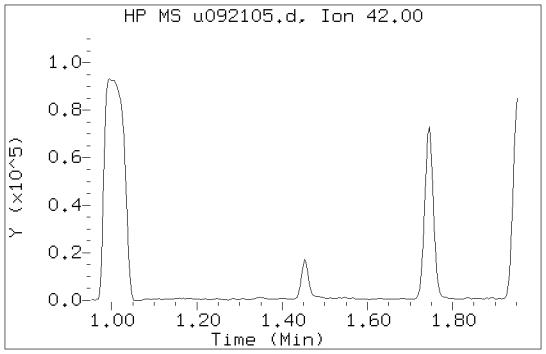

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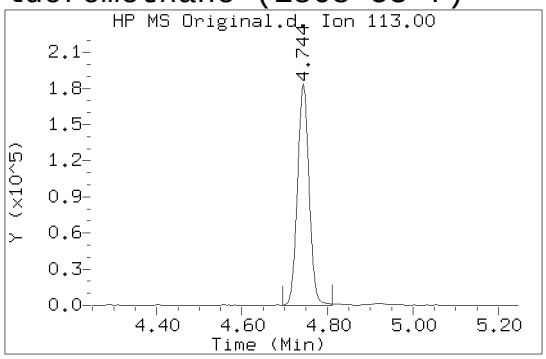
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LabSampID : VLCSW-230921

Dibromofluoromethane (1868-53-7)

Reason Code:

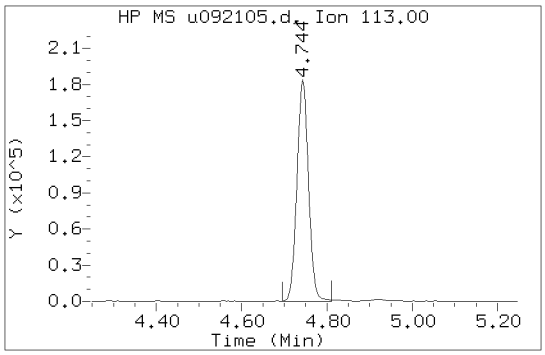
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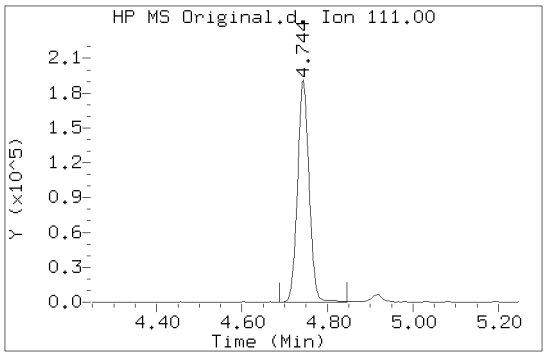

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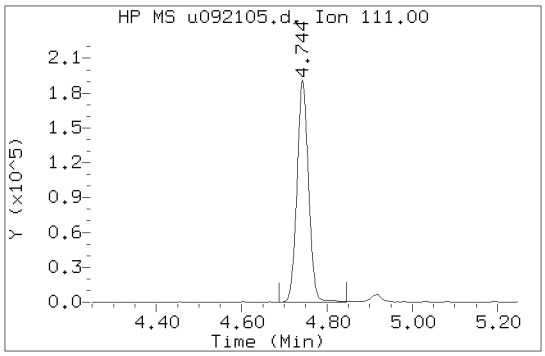

BEFORE

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ALS Laboratory Group

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Operator  : PC  Inst ID: VOA9.i
Smp Info  : VBLKW-230921;VBLKW-230921;3;;BLANK
Misc Info : V9;WATER;0;1;
Comment   :
Method    : \\nahstws005\Target\chem\voa9.i\U230921.b\8260C.m
Meth Date : 21-Sep-2023 16:12 pcabasca  Quant Type: ISTD
Cal Date  : 14-SEP-2023 18:22  Cal File: U091408.D
Als bottle: 7  QC Sample: BLANK
Dil Factor: 1.00000
Integrator: HP RTE  Compound Sublist: 8260_GB.sub
Target Version:  4.14
Processing Host: NAHSTWS005

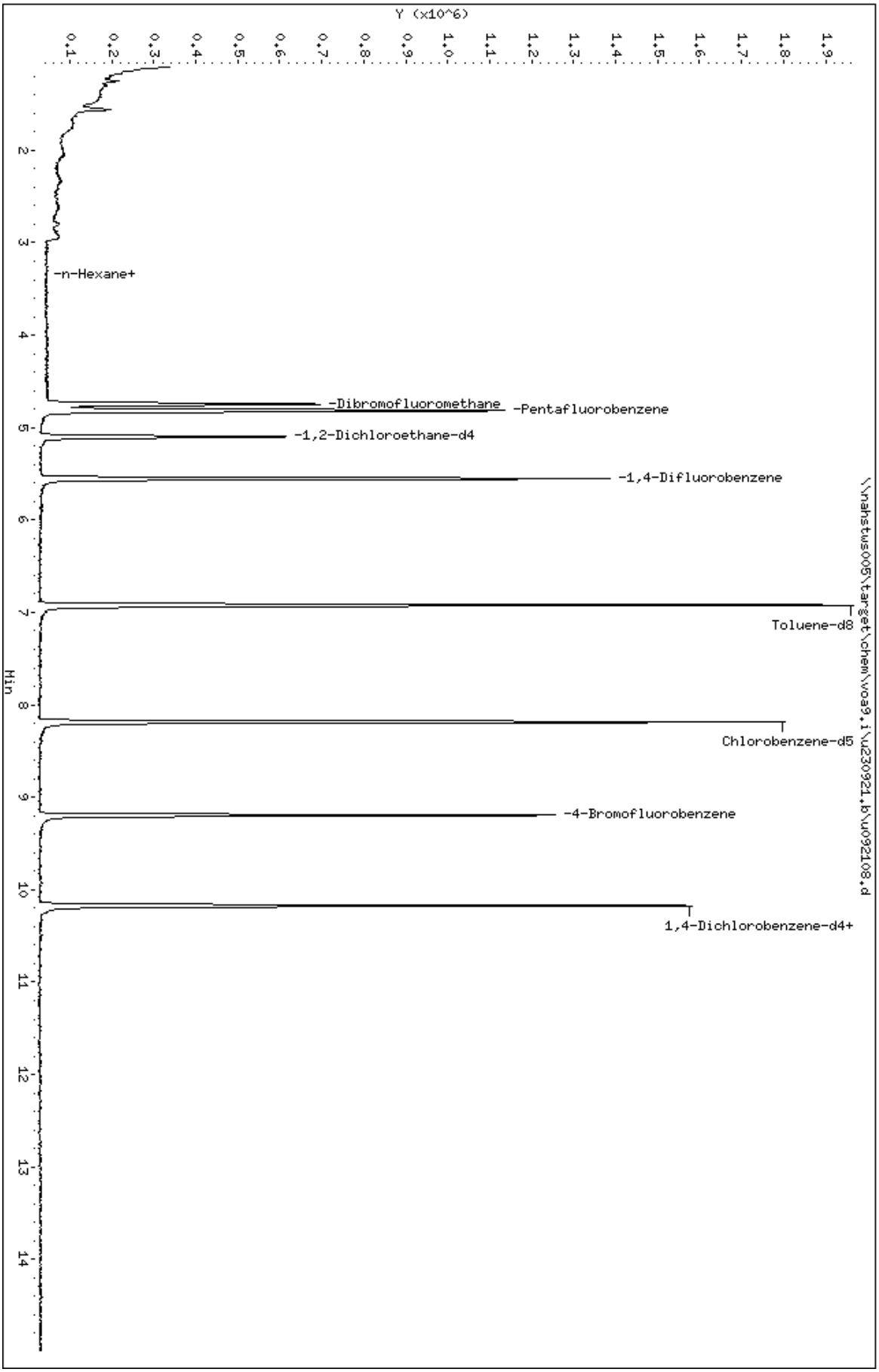
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

| Name | Value | Description |
|---|---|---|
| DF | 1.000 | Dilution Factor |
| Uf | 5.000 | ng unit correction factor |
| Vo | 5.000 | sample purged |
| Cpnd Variable | | Local Compound Variable |

| Compounds | QUANT SIG MASS | RT | EXP RT | REL RT | RESPONSE | CONCENTRATIONS ON-COLUMN ( ug/l) | FINAL ( ug/l) |
|---|---|---|---|---|---|---|---|
| * 1 Pentafluorobenzene | 168 | 4.815 | 4.815 | (1.000) | 746421 | 50.0000 | |
| $ 30 Dibromofluoromethane | 113 | 4.748 | 4.748 | (0.986) | 366177 | 53.7524 | 53.75 |
| $ 35 1,2-Dichloroethane-d4 | 65 | 5.097 | 5.096 | (1.058) | 379617 | 49.3464 | 49.34 |
| * 36 1,4-Difluorobenzene | 114 | 5.554 | 5.554 | (1.000) | 1005617 | 50.0000 | |
| * 47 Chlorobenzene-d5 | 117 | 8.185 | 8.185 | (1.000) | 879991 | 50.0000 | |
| $ 48 Toluene-d8 | 98 | 6.922 | 6.922 | (0.846) | 1083196 | 55.8329 | 55.83(M) |
| $ 69 4-Bromofluorobenzene | 95 | 9.194 | 9.194 | (1.123) | 358762 | 42.5276 | 42.52 |
| * 70 1,4-Dichlorobenzene-d4 | 152 | 10.172 | 10.168 | (1.000) | 411789 | 50.0000 | |

QC Flag Legend

M - Compound response manually integrated.




Data File: \\nahstws005\target\chem\voa9,i\u230921,b\u092108,d
Date : 21-SEP-2023 13:20
Client ID: VBLKW-230921
Sample Info: VBLKW-230921;VBLKW-230921;3;;BLANK
Purge Volume: 5.0
Column phase: DB624

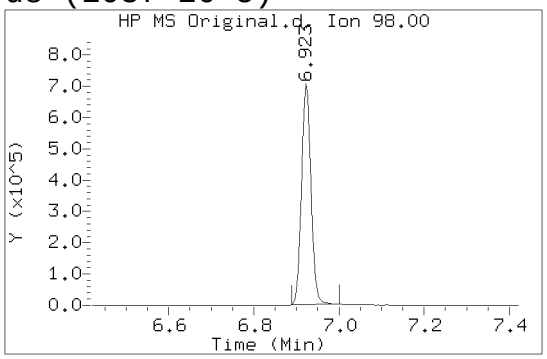
Instrument: VOA9,i
Operator: PC
Column diameter: 0.18

Data File : \\nahstws005\target\chem\voa9.i\u230921.b\u092108.d
Inj Date : 21-SEP-2023 13:20
InstruID : VOA9.i
LabSampID : VBLKW-230921

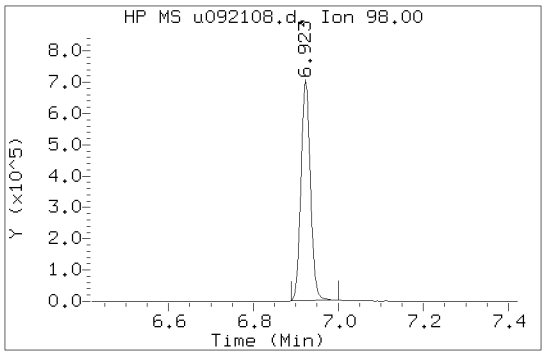
Toluene-d8 (2037-26-5)

Reason Code:

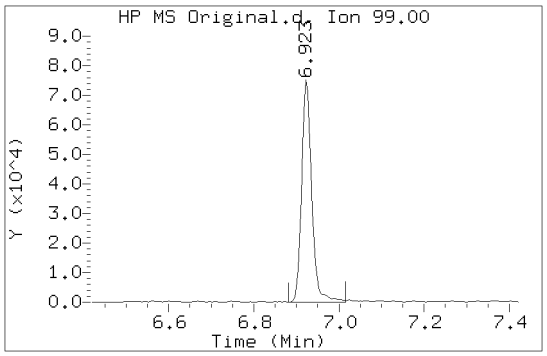
BEFORE
MASS
98
AREA
1083196
HEIGHT
705740
21-Sep-2023
16:14



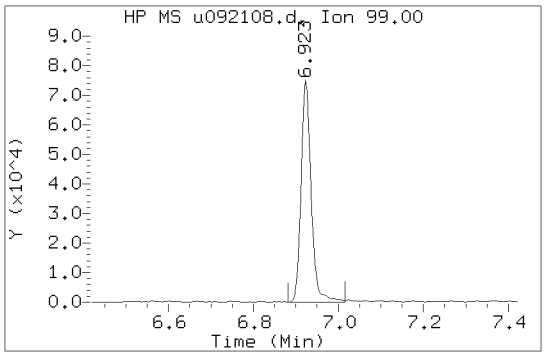

AFTER
MASS
98
AREA
1083196
HEIGHT
705740
21-Sep-2023
16:14



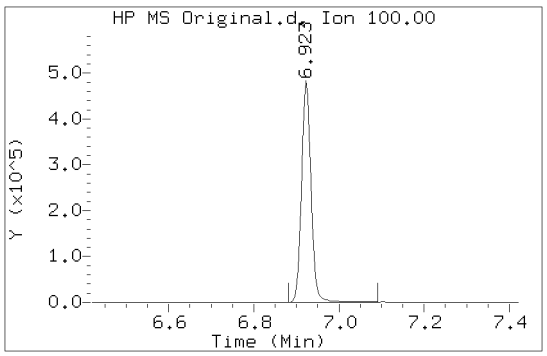

BEFORE
MASS
99
AREA
122973
HEIGHT
75162
21-Sep-2023
16:14



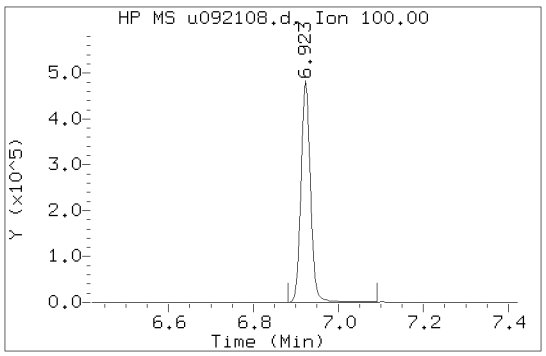

AFTER
MASS
99
AREA
122973
HEIGHT
75162
21-Sep-2023
16:14




BEFORE
MASS
100
AREA
744839
HEIGHT
483181
21-Sep-2023
16:14




AFTER
MASS
100
AREA
744839
HEIGHT
483181
21-Sep-2023
16:14



Data File: \\NAHSTWS005\Target\chem\voa9.i\U230921.b\U092109.D  Page 1
Report Date: 21-Sep-2023 16:15

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa9.i\U230921.b\U092109.D
Lab Smp Id: HS23091194-02  Client Smp ID: HS23091194-02
Inj Date  : 21-SEP-2023 13:42
Operator  : PC  Inst ID: VOA9.i
Smp Info  : HS23091194-02;HS23091194-02;;;
Misc Info : V9;WATER;0;1;
Comment   :
Method    : \\nahstws005\Target\chem\voa9.i\U230921.b\8260C.m
Meth Date : 21-Sep-2023 16:12 pcabasca  Quant Type: ISTD
Cal Date  : 14-SEP-2023 18:22  Cal File: U091408.D
Als bottle: 8
Dil Factor: 1.00000
Integrator: HP RTE  Compound Sublist: 8260_GB.sub
Target Version:  4.14
Processing Host: NAHSTWS005

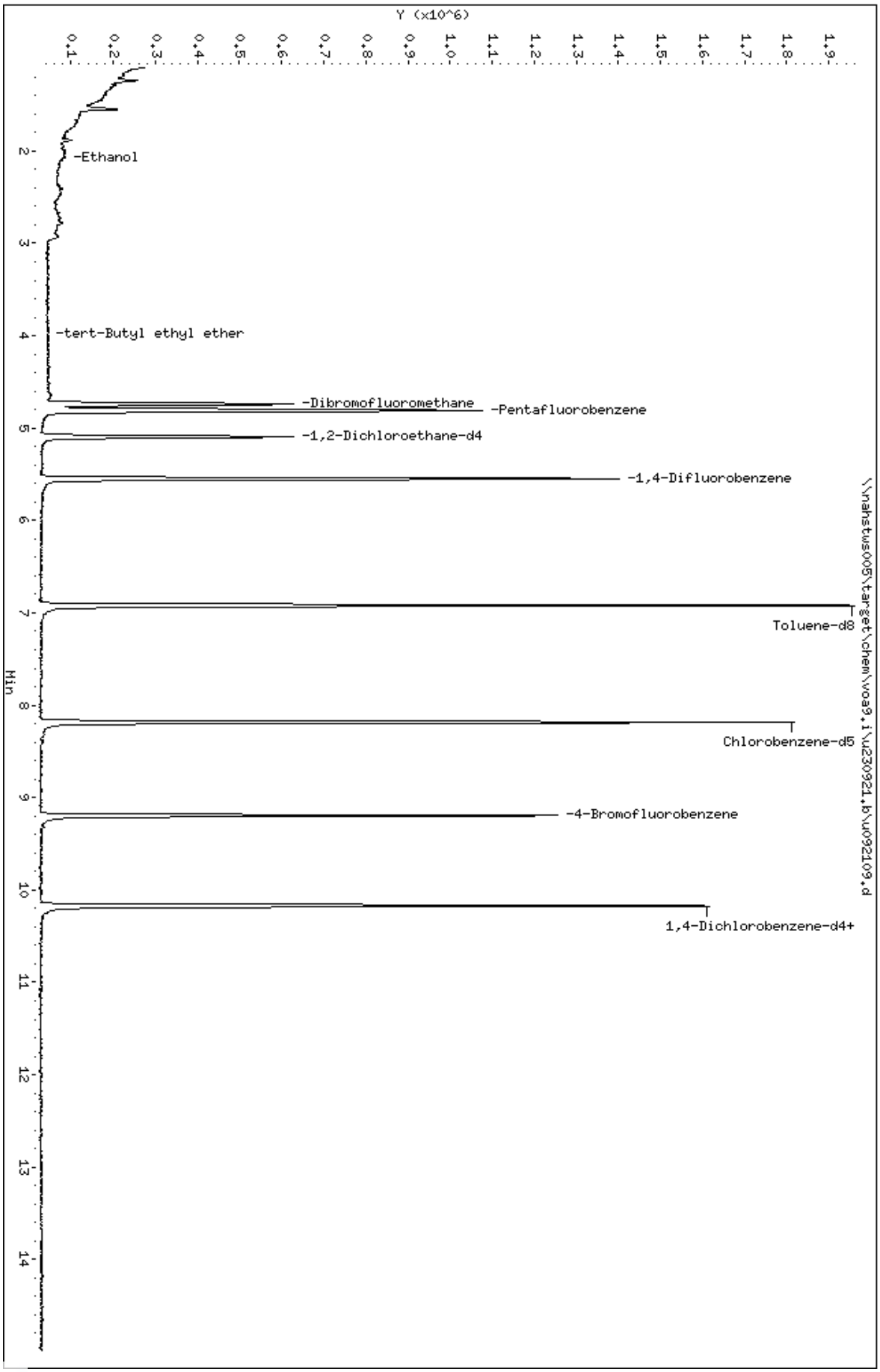
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

| Name | Value | Description |
|---|---|---|
| DF | 1.000 | Dilution Factor |
| Uf | 5.000 | ng unit correction factor |
| Vo | 5.000 | sample purged |
| Cpnd Variable | | Local Compound Variable |

| Compounds | QUANT SIG MASS | RT | EXP RT | REL RT | RESPONSE | CONCENTRATIONS ON-COLUMN ( ug/l) | FINAL ( ug/l) |
|---|---|---|---|---|---|---|---|
| * 1 Pentafluorobenzene | 168 | 4.808 | 4.815 | (1.000) | 725975 | 50.0000 | |
| $ 30 Dibromofluoromethane | 113 | 4.740 | 4.748 | (0.986) | 335836 | 50.6988 | 50.69 |
| $ 35 1,2-Dichloroethane-d4 | 65 | 5.093 | 5.096 | (1.059) | 388697 | 51.9576 | 51.95 |
| * 36 1,4-Difluorobenzene | 114 | 5.550 | 5.554 | (1.000) | 1006415 | 50.0000 | |
| * 47 Chlorobenzene-d5 | 117 | 8.185 | 8.185 | (1.000) | 898347 | 50.0000 | |
| $ 48 Toluene-d8 | 98 | 6.922 | 6.922 | (0.846) | 1108911 | 55.9904 | 55.99(M) |
| $ 69 4-Bromofluorobenzene | 95 | 9.194 | 9.194 | (1.123) | 366703 | 42.5787 | 42.57(M) |
| * 70 1,4-Dichlorobenzene-d4 | 152 | 10.172 | 10.168 | (1.000) | 414843 | 50.0000 | |

QC Flag Legend

M - Compound response manually integrated.




Data File: \\nahstws005\target\chem\voa9.i\u230921.b\u092109.d
Date : 21-SEP-2023 13:42
Client ID: HS230911194-02
Sample Info: HS230911194-02;HS230911194-02;;;
Purge Volume: 5.0
Column phase: DB624

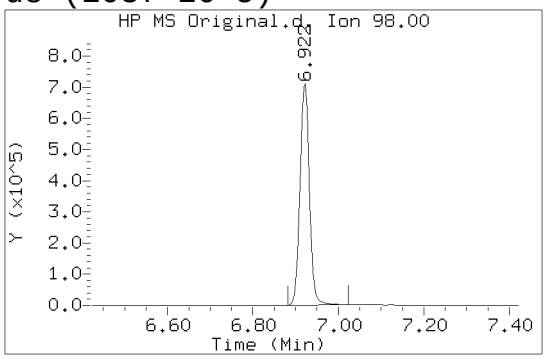
Instrument: VOA9.i
Operator: PC
Column diameter: 0.18

Data File : \\nahstws005\target\chem\voa9.i\u230921.b\u092109.d
Inj Date : 21-SEP-2023 13:42
InstruID : VOA9.i
LabSampID : HS23091194-02

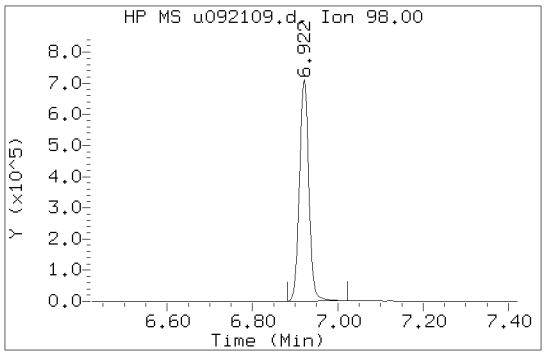
## Toluene-d8 (2037-26-5)

Reason Code:

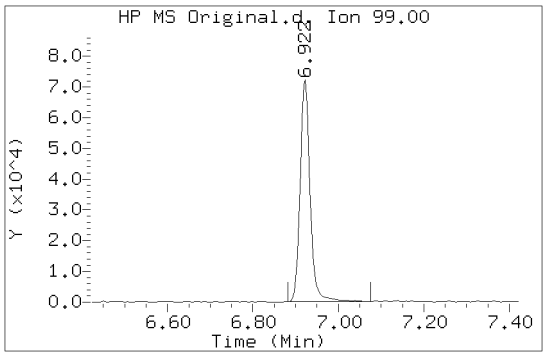
BEFORE
MASS
98
AREA
1108911
HEIGHT
710489
21-Sep-2023
22:07



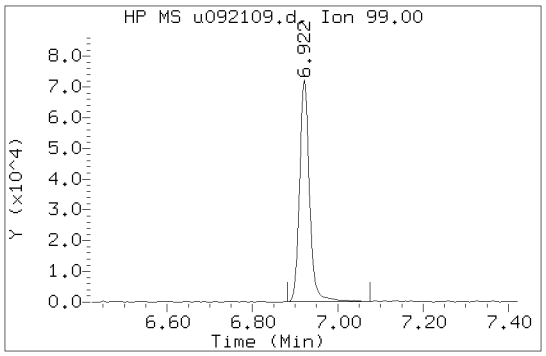

AFTER
MASS
98
AREA
1108911
HEIGHT
710489
21-Sep-2023
22:07



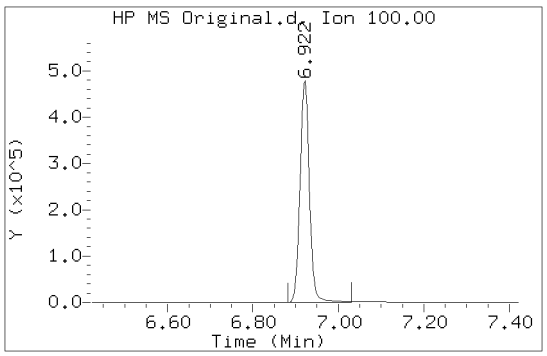

BEFORE
MASS
99
AREA
119584
HEIGHT
72140
21-Sep-2023
22:07



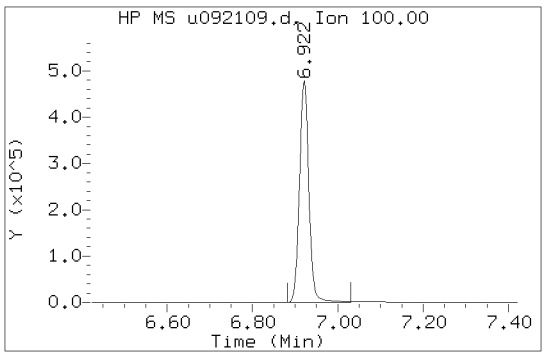

AFTER
MASS
99
AREA
119584
HEIGHT
72140
21-Sep-2023
22:07




BEFORE
MASS
100
AREA
742993
HEIGHT
478584
21-Sep-2023
22:07



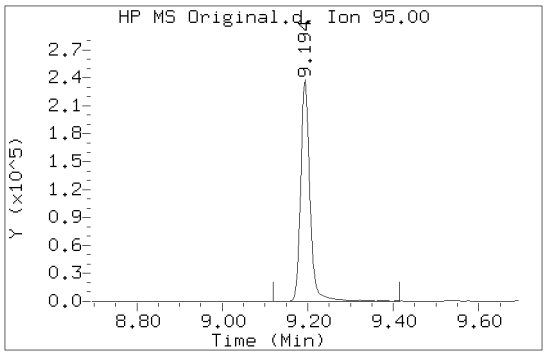

AFTER
MASS
100
AREA
742993
HEIGHT
478584
21-Sep-2023
22:07



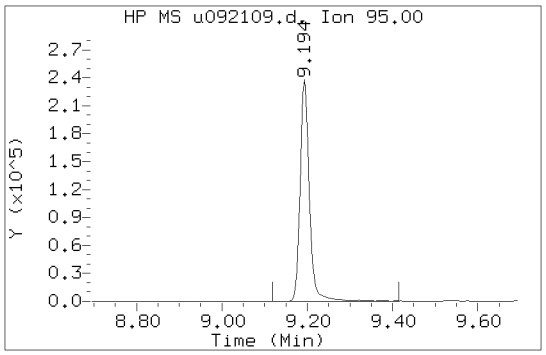

## 4-Bromofluorobenzene (460-00-4)

Reason Code:

BEFORE
MASS
95
AREA
366703
HEIGHT
237945
21-Sep-2023
22:07




AFTER
MASS
95
AREA
366703
HEIGHT
237945
21-Sep-2023
22:07



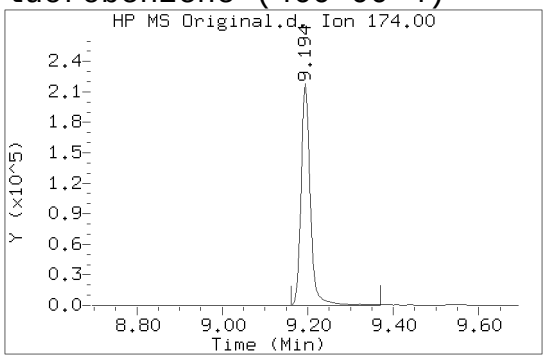
Data File : \\nahstws005\target\chem\voa9.i\u230921.b\u092109.d
Inj Date : 21-SEP-2023 13:42
InstruID : VOA9.i
LabSampID : HS23091194-02

4-Bromofluorobenzene (460-00-4)

Reason Code:

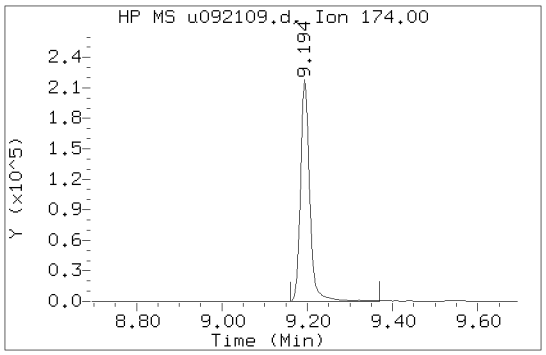
BEFORE

MASS
174
AREA
330684
HEIGHT
217713
21-Sep-2023
22:07



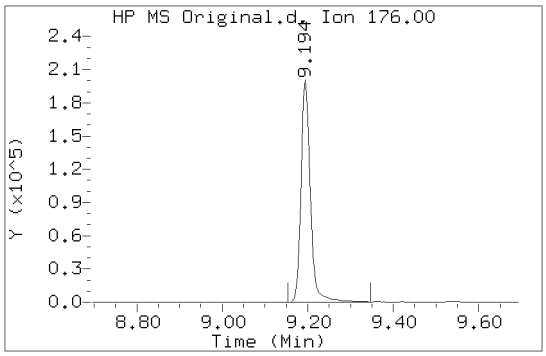

AFTER

MASS
174
AREA
330684
HEIGHT
217713
21-Sep-2023
22:07



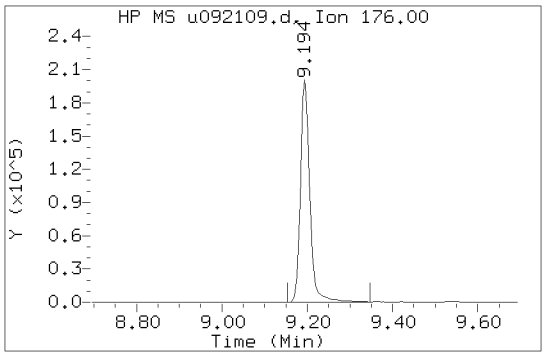

BEFORE

MASS
176
AREA
310006
HEIGHT
200527
21-Sep-2023
22:07




AFTER

MASS
176
AREA
310006
HEIGHT
200527
21-Sep-2023
22:07



Data File: \\NAHSTWS005\Target\chem\voa9.i\U230921.b\U092110.D  Page 1
Report Date: 21-Sep-2023 16:17

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa9.i\U230921.b\U092110.D
Lab Smp Id: HS23091194-01  Client Smp ID: HS23091194-01
Inj Date  : 21-SEP-2023 14:04
Operator  : PC  Inst ID: VOA9.i
Smp Info  : HS23091194-01;HS23091194-01;;;
Misc Info : V9;WATER;0;1;
Comment   :
Method    : \\nahstws005\Target\chem\voa9.i\U230921.b\8260C.m
Meth Date : 21-Sep-2023 16:12 pcabasca  Quant Type: ISTD
Cal Date  : 14-SEP-2023 18:22  Cal File: U091408.D
Als bottle: 9
Dil Factor: 1.00000
Integrator: HP RTE  Compound Sublist: 8260_GB.sub
Target Version:  4.14
Processing Host: NAHSTWS005

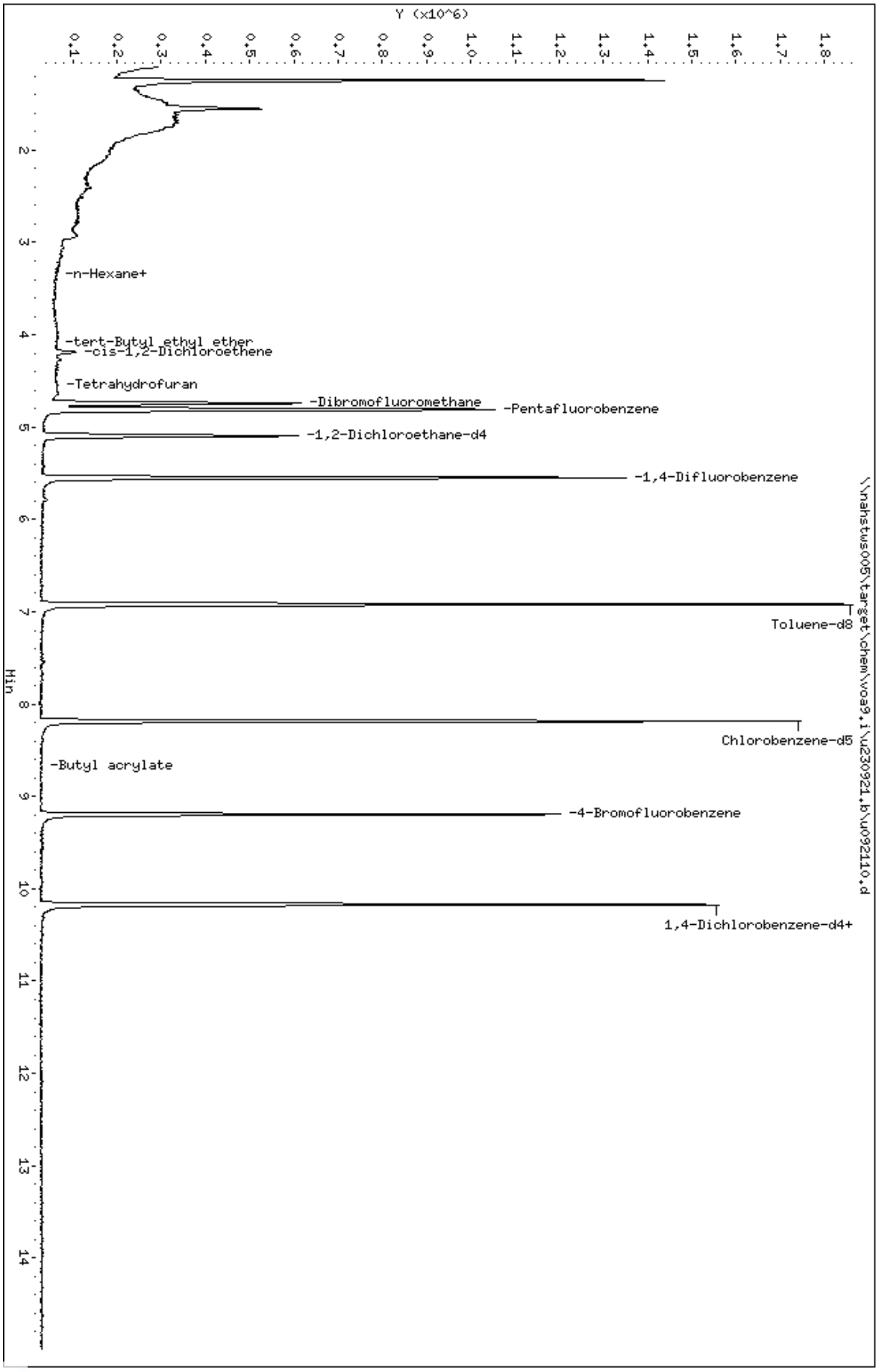
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

| Name | Value | Description |
|---|---|---|
| DF | 1.000 | Dilution Factor |
| Uf | 5.000 | ng unit correction factor |
| Vo | 5.000 | sample purged |
| Cpnd Variable | | Local Compound Variable |

| | Compounds | QUANT SIG MASS | RT | EXP RT | REL RT | RESPONSE | CONCENTRATIONS ON-COLUMN ( ug/l) | FINAL ( ug/l) |
|---|---|---|---|---|---|---|---|---|
| * | 1 Pentafluorobenzene | 168 | 4.811 | 4.815 | (1.000) | 708269 | 50.0000 | |
| | 27 cis-1,2-Dichloroethene | 96 | 4.193 | 4.197 | (0.871) | 19423 | 2.30989 | 2.30(a) |
| $ | 30 Dibromofluoromethane | 113 | 4.744 | 4.748 | (0.986) | 324648 | 50.2369 | 50.23 |
| $ | 35 1,2-Dichloroethane-d4 | 65 | 5.093 | 5.096 | (1.058) | 373403 | 51.1587 | 51.15 |
| * | 36 1,4-Difluorobenzene | 114 | 5.550 | 5.554 | (1.000) | 970113 | 50.0000 | |
| * | 47 Chlorobenzene-d5 | 117 | 8.185 | 8.185 | (1.000) | 865068 | 50.0000 | |
| $ | 48 Toluene-d8 | 98 | 6.922 | 6.922 | (0.846) | 1067201 | 55.9574 | 55.95(M) |
| $ | 69 4-Bromofluorobenzene | 95 | 9.194 | 9.194 | (1.123) | 353297 | 42.5994 | 42.59(M) |
| * | 70 1,4-Dichlorobenzene-d4 | 152 | 10.172 | 10.168 | (1.000) | 397287 | 50.0000 | |
| M | 94 1,2-Dichloroethylene (total) | 96 | | | | 19423 | 2.46440 | 2.46(a) |

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.




Data File: \\nahstws005\target\chem\woa9.i\u230921.b\u092110.d
Date : 21-SEP-2023 14:04
Client ID: HS23091194-01
Sample Info: HS23091194-01;HS23091194-01;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: WOA9.i
Operator: PC
Column diameter: 0.18

Data File: \\nahstws005\target\chem\voa9.i\u230921.b\u092110.d Page 2

Date : 21-SEP-2023 14:04

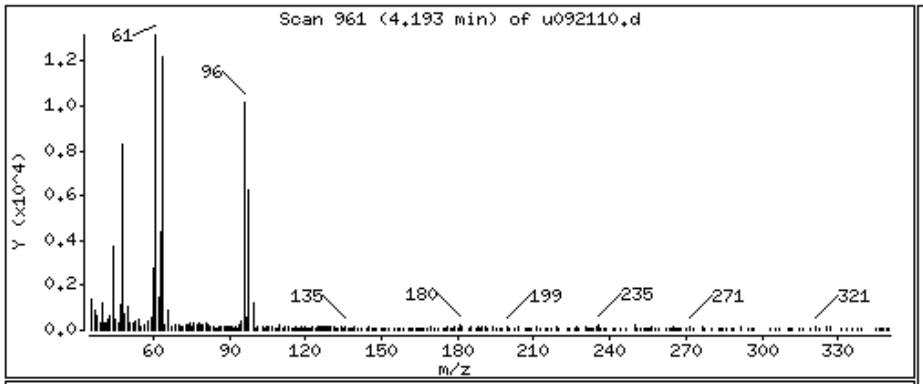
Client ID: HS23091194-01 Instrument: VOA9.i

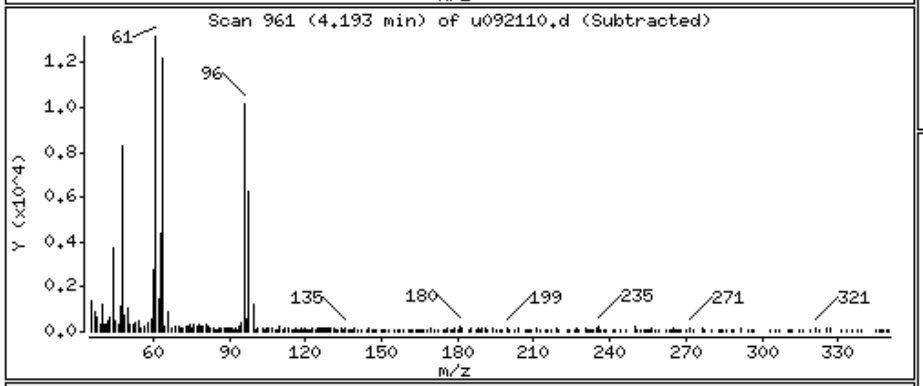
Sample Info: HS23091194-01;HS23091194-01;;;

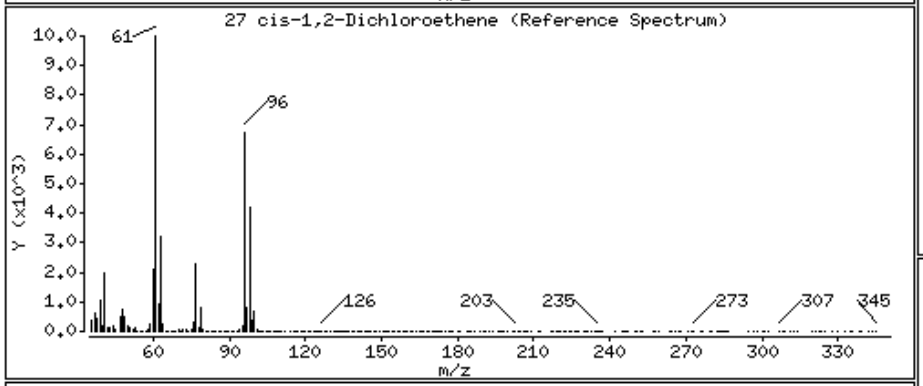
Purge Volume: 5.0 Operator: PC

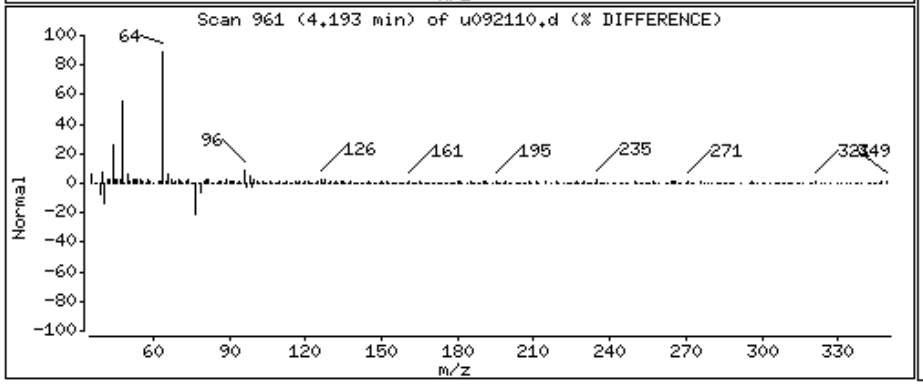
Column phase: DB624 Column diameter: 0.18

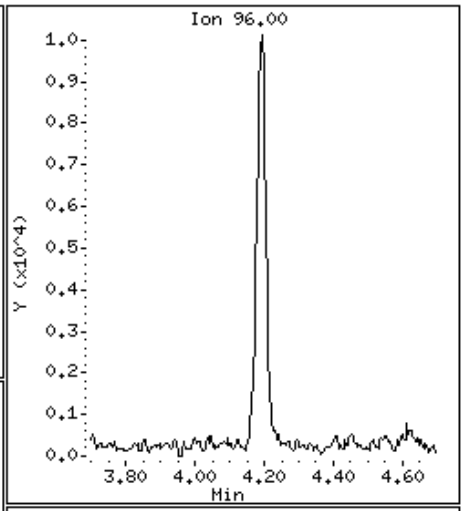
27 cis-1,2-Dichloroethene Concentration: 2.30 ug/l

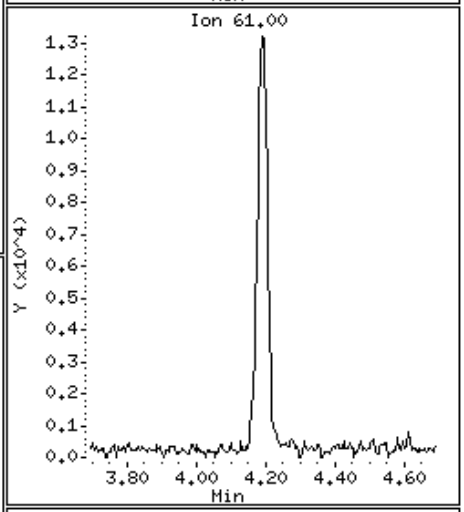


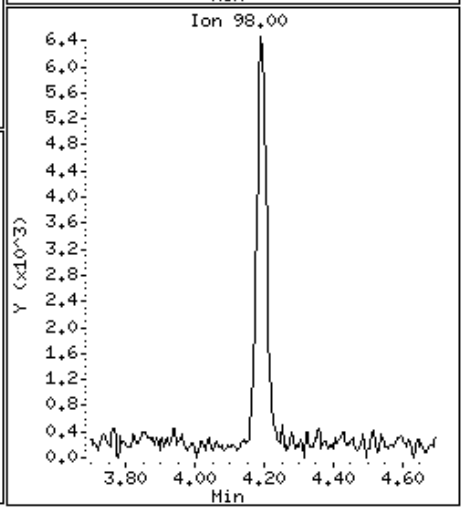



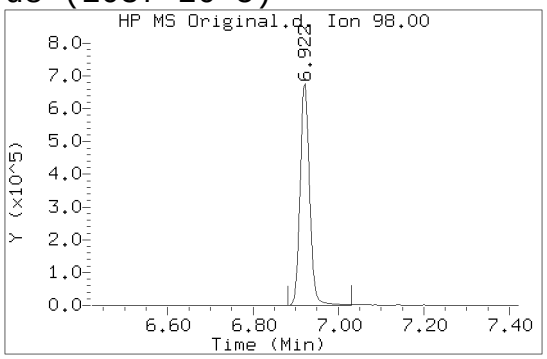
Data File : \\nahstws005\target\chem\voa9.i\u230921.b\u092110.d
Inj Date : 21-SEP-2023 14:04
InstruID : VOA9.i
LabSampID : HS23091194-01

## Toluene-d8 (2037-26-5)

Reason Code:

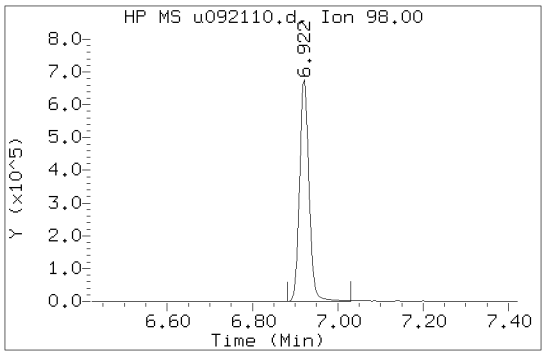
**BEFORE**

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HEIGHT
676218
21-Sep-2023
22:07



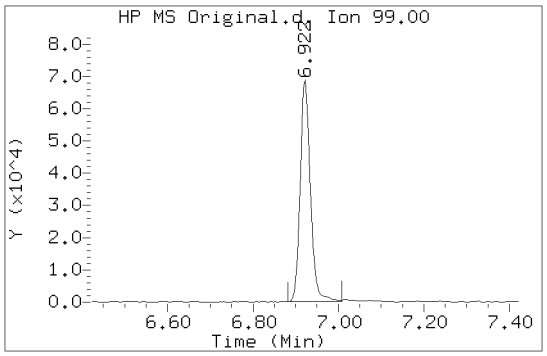

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21-Sep-2023
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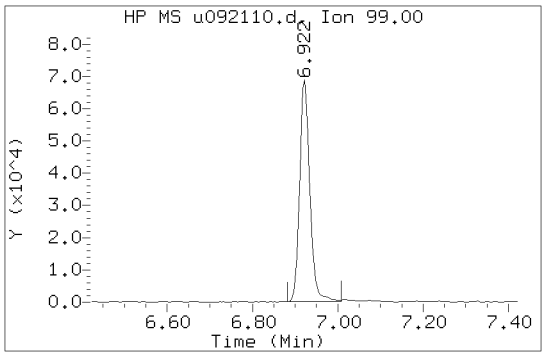

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21-Sep-2023
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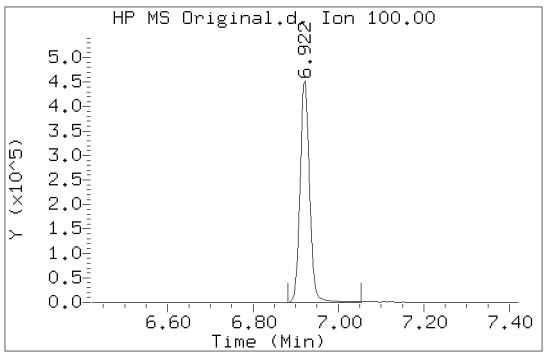

**AFTER**

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HEIGHT
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21-Sep-2023
22:07



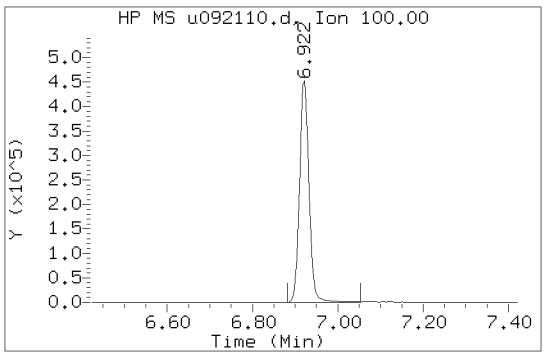

**BEFORE**

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21-Sep-2023
22:07




**AFTER**

MASS
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AREA
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HEIGHT
452684
21-Sep-2023
22:07

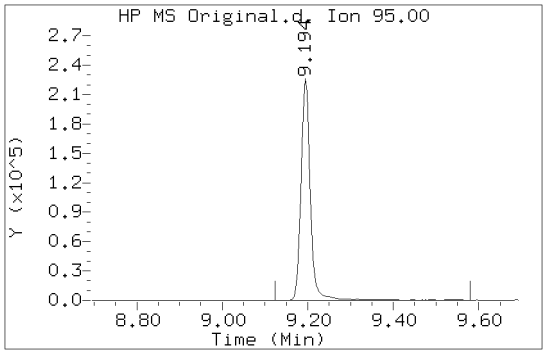



## 4-Bromofluorobenzene (460-00-4)

Reason Code:

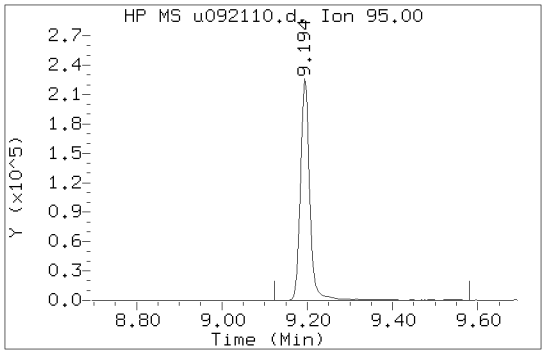
**BEFORE**

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HEIGHT
226176
21-Sep-2023
22:07




**AFTER**

MASS
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AREA
353297
HEIGHT
226176
21-Sep-2023
22:07



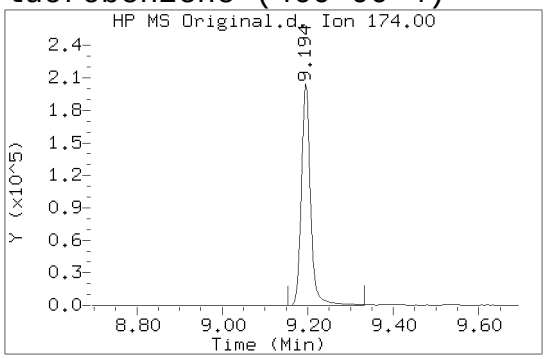
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Inj Date : 21-SEP-2023 14:04
InstruID : VOA9.i
LabSampID : HS23091194-01

4-Bromofluorobenzene (460-00-4)

Reason Code:

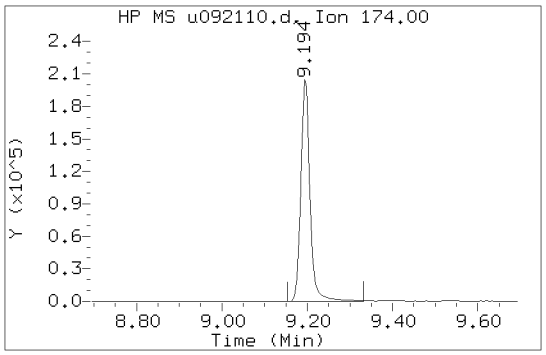
BEFORE

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HEIGHT
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21-Sep-2023
22:07



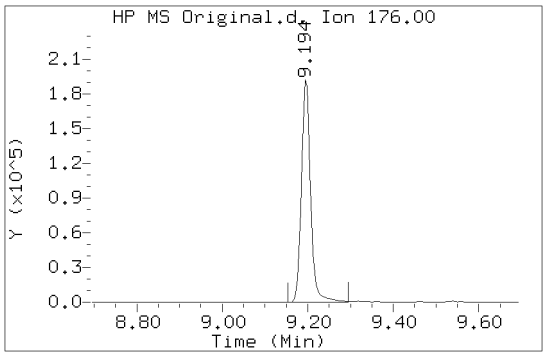

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21-Sep-2023
22:07



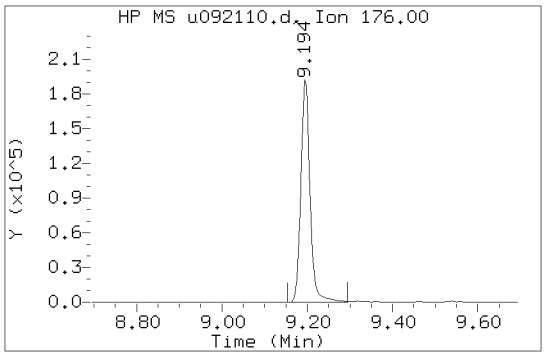

BEFORE

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21-Sep-2023
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AFTER

MASS
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AREA
293652
HEIGHT
192064
21-Sep-2023
22:07



Data File: \\NAHSTWS005\Target\chem\voa9.i\U230921.b\U092113.D  Page 1
Report Date: 21-Sep-2023 22:44

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa9.i\U230921.b\U092113.D
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Inj Date  : 21-SEP-2023 15:11
Operator  : PC  Inst ID: VOA9.i
Smp Info  : HS23091194-01MS;HS23091194-01MS;3;;MS
Misc Info : V9;WATER;0;1;
Comment   :
Method    : \\nahstws005\Target\chem\voa9.i\U230921.b\8260C.m
Meth Date : 21-Sep-2023 22:08 pcabasca  Quant Type: ISTD
Cal Date  : 14-SEP-2023 18:22  Cal File: U091408.D
Als bottle: 12  QC Sample: MS
Dil Factor: 1.00000
Integrator: HP RTE  Compound Sublist: 8260_GB.sub
Target Version:  4.14
Processing Host: NAHSTWS005

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

| Name | Value | Description |
|---|---|---|
| DF | 1.000 | Dilution Factor |
| Uf | 5.000 | ng unit correction factor |
| Vo | 5.000 | sample purged |
| Cpnd Variable | | Local Compound Variable |

| Compounds | QUANT SIG MASS | RT | EXP RT | REL RT | RESPONSE | CONCENTRATIONS ON-COLUMN ( ug/l) | FINAL ( ug/l) |
|---|---|---|---|---|---|---|---|
| * 1 Pentafluorobenzene | 168 | 4.815 | 4.815 | (1.000) | 707490 | 50.0000 | |
| 2 Dichlorodifluoromethane | 85 | 1.164 | 1.164 | (0.242) | 139499 | 18.8372 | 18.83 |
| 3 Chloromethane | 50 | 1.299 | 1.295 | (0.270) | 289386 | 21.6132 | 21.61 |
| 5 Vinyl Chloride | 62 | 1.378 | 1.378 | (0.286) | 214978 | 23.9370 | 23.93 |
| 6 Bromomethane | 94 | 1.618 | 1.617 | (0.336) | 114715 | 26.3981 | 26.39 |
| 7 Chloroethane | 64 | 1.700 | 1.700 | (0.353) | 163005 | 24.6790 | 24.67(M) |
| 8 Trichlorofluoromethane | 101 | 1.895 | 1.899 | (0.394) | 295617 | 25.6557 | 25.65 |
| 9 Acrolein | 56 | 2.266 | 2.266 | (0.471) | 18914 | 31.1575 | 31.15 |
| 10 Acetone | 43 | 2.409 | 2.408 | (0.500) | 143286 | 38.6294 | 38.62 |
| 11 1,1-Dichloroethene | 96 | 2.334 | 2.333 | (0.485) | 164285 | 23.4599 | 23.45 |
| 15 Iodomethane | 142 | 2.469 | 2.468 | (0.513) | 189667 | 49.6671 | 49.66 |
| 16 Acrylonitrile | 53 | 3.065 | 3.064 | (0.636) | 185251 | 44.8881 | 44.88 |
| 17 Methylene Chloride | 84 | 2.795 | 2.795 | (0.580) | 206807 | 24.1802 | 24.18 |
| 18 Methyl tert-butyl ether | 73 | 3.080 | 3.079 | (0.640) | 448986 | 22.5821 | 22.58 |
| 19 Carbon Disulfide | 76 | 2.521 | 2.521 | (0.524) | 962815 | 50.8993 | 50.89 |
| 20 trans-1,2-Dichloroethene | 96 | 3.057 | 3.057 | (0.635) | 182352 | 24.8227 | 24.82 |
| 21 Vinyl Acetate | 43 | 3.608 | 3.608 | (0.749) | 1184014 | 45.5563 | 45.55 |
| 22 1,1-Dichloroethane | 63 | 3.515 | 3.514 | (0.730) | 353684 | 24.0064 | 24.00 |
| 24 2-Butanone | 43 | 4.268 | 4.268 | (0.886) | 187001 | 43.6078 | 43.60 |
| 26 2,2-Dichloropropane | 77 | 4.182 | 4.182 | (0.868) | 223870 | 25.0949 | 25.09 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 27 | cis-1,2-Dichloroethene | 96 | 4.197 | 4.197 (0.872) | 217469 | 25.8911 | 25.89 |
| 28 | Chloroform | 83 | 4.572 | 4.571 (0.949) | 338569 | 23.6672 | 23.66 |

Data File: \\NAHSTWS005\Target\chem\voa9.i\U230921.b\U092113.D Page 2
Report Date: 21-Sep-2023 22:44

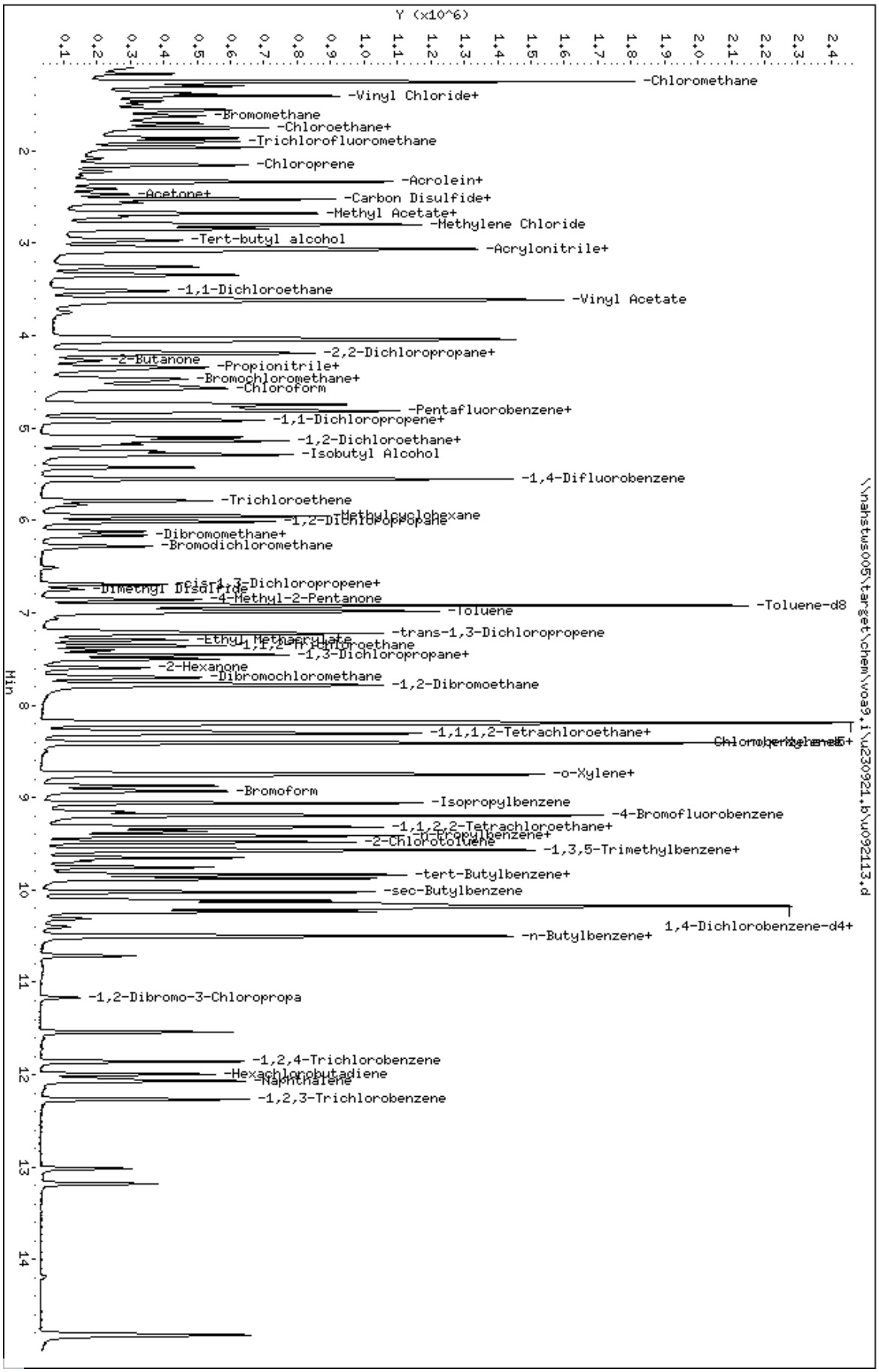
| | Compounds | QUANT SIG MASS | RT | EXP RT | REL RT | RESPONSE | CONCENTRATIONS ON-COLUMN ( ug/l) | FINAL ( ug/l) |
|---|---|---|---|---|---|---|---|---|
| | 29 Bromochloromethane | 128 | 4.467 | 4.470 | (0.928) | 95998 | 21.8092 | 21.80 |
| $ | 30 Dibromofluoromethane | 113 | 4.748 | 4.748 | (0.986) | 325373 | 50.4039 | 50.40 |
| | 31 1,1,1-Trichloroethane | 97 | 4.740 | 4.740 | (0.984) | 216681 | 22.3046 | 22.30 |
| | 32 1,1-Dichloropropene | 75 | 4.920 | 4.920 | (0.886) | 194753 | 23.9993 | 23.99 |
| | 33 1,2-Dichloroethane | 62 | 5.175 | 5.175 | (0.932) | 219515 | 22.2156 | 22.21 |
| | 34 Carbon Tetrachloride | 117 | 4.909 | 4.909 | (0.884) | 183665 | 25.2981 | 25.29 |
| $ | 35 1,2-Dichloroethane-d4 | 65 | 5.097 | 5.096 | (1.058) | 373479 | 51.2257 | 51.22 |
| * | 36 1,4-Difluorobenzene | 114 | 5.554 | 5.554 | (1.000) | 1022232 | 50.0000 | |
| | 37 Benzene | 78 | 5.138 | 5.137 | (0.925) | 600376 | 23.3834 | 23.38 |
| | 38 Trichloroethene | 130 | 5.786 | 5.786 | (1.042) | 163063 | 21.8353 | 21.83 |
| | 39 Bromodichloromethane | 83 | 6.281 | 6.277 | (1.131) | 177889 | 21.3617 | 21.36 |
| | 42 1,2-Dichloropropane | 63 | 6.011 | 6.011 | (1.082) | 166436 | 24.5475 | 24.54 |
| | 44 Dibromomethane | 93 | 6.120 | 6.120 | (1.102) | 100885 | 21.6103 | 21.61 |
| | 45 4-Methyl-2-Pentanone | 43 | 6.858 | 6.858 | (0.838) | 290785 | 42.7346 | 42.73 |
| | 46 cis-1,3-Dichloropropene | 75 | 6.693 | 6.693 | (1.205) | 179733 | 19.4571 | 19.45 |
| * | 47 Chlorobenzene-d5 | 117 | 8.185 | 8.185 | (1.000) | 950272 | 50.0000 | |
| $ | 48 Toluene-d8 | 98 | 6.922 | 6.922 | (0.846) | 1193326 | 56.9603 | 56.96 |
| | 50 Toluene | 91 | 6.982 | 6.982 | (0.853) | 652901 | 25.5874 | 25.58 |
| | 51 trans-1,3-Dichloropropene | 75 | 7.200 | 7.195 | (1.296) | 149015 | 19.2113 | 19.21 |
| | 52 2-Hexanone | 43 | 7.593 | 7.593 | (0.928) | 194909 | 45.2429 | 45.24 |
| | 53 1,1,2-Trichloroethane | 83 | 7.357 | 7.357 | (0.899) | 124559 | 22.3863 | 22.38 |
| | 54 1,3-Dichloropropane | 76 | 7.499 | 7.499 | (0.916) | 257055 | 22.9685 | 22.96 |
| | 55 Dibromochloromethane | 129 | 7.691 | 7.690 | (0.940) | 139085 | 21.0011 | 21.00 |
| | 56 Tetrachloroethene | 164 | 7.458 | 7.458 | (0.911) | 147079 | 24.7384 | 24.73 |
| | 57 1,2-Dibromoethane | 107 | 7.784 | 7.784 | (0.951) | 150243 | 22.4677 | 22.46 |
| | 58 1-Chlorohexane | 55 | 8.197 | 8.196 | (1.476) | 161763 | 26.1936 | 26.19 |
| | 59 Chlorobenzene | 112 | 8.208 | 8.208 | (1.003) | 432404 | 22.9115 | 22.91 |
| | 60 1,1,1,2-Tetrachloroethane | 131 | 8.283 | 8.283 | (1.012) | 138088 | 21.7705 | 21.77 |
| | 61 Ethylbenzene | 106 | 8.305 | 8.305 | (1.015) | 209953 | 24.8450 | 24.84 |
| | 62 m,p-Xylenes | 106 | 8.410 | 8.406 | (1.027) | 532271 | 50.0884 | 50.08 |
| | 63 o-Xylene | 106 | 8.748 | 8.747 | (1.069) | 255648 | 23.1482 | 23.14 |
| | 64 Styrene | 104 | 8.763 | 8.762 | (1.071) | 364894 | 21.5180 | 21.51 |
| | 66 Bromoform | 173 | 8.920 | 8.916 | (1.090) | 85165 | 19.3841 | 19.38 |
| | 67 Isopropylbenzene | 105 | 9.063 | 9.062 | (1.107) | 643576 | 25.5388 | 25.53 |
| | 68 1,1,2,2-Tetrachloroethane | 83 | 9.329 | 9.328 | (0.917) | 215690 | 21.1481 | 21.14 |
| $ | 69 4-Bromofluorobenzene | 95 | 9.194 | 9.194 | (1.123) | 467187 | 50.8712 | 50.87 |
| * | 70 1,4-Dichlorobenzene-d4 | 152 | 10.168 | 10.168 | (1.000) | 524986 | 50.0000 | |
| | 71 1,2,3-Trichloropropane | 75 | 9.363 | 9.362 | (0.921) | 183914 | 21.1598 | 21.15 |
| | 73 n-Propylbenzene | 91 | 9.411 | 9.411 | (0.926) | 721847 | 23.8905 | 23.89 |
| | 74 Bromobenzene | 156 | 9.318 | 9.317 | (0.916) | 183364 | 21.9764 | 21.97 |
| | 75 1,3,5-Trimethylbenzene | 105 | 9.561 | 9.561 | (0.940) | 480943 | 24.3556 | 24.35 |
| | 76 2-Chlorotoluene | 91 | 9.482 | 9.482 | (0.933) | 469128 | 24.0665 | 24.06 |
| | 77 4-Chlorotoluene | 91 | 9.576 | 9.576 | (0.942) | 553404 | 24.1940 | 24.19 |
| | 78 tert-Butylbenzene | 119 | 9.835 | 9.838 | (0.967) | 459305 | 24.1708 | 24.17 |
| | 79 1,2,4-Trimethylbenzene | 105 | 9.876 | 9.876 | (0.971) | 492254 | 24.2516 | 24.25 |
| | 81 sec-Butylbenzene | 105 | 10.022 | 10.022 | (0.986) | 596677 | 24.2103 | 24.21 |
| | 82 p-Isopropyltoluene | 119 | 10.146 | 10.146 | (0.998) | 494858 | 25.1301 | 25.13 |
| | 83 1,3-Dichlorobenzene | 146 | 10.116 | 10.116 | (0.995) | 321285 | 21.8322 | 21.83 |
| | 84 1,4-Dichlorobenzene | 146 | 10.191 | 10.191 | (1.002) | 355206 | 21.4832 | 21.48 |
| | 87 n-Butylbenzene | 91 | 10.491 | 10.491 | (1.032) | 457608 | 25.4698 | 25.46 |
| | 88 1,2-Dichlorobenzene | 146 | 10.506 | 10.506 | (1.033) | 325248 | 21.6097 | 21.60 |
| | 89 1,2-Dibromo-3-Chloropropane | 155 | 11.166 | 11.169 | (1.098) | 22597 | 17.8075 | 17.80 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 90 1,2,4-Trichlorobenzene | 180 | 11.859 | 11.855 (1.166) | 182378 | 21.2849 | 21.28 |
| 91 Hexachlorobutadiene | 225 | 11.998 | 11.998 (1.180) | 93783 | 24.3942 | 24.39 |

| | Compounds | QUANT SIG MASS | RT | EXP RT | REL RT | RESPONSE | CONCENTRATIONS ON-COLUMN ( ug/l) | FINAL ( ug/l) |
|---|---|---|---|---|---|---|---|---|
| | 92 Naphthalene | 128 | 12.065 | 12.065 | (1.187) | 422515 | 19.7601 | 19.76 |
| | 93 1,2,3-Trichlorobenzene | 180 | 12.268 | 12.267 | (1.206) | 182159 | 22.3924 | 22.39 |
| M | 94 1,2-Dichloroethylene (total) | 96 | | | | 399821 | 50.7853 | 50.78 |
| M | 95 Xylenes (total) | 106 | | | | 787919 | 70.4224 | 70.42 |
| | 135 1,4-Dioxane | 88 | 6.172 | 6.172 | (1.282) | 36124 | 351.267 | 351.26 |
| | 141 Cyclohexane | 56 | 4.782 | 4.781 | (0.993) | 263556 | 28.0929 | 28.09 |
| | 138 Freon TF | 101 | 2.334 | 2.333 | (0.485) | 166441 | 29.3126 | 29.31 |
| | 140 1,3-Butadiene | 54 | 1.404 | 1.404 | (0.292) | 195989 | 23.4484 | 23.44 |
| | 147 Methylcyclohexane | 55 | 5.951 | 5.947 | (1.072) | 381927 | 25.4874 | 25.48 |
| | 146 Methyl Acetate | 43 | 2.712 | 2.712 | (0.563) | 190238 | 22.1768 | 22.17 |
| | 148 Tert-Butyl alcohol | 59 | 2.964 | 2.967 | (0.615) | 357570 | 412.478 | 412.47 |
| | 149 Isopropyl Alcohol | 45 | 2.562 | 2.562 | (0.532) | 259444 | 417.182 | 417.18 |
| | 72 trans-1,4-Dichloro-2-butene | 53 | 9.378 | 9.377 | (1.146) | 32709 | 23.7515 | 23.75 |
| | 12 Isobutyl Alcohol | 43 | 5.291 | 5.291 | (1.099) | 421380 | 420.446 | 420.44 |
| | 13 Acetonitrile | 39 | 2.671 | 2.671 | (0.555) | 264793 | 245.306 | 245.30 |
| | 14 Allyl Chloride | 41 | 2.671 | 2.671 | (0.555) | 582441 | 23.2183 | 23.21 |
| | 25 Methacrylonitrile | 41 | 4.497 | 4.496 | (0.934) | 129346 | 23.2571 | 23.25 |
| | 40 Methyl Methacrylate | 41 | 6.157 | 6.157 | (1.279) | 129044 | 22.2741 | 22.27 |
| | 4 Propionitrile | 54 | 4.339 | 4.339 | (0.901) | 331339 | 216.185 | 216.18(a) |
| | 194 Acetaldehyde | 44 | 1.460 | 1.452 | (0.303) | 99890 | 66.2709 | 66.27(M) |
| | 131 Methyl Acrylate | 55 | 4.369 | 4.369 | (0.907) | 255951 | 23.2423 | 23.24 |
| | 200 Dimethyl Disulfide | 94 | 6.746 | 6.746 | (0.824) | 57972 | 12.6282 | 12.62 |
| | 23 Chloroprene | 53 | 2.158 | 2.157 | (0.448) | 80330 | 28.3756 | 28.37 |
| | 49 Ethyl Methacrylate | 69 | 7.293 | 7.293 | (1.313) | 195037 | 21.8774 | 21.87 |
| | 166 1,2,3-Trimethylbenzene | 105 | 10.232 | 10.232 | (1.006) | 495525 | 24.5436 | 24.54 |
| | 182 Epichlorohydrin | 57 | 6.633 | 6.637 | (1.194) | 3216 | 40.1673 | 40.16 |

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.




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Purge Volume: 5.0
Column phase: DB624

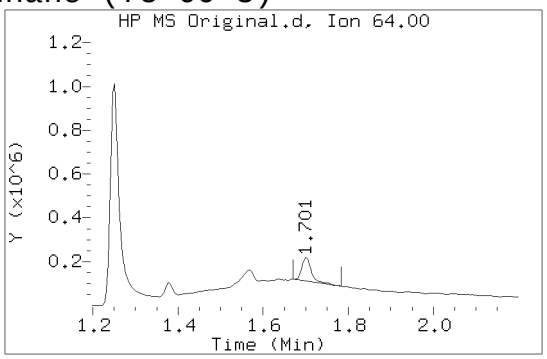
Instrument: VOA9,i
Operator: PC
Column diameter: 0.18

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Inj Date : 21-SEP-2023 15:11
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LabSampID : HS23091194-01MS

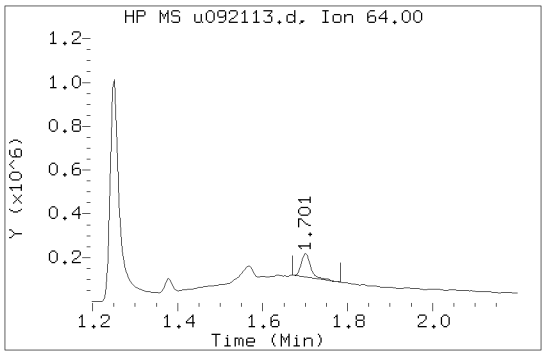
## Chloroethane (75-00-3)

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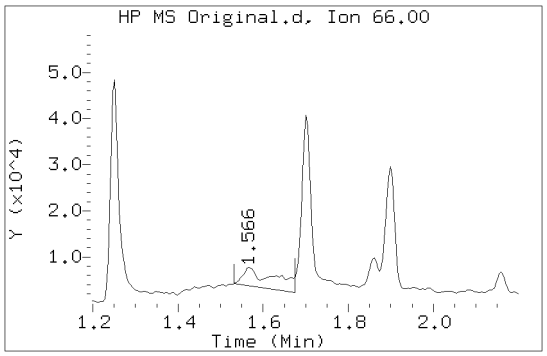
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21-Sep-2023
22:44



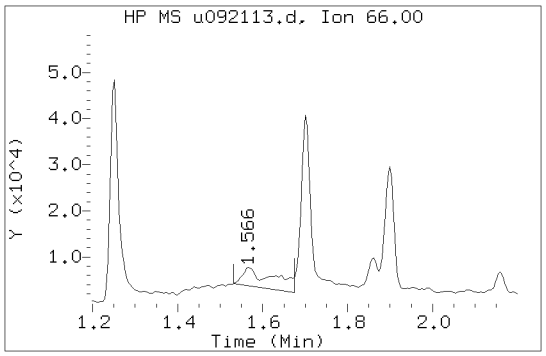

AFTER
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AREA
163005
HEIGHT
108562
21-Sep-2023
22:44




BEFORE
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AREA
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HEIGHT
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21-Sep-2023
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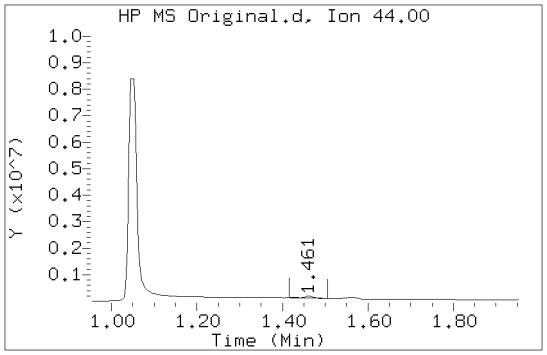

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21-Sep-2023
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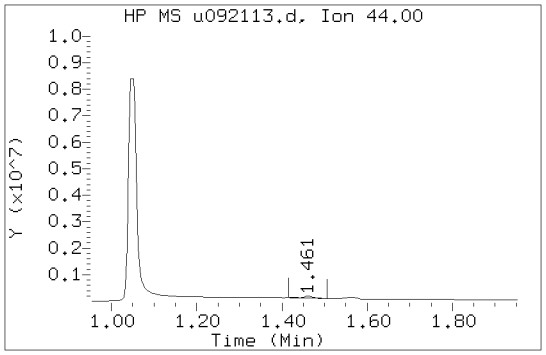

## Acetaldehyde (75-07-0)

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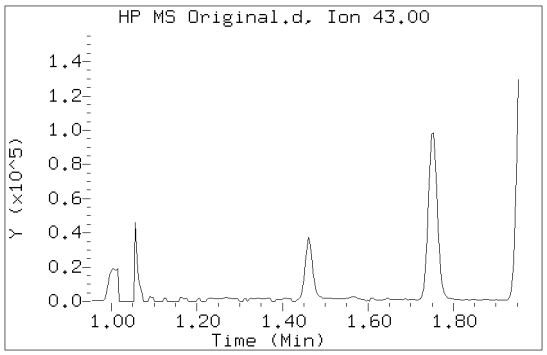
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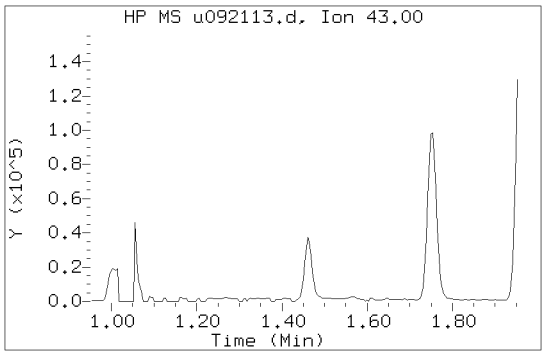

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21-Sep-2023
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BEFORE
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AFTER
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21-Sep-2023
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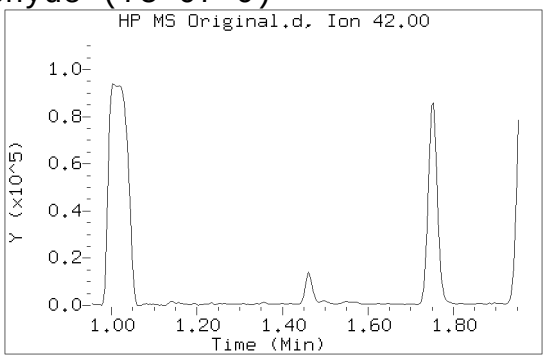
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InstruID : VOA9.i
LabSampID : HS23091194-01MS

Acetaldehyde (75-07-0)

Reason Code:

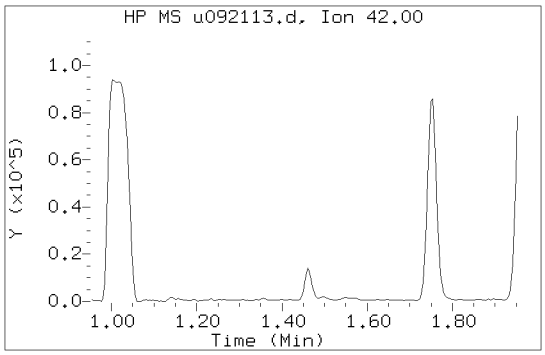
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AFTER

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21-Sep-2023
22:44



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Report Date: 21-Sep-2023 22:45

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa9.i\U230921.b\U092114.D
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Inj Date  : 21-SEP-2023 15:34
Operator  : PC  Inst ID: VOA9.i
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Misc Info : V9;WATER;0;1;
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Cal Date  : 14-SEP-2023 18:22  Cal File: U091408.D
Als bottle: 12  QC Sample: MSD
Dil Factor: 1.00000
Integrator: HP RTE  Compound Sublist: 8260_GB.sub
Target Version:  4.14
Processing Host: NAHSTWS005

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

| Name | Value | Description |
|---|---|---|
| DF | 1.000 | Dilution Factor |
| Uf | 5.000 | ng unit correction factor |
| Vo | 5.000 | sample purged |
| Cpnd Variable | | Local Compound Variable |

| Compounds | QUANT SIG MASS | RT | EXP RT | REL RT | RESPONSE | CONCENTRATIONS ON-COLUMN ( ug/l) | FINAL ( ug/l) |
|---|---|---|---|---|---|---|---|
| * 1 Pentafluorobenzene | 168 | 4.808 | 4.815 | (1.000) | 759829 | 50.0000 | |
| 2 Dichlorodifluoromethane | 85 | 1.153 | 1.164 | (0.240) | 141035 | 17.8112 | 17.81 |
| 3 Chloromethane | 50 | 1.284 | 1.295 | (0.267) | 309484 | 21.5180 | 21.51 |
| 5 Vinyl Chloride | 62 | 1.367 | 1.378 | (0.284) | 236067 | 24.4746 | 24.47 |
| 6 Bromomethane | 94 | 1.606 | 1.617 | (0.334) | 118013 | 25.3052 | 25.30 |
| 7 Chloroethane | 64 | 1.689 | 1.700 | (0.351) | 184504 | 26.0098 | 26.00(M) |
| 8 Trichlorofluoromethane | 101 | 1.884 | 1.899 | (0.392) | 301815 | 24.3893 | 24.38 |
| 9 Acrolein | 56 | 2.255 | 2.266 | (0.469) | 20284 | 31.1127 | 31.11 |
| 10 Acetone | 43 | 2.397 | 2.408 | (0.499) | 162420 | 40.8915 | 40.89 |
| 11 1,1-Dichloroethene | 96 | 2.322 | 2.333 | (0.483) | 171106 | 22.7509 | 22.75 |
| 15 Iodomethane | 142 | 2.457 | 2.468 | (0.511) | 215191 | 52.2014 | 52.20 |
| 16 Acrylonitrile | 53 | 3.057 | 3.064 | (0.636) | 206045 | 46.4877 | 46.48 |
| 17 Methylene Chloride | 84 | 2.784 | 2.795 | (0.579) | 211186 | 23.0746 | 23.07 |
| 18 Methyl tert-butyl ether | 73 | 3.068 | 3.079 | (0.638) | 494754 | 23.1700 | 23.16 |
| 19 Carbon Disulfide | 76 | 2.510 | 2.521 | (0.522) | 1020154 | 50.2157 | 50.21 |
| 20 trans-1,2-Dichloroethene | 96 | 3.050 | 3.057 | (0.634) | 187413 | 23.7543 | 23.75 |
| 21 Vinyl Acetate | 43 | 3.597 | 3.608 | (0.748) | 1283578 | 45.9852 | 45.98 |
| 22 1,1-Dichloroethane | 63 | 3.503 | 3.514 | (0.729) | 368100 | 23.2639 | 23.26 |
| 24 2-Butanone | 43 | 4.257 | 4.268 | (0.885) | 211639 | 45.9537 | 45.95 |
| 26 2,2-Dichloropropane | 77 | 4.174 | 4.182 | (0.868) | 235455 | 24.5755 | 24.57 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 27 cis-1,2-Dichloroethene | 96 | 4.186 | 4.197 (0.871) | 231065 | 25.6149 | 25.61 |
| 28 Chloroform | 83 | 4.564 | 4.571 (0.949) | 354942 | 23.1027 | 23.10 |

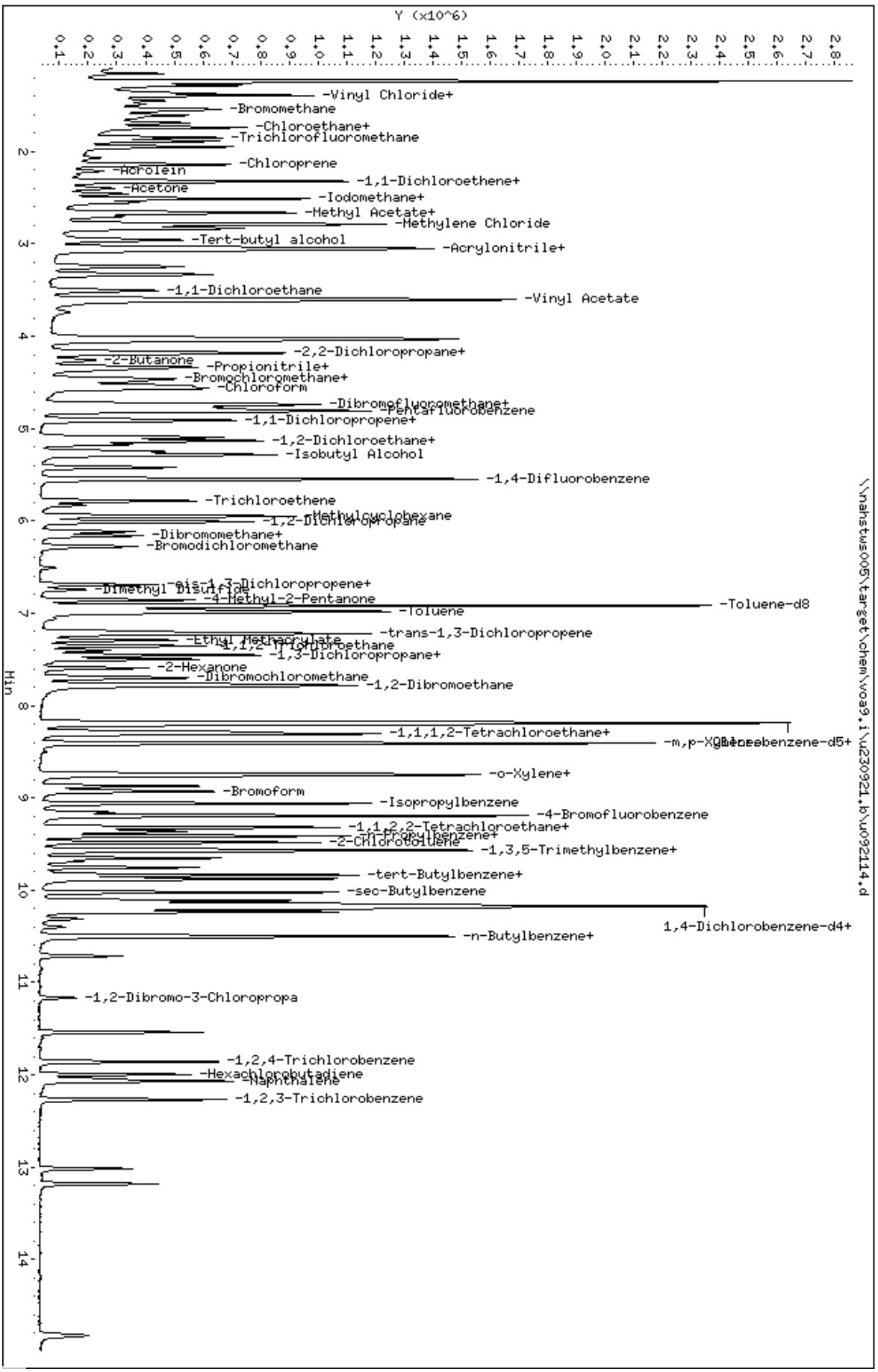
| | Compounds | QUANT SIG MASS | RT | EXP RT | REL RT | RESPONSE | CONCENTRATIONS ON-COLUMN ( ug/l) | CONCENTRATIONS FINAL ( ug/l) |
|---|---|---|---|---|---|---|---|---|
| | 29 Bromochloromethane | 128 | 4.463 | 4.470 | (0.928) | 100454 | 21.2495 | 21.24 |
| $ | 30 Dibromofluoromethane | 113 | 4.740 | 4.748 | (0.986) | 348072 | 50.2068 | 50.20 |
| | 31 1,1,1-Trichloroethane | 97 | 4.733 | 4.740 | (0.984) | 230110 | 22.0553 | 22.05 |
| | 32 1,1-Dichloropropene | 75 | 4.913 | 4.920 | (0.885) | 205053 | 23.2170 | 23.21 |
| | 33 1,2-Dichloroethane | 62 | 5.171 | 5.175 | (0.932) | 230500 | 21.4333 | 21.43 |
| | 34 Carbon Tetrachloride | 117 | 4.902 | 4.909 | (0.883) | 184340 | 23.3296 | 23.32 |
| $ | 35 1,2-Dichloroethane-d4 | 65 | 5.093 | 5.096 | (1.059) | 406328 | 51.8942 | 51.89 |
| * | 36 1,4-Difluorobenzene | 114 | 5.550 | 5.554 | (1.000) | 1112563 | 50.0000 | |
| | 37 Benzene | 78 | 5.130 | 5.137 | (0.924) | 626335 | 22.4138 | 22.41 |
| | 38 Trichloroethene | 130 | 5.782 | 5.786 | (1.042) | 172744 | 21.2535 | 21.25 |
| | 39 Bromodichloromethane | 83 | 6.277 | 6.277 | (1.131) | 188217 | 20.7669 | 20.76 |
| | 42 1,2-Dichloropropane | 63 | 6.007 | 6.011 | (1.082) | 174940 | 23.7069 | 23.70 |
| | 44 Dibromomethane | 93 | 6.116 | 6.120 | (1.102) | 106437 | 20.9485 | 20.94 |
| | 45 4-Methyl-2-Pentanone | 43 | 6.855 | 6.858 | (0.837) | 330344 | 44.2714 | 44.27 |
| | 46 cis-1,3-Dichloropropene | 75 | 6.690 | 6.693 | (1.205) | 193017 | 19.2405 | 19.24 |
| * | 47 Chlorobenzene-d5 | 117 | 8.185 | 8.185 | (1.000) | 1039796 | 50.0000 | |
| $ | 48 Toluene-d8 | 98 | 6.918 | 6.922 | (0.845) | 1322040 | 57.6710 | 57.67 |
| | 50 Toluene | 91 | 6.978 | 6.982 | (0.853) | 691030 | 24.7501 | 24.75 |
| | 51 trans-1,3-Dichloropropene | 75 | 7.196 | 7.195 | (1.296) | 159724 | 18.9563 | 18.95 |
| | 52 2-Hexanone | 43 | 7.593 | 7.593 | (0.928) | 230973 | 48.9982 | 48.99 |
| | 53 1,1,2-Trichloroethane | 83 | 7.353 | 7.357 | (0.898) | 128943 | 21.1790 | 21.17 |
| | 54 1,3-Dichloropropane | 76 | 7.496 | 7.499 | (0.916) | 270956 | 22.1261 | 22.12 |
| | 55 Dibromochloromethane | 129 | 7.691 | 7.690 | (0.940) | 145240 | 20.0423 | 20.04 |
| | 56 Tetrachloroethene | 164 | 7.454 | 7.458 | (0.911) | 153720 | 23.6293 | 23.62 |
| | 57 1,2-Dibromoethane | 107 | 7.784 | 7.784 | (0.951) | 158502 | 21.6620 | 21.66 |
| | 58 1-Chlorohexane | 55 | 8.197 | 8.196 | (1.477) | 167091 | 24.8596 | 24.85 |
| | 59 Chlorobenzene | 112 | 8.208 | 8.208 | (1.003) | 450685 | 21.8242 | 21.82 |
| | 60 1,1,1,2-Tetrachloroethane | 131 | 8.283 | 8.283 | (1.012) | 146073 | 21.0466 | 21.04 |
| | 61 Ethylbenzene | 106 | 8.305 | 8.305 | (1.015) | 219501 | 23.7385 | 23.73 |
| | 62 m,p-Xylenes | 106 | 8.407 | 8.406 | (1.027) | 560367 | 48.1922 | 48.19 |
| | 63 o-Xylene | 106 | 8.744 | 8.747 | (1.068) | 261327 | 21.6252 | 21.62 |
| | 64 Styrene | 104 | 8.759 | 8.762 | (1.070) | 382252 | 20.6008 | 20.60 |
| | 66 Bromoform | 173 | 8.916 | 8.916 | (1.089) | 92026 | 19.1867 | 19.18 |
| | 67 Isopropylbenzene | 105 | 9.063 | 9.062 | (1.107) | 666214 | 24.2644 | 24.26 |
| | 68 1,1,2,2-Tetrachloroethane | 83 | 9.329 | 9.328 | (0.917) | 221914 | 21.1814 | 21.18 |
| $ | 69 4-Bromofluorobenzene | 95 | 9.194 | 9.194 | (1.123) | 484545 | 48.3393 | 48.33 |
| * | 70 1,4-Dichlorobenzene-d4 | 152 | 10.168 | 10.168 | (1.000) | 539286 | 50.0000 | |
| | 71 1,2,3-Trichloropropane | 75 | 9.362 | 9.362 | (0.921) | 198546 | 22.2375 | 22.23 |
| | 73 n-Propylbenzene | 91 | 9.411 | 9.411 | (0.926) | 753101 | 24.2168 | 24.21 |
| | 74 Bromobenzene | 156 | 9.317 | 9.317 | (0.916) | 183533 | 21.4134 | 21.41 |
| | 75 1,3,5-Trimethylbenzene | 105 | 9.561 | 9.561 | (0.940) | 491119 | 24.2114 | 24.21 |
| | 76 2-Chlorotoluene | 91 | 9.482 | 9.482 | (0.933) | 480870 | 24.0148 | 24.01 |
| | 77 4-Chlorotoluene | 91 | 9.576 | 9.576 | (0.942) | 558227 | 23.7577 | 23.75 |
| | 78 tert-Butylbenzene | 119 | 9.835 | 9.838 | (0.967) | 470002 | 24.0779 | 24.07 |
| | 79 1,2,4-Trimethylbenzene | 105 | 9.876 | 9.876 | (0.971) | 516577 | 24.7751 | 24.77 |
| | 81 sec-Butylbenzene | 105 | 10.022 | 10.022 | (0.986) | 613508 | 24.2311 | 24.23 |
| | 82 p-Isopropyltoluene | 119 | 10.146 | 10.146 | (0.998) | 516476 | 25.4959 | 25.49 |
| | 83 1,3-Dichlorobenzene | 146 | 10.116 | 10.116 | (0.995) | 326753 | 21.6150 | 21.61 |
| | 84 1,4-Dichlorobenzene | 146 | 10.191 | 10.191 | (1.002) | 354035 | 20.8446 | 20.84 |
| | 87 n-Butylbenzene | 91 | 10.491 | 10.491 | (1.032) | 464550 | 25.2005 | 25.20 |
| | 88 1,2-Dichlorobenzene | 146 | 10.506 | 10.506 | (1.033) | 328261 | 21.2315 | 21.23 |
| | 89 1,2-Dibromo-3-Chloropropane | 155 | 11.169 | 11.169 | (1.098) | 24274 | 18.6218 | 18.62 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 90 1,2,4-Trichlorobenzene | 180 | 11.859 | 11.855 (1.166) | 187072 | 21.2537 | 21.25 |
| 91 Hexachlorobutadiene | 225 | 11.998 | 11.998 (1.180) | 91307 | 23.1203 | 23.12 |

| | Compounds | QUANT SIG MASS | RT | EXP RT | REL RT | RESPONSE | CONCENTRATIONS ON-COLUMN ( ug/l) | FINAL ( ug/l) |
|---|---|---|---|---|---|---|---|---|
| | 92 Naphthalene | 128 | 12.065 | 12.065 | (1.187) | 462064 | 20.8603 | 20.86 |
| | 93 1,2,3-Trichlorobenzene | 180 | 12.268 | 12.267 | (1.206) | 191837 | 22.9568 | 22.95 |
| M | 94 1,2-Dichloroethylene (total) | 96 | | | | 418478 | 49.4936 | 49.49 |
| M | 95 Xylenes (total) | 106 | | | | 821694 | 67.4783 | 67.47 |
| | 135 1,4-Dioxane | 88 | 6.169 | 6.172 | (1.283) | 40192 | 363.903 | 363.90 |
| | 141 Cyclohexane | 56 | 4.774 | 4.781 | (0.993) | 280511 | 27.8502 | 27.85 |
| | 138 Freon TF | 101 | 2.322 | 2.333 | (0.483) | 167804 | 27.5769 | 27.57 |
| | 140 1,3-Butadiene | 54 | 1.389 | 1.404 | (0.289) | 200912 | 22.3817 | 22.38 |
| | 147 Methylcyclohexane | 55 | 5.947 | 5.947 | (1.072) | 413834 | 25.3745 | 25.37 |
| | 146 Methyl Acetate | 43 | 2.701 | 2.712 | (0.562) | 207861 | 22.5621 | 22.56 |
| | 148 Tert-Butyl alcohol | 59 | 2.956 | 2.967 | (0.615) | 427170 | 458.823 | 458.82 |
| | 149 Isopropyl Alcohol | 45 | 2.551 | 2.562 | (0.531) | 299574 | 448.529 | 448.52 |
| | 72 trans-1,4-Dichloro-2-butene | 53 | 9.377 | 9.377 | (1.146) | 34634 | 23.0304 | 23.03 |
| | 12 Isobutyl Alcohol | 43 | 5.284 | 5.291 | (1.099) | 471332 | 436.344 | 436.34 |
| | 13 Acetonitrile | 39 | 2.660 | 2.671 | (0.553) | 275193 | 237.380 | 237.38 |
| | 14 Allyl Chloride | 41 | 2.660 | 2.671 | (0.553) | 626943 | 23.2708 | 23.27 |
| | 25 Methacrylonitrile | 41 | 4.489 | 4.496 | (0.934) | 142649 | 23.8822 | 23.88 |
| | 40 Methyl Methacrylate | 41 | 6.157 | 6.157 | (1.281) | 139574 | 22.4322 | 22.43 |
| | 4 Propionitrile | 54 | 4.332 | 4.339 | (0.901) | 367480 | 223.250 | 223.24(a) |
| | 194 Acetaldehyde | 44 | 1.449 | 1.452 | (0.301) | 93323 | 56.6011 | 56.60(M) |
| | 131 Methyl Acrylate | 55 | 4.362 | 4.369 | (0.907) | 280625 | 23.7275 | 23.72 |
| | 200 Dimethyl Disulfide | 94 | 6.742 | 6.746 | (0.824) | 72837 | 13.6493 | 13.64 |
| | 23 Chloroprene | 53 | 2.146 | 2.157 | (0.446) | 82482 | 27.1289 | 27.12 |
| | 49 Ethyl Methacrylate | 69 | 7.293 | 7.293 | (1.314) | 216896 | 22.3540 | 22.35 |
| | 166 1,2,3-Trimethylbenzene | 105 | 10.232 | 10.232 | (1.006) | 509811 | 24.5817 | 24.58 |
| | 182 Epichlorohydrin | 57 | 6.630 | 6.637 | (1.195) | 2675 | 30.6976 | 30.69(M) |

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.




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Sample Info: HS23091194-01MSD;HS23091194-01MSD;3;;MSD
Purge Volume: 5.0
Column phase: DB624

Instrument: VOA9,i
Operator: PC
Column diameter: 0.18

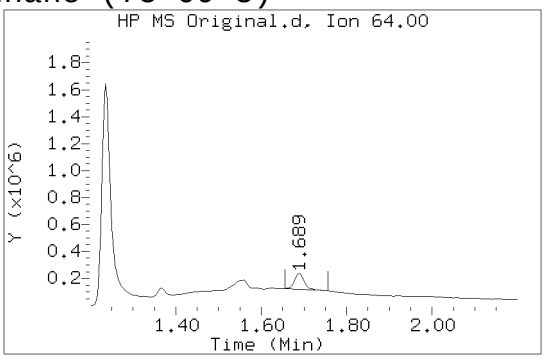
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Inj Date : 21-SEP-2023 15:34
InstruID : VOA9.i
LabSampID : HS23091194-01MSD

## Chloroethane (75-00-3)

Reason Code:

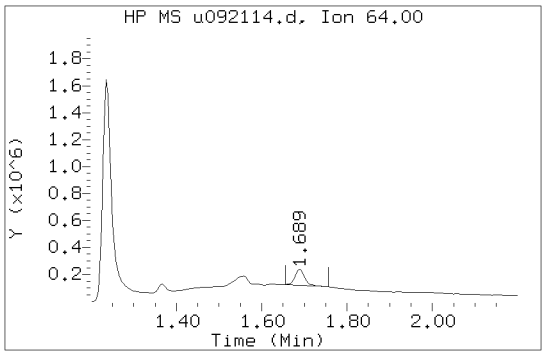
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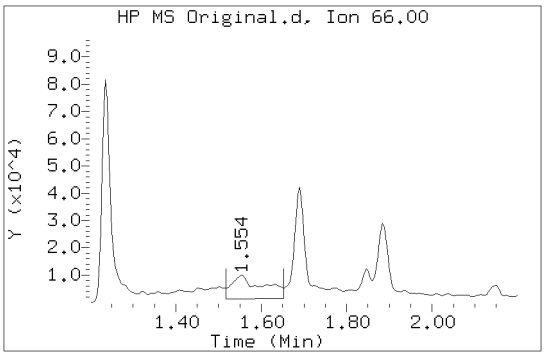

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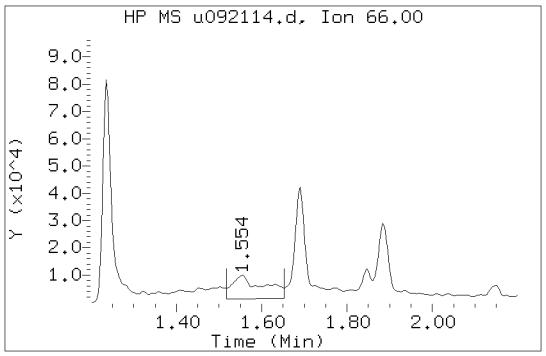

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21-Sep-2023
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AFTER

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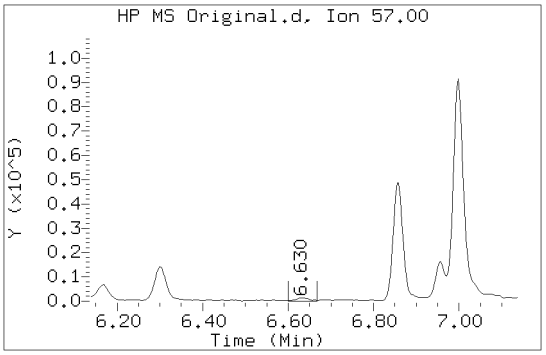



## Epichlorohydrin (106-89-8)

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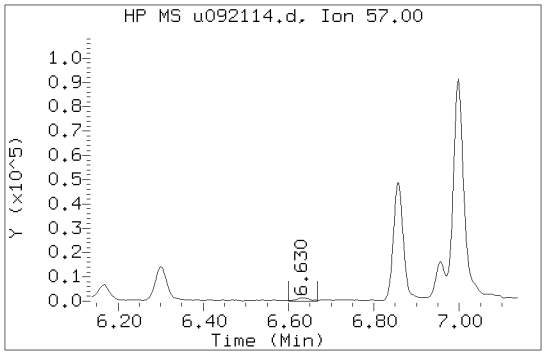
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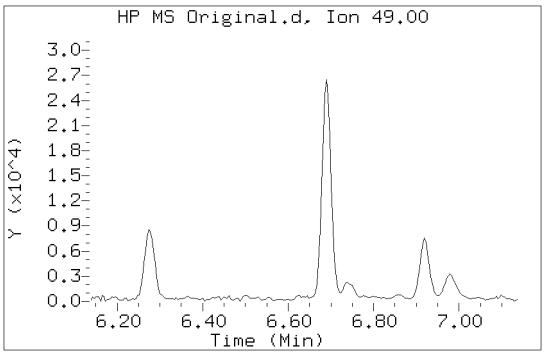

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21-Sep-2023
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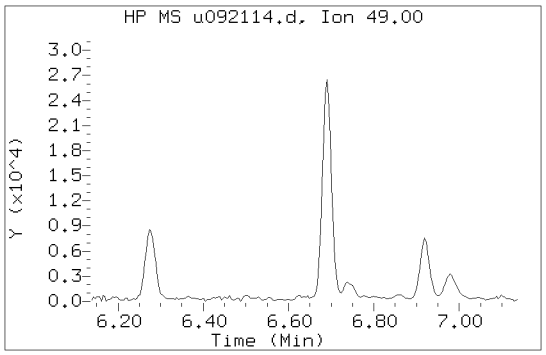

BEFORE

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AFTER

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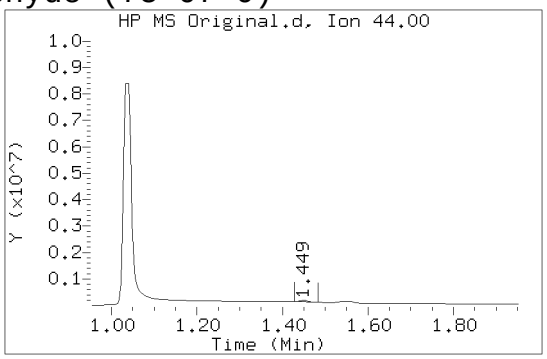


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LabSampID : HS23091194-01MSD

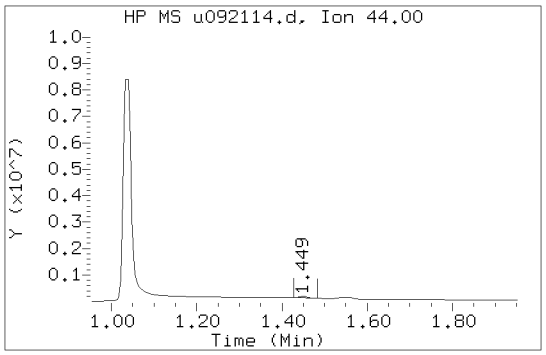
Acetaldehyde (75-07-0)

Reason Code:

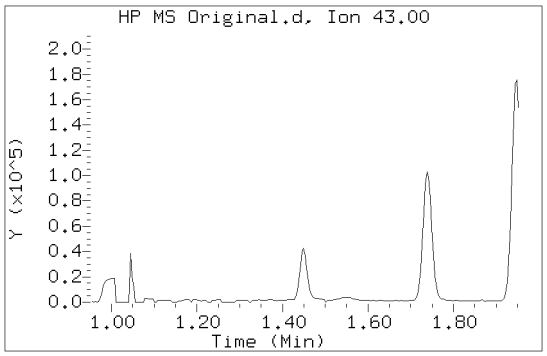
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44
AREA
93323
HEIGHT
72625
21-Sep-2023
22:45



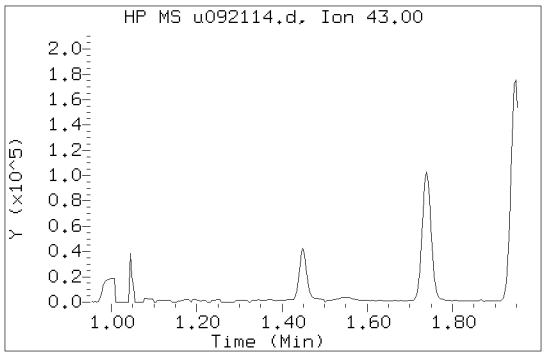

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AREA
93323
HEIGHT
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21-Sep-2023
22:45



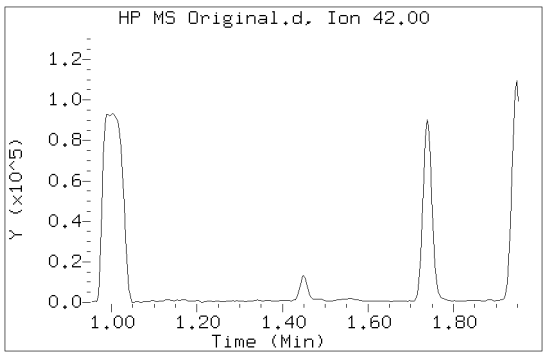

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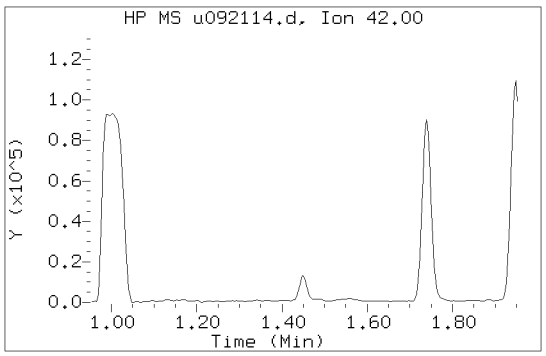

AFTER
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HEIGHT
0
21-Sep-2023
22:45




BEFORE
MASS
42
AREA
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HEIGHT
0
21-Sep-2023
22:45




AFTER
MASS
42
AREA
0
HEIGHT
0
21-Sep-2023
22:45



Data File: \\nahstws005\Target\chem\voa9.i\U230921.b\U092115.D  Page 1
Report Date: 21-Sep-2023 16:12

ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa9.i\U230921.b\U092115.D
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Inj Date  : 21-SEP-2023 15:56
Operator  : PC  Inst ID: VOA9.i
Smp Info  : CCV-END;CCV-END;2;;;
Misc Info : V9;WATER;0;1;
Comment   :
Method    : \\nahstws005\Target\chem\voa9.i\U230921.b\8260C.m
Meth Date : 21-Sep-2023 16:12 pcabasca  Quant Type: ISTD
Cal Date  : 14-SEP-2023 18:22  Cal File: U091408.D
Als bottle: 13  Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE  Compound Sublist: 8260_GB.sub
Target Version:  4.14
Processing Host: NAHSTWS005

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

| Name | Value | Description |
|---|---|---|
| DF | 1.000 | Dilution Factor |
| Uf | 5.000 | ng unit correction factor |
| Vo | 5.000 | sample purged |
| Cpnd Variable | | Local Compound Variable |

| | Compounds | QUANT SIG MASS | RT | EXP RT | REL RT | RESPONSE | AMOUNTS CAL-AMT ( ug/l) | ON-COL ( ug/l) |
|---|---|---|---|---|---|---|---|---|
| * 1 | Pentafluorobenzene | 168 | 4.815 | 4.815 | (1.000) | 689041 | 50.0000 | |
| 2 | Dichlorodifluoromethane | 85 | 1.164 | 1.164 | (0.242) | 305186 | 50.0000 | 40.64 |
| 3 | Chloromethane | 50 | 1.295 | 1.295 | (0.269) | 667422 | 50.0000 | 52.51 |
| 5 | Vinyl Chloride | 62 | 1.378 | 1.378 | (0.286) | 497244 | 50.0000 | 56.84 |
| 6 | Bromomethane | 94 | 1.617 | 1.617 | (0.336) | 250648 | 50.0000 | 58.66 |
| 7 | Chloroethane | 64 | 1.700 | 1.700 | (0.353) | 408350 | 50.0000 | 63.47 |
| 8 | Trichlorofluoromethane | 101 | 1.899 | 1.899 | (0.394) | 650602 | 50.0000 | 57.97 |
| 9 | Acrolein | 56 | 2.266 | 2.266 | (0.471) | 55976 | 100.000 | 94.67 |
| 10 | Acetone | 43 | 2.408 | 2.408 | (0.500) | 387967 | 100.000 | 111.24 |
| 11 | 1,1-Dichloroethene | 96 | 2.333 | 2.333 | (0.485) | 377983 | 50.0000 | 55.42 |
| 15 | Iodomethane | 142 | 2.468 | 2.468 | (0.513) | 491580 | 100.000 | 120.71 |
| 16 | Acrylonitrile | 53 | 3.064 | 3.064 | (0.636) | 465777 | 100.000 | 115.88 |
| 17 | Methylene Chloride | 84 | 2.795 | 2.795 | (0.580) | 484380 | 50.0000 | 55.77 |
| 18 | Methyl tert-butyl ether | 73 | 3.079 | 3.079 | (0.640) | 1145147 | 50.0000 | 59.13 |
| 19 | Carbon Disulfide | 76 | 2.521 | 2.521 | (0.524) | 2153452 | 100.000 | 116.89 |
| 20 | trans-1,2-Dichloroethene | 96 | 3.057 | 3.057 | (0.635) | 412649 | 50.0000 | 57.67 |
| 21 | Vinyl Acetate | 43 | 3.608 | 3.608 | (0.749) | 3058504 | 100.000 | 120.83 |
| 22 | 1,1-Dichloroethane | 63 | 3.514 | 3.514 | (0.730) | 839320 | 50.0000 | 58.49 |
| 24 | 2-Butanone | 43 | 4.268 | 4.268 | (0.886) | 473732 | 100.000 | 113.43 |
| 26 | 2,2-Dichloropropane | 77 | 4.182 | 4.182 | (0.868) | 517608 | 50.0000 | 59.57 |

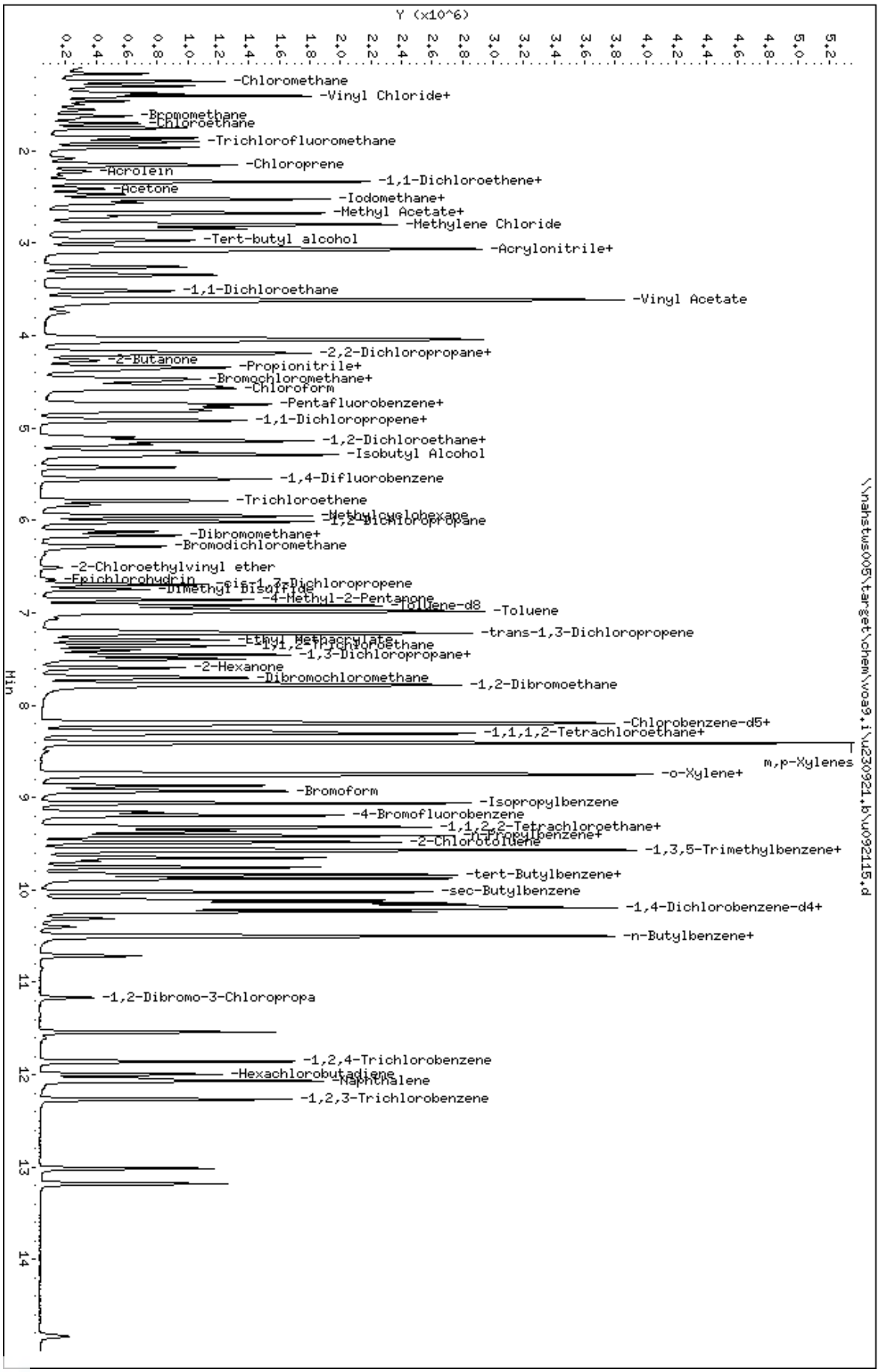
| | | | | | | |
|---|---|---|---|---|---|---|
| 27 cis-1,2-Dichloroethene | 96 | 4.197 | 4.197 (0.872) | 474891 | 50.0000 | 58.05 |
| 28 Chloroform | 83 | 4.571 | 4.571 (0.949) | 799084 | 50.0000 | 57.35 |

| | Compounds | QUANT SIG MASS | RT | EXP RT | REL RT | RESPONSE | AMOUNTS CAL-AMT ( ug/l) | ON-COL ( ug/l) |
|---|---|---|---|---|---|---|---|---|
| | 29 Bromochloromethane | 128 | 4.470 | 4.470 | (0.928) | 233690 | 50.0000 | 54.51 |
| $ | 30 Dibromofluoromethane | 113 | 4.748 | 4.748 | (0.986) | 352701 | 50.0000 | 56.07 |
| | 31 1,1,1-Trichloroethane | 97 | 4.740 | 4.740 | (0.984) | 545698 | 50.0000 | 57.67 |
| | 32 1,1-Dichloropropene | 75 | 4.920 | 4.920 | (0.886) | 452819 | 50.0000 | 52.30 |
| | 33 1,2-Dichloroethane | 62 | 5.175 | 5.175 | (0.932) | 541193 | 50.0000 | 51.33 |
| | 34 Carbon Tetrachloride | 117 | 4.909 | 4.909 | (0.884) | 288197 | 50.0000 | 37.20 |
| $ | 35 1,2-Dichloroethane-d4 | 65 | 5.096 | 5.096 | (1.058) | 381375 | 50.0000 | 53.71 |
| * | 36 1,4-Difluorobenzene | 114 | 5.554 | 5.554 | (1.000) | 1090610 | 50.0000 | |
| | 37 Benzene | 78 | 5.137 | 5.137 | (0.925) | 1434189 | 50.0000 | 52.35 |
| | 38 Trichloroethene | 130 | 5.786 | 5.786 | (1.042) | 377401 | 50.0000 | 47.36 |
| | 39 Bromodichloromethane | 83 | 6.277 | 6.277 | (1.130) | 448900 | 50.0000 | 50.52 |
| | 41 2-Chloroethylvinyl ether | 63 | 6.562 | 6.562 | (1.182) | 1504 | 100.000 | 38.51 |
| | 42 1,2-Dichloropropane | 63 | 6.011 | 6.011 | (1.082) | 397713 | 50.0000 | 54.98 |
| | 44 Dibromomethane | 93 | 6.120 | 6.120 | (1.102) | 241460 | 50.0000 | 48.47 |
| | 45 4-Methyl-2-Pentanone | 43 | 6.858 | 6.858 | (0.838) | 833005 | 100.000 | 103.92 |
| | 46 cis-1,3-Dichloropropene | 75 | 6.693 | 6.693 | (1.205) | 518742 | 50.0000 | 47.25 |
| * | 47 Chlorobenzene-d5 | 117 | 8.185 | 8.185 | (1.000) | 1079291 | 50.0000 | |
| $ | 48 Toluene-d8 | 98 | 6.922 | 6.922 | (0.846) | 1261182 | 50.0000 | 53.00 |
| | 50 Toluene | 91 | 6.982 | 6.982 | (0.853) | 1576233 | 50.0000 | 54.38 |
| | 51 trans-1,3-Dichloropropene | 75 | 7.195 | 7.195 | (1.296) | 426462 | 50.0000 | 47.50 |
| | 52 2-Hexanone | 43 | 7.593 | 7.593 | (0.928) | 553233 | 100.000 | 113.06 |
| | 53 1,1,2-Trichloroethane | 83 | 7.357 | 7.357 | (0.899) | 299360 | 50.0000 | 47.37 |
| | 54 1,3-Dichloropropane | 76 | 7.499 | 7.499 | (0.916) | 641040 | 50.0000 | 50.43 |
| | 55 Dibromochloromethane | 129 | 7.690 | 7.690 | (0.940) | 367529 | 50.0000 | 48.86 |
| | 56 Tetrachloroethene | 164 | 7.458 | 7.458 | (0.911) | 321396 | 50.0000 | 47.59 |
| | 57 1,2-Dibromoethane | 107 | 7.784 | 7.784 | (0.951) | 376392 | 50.0000 | 49.55 |
| | 58 1-Chlorohexane | 55 | 8.196 | 8.196 | (1.476) | 363269 | 50.0000 | 55.13 |
| | 59 Chlorobenzene | 112 | 8.208 | 8.208 | (1.003) | 1064003 | 50.0000 | 49.63 |
| | 60 1,1,1,2-Tetrachloroethane | 131 | 8.283 | 8.283 | (1.012) | 350977 | 50.0000 | 48.71 |
| | 61 Ethylbenzene | 106 | 8.305 | 8.305 | (1.015) | 520630 | 50.0000 | 54.24 |
| | 62 m,p-Xylenes | 106 | 8.406 | 8.406 | (1.027) | 1354193 | 100.000 | 112.20 |
| | 63 o-Xylene | 106 | 8.747 | 8.747 | (1.069) | 658201 | 50.0000 | 52.47 |
| | 64 Styrene | 104 | 8.762 | 8.762 | (1.071) | 1053911 | 50.0000 | 54.72 |
| | 66 Bromoform | 173 | 8.916 | 8.916 | (1.089) | 234025 | 50.0000 | 41.83 |
| | 67 Isopropylbenzene | 105 | 9.062 | 9.062 | (1.107) | 1580839 | 50.0000 | 52.34 |
| | 68 1,1,2,2-Tetrachloroethane | 83 | 9.328 | 9.328 | (0.917) | 549686 | 50.0000 | 47.37 |
| $ | 69 4-Bromofluorobenzene | 95 | 9.194 | 9.194 | (1.123) | 550888 | 50.0000 | 52.71 |
| * | 70 1,4-Dichlorobenzene-d4 | 152 | 10.168 | 10.168 | (1.000) | 597263 | 50.0000 | |
| | 71 1,2,3-Trichloropropane | 75 | 9.362 | 9.362 | (0.921) | 490533 | 50.0000 | 49.60 |
| | 73 n-Propylbenzene | 91 | 9.411 | 9.411 | (0.926) | 1808140 | 50.0000 | 48.97 |
| | 74 Bromobenzene | 156 | 9.317 | 9.317 | (0.916) | 454859 | 50.0000 | 47.91 |
| | 75 1,3,5-Trimethylbenzene | 105 | 9.561 | 9.561 | (0.940) | 1248968 | 50.0000 | 55.59 |
| | 76 2-Chlorotoluene | 91 | 9.482 | 9.482 | (0.933) | 1143804 | 50.0000 | 51.57 |
| | 77 4-Chlorotoluene | 91 | 9.576 | 9.576 | (0.942) | 1378806 | 50.0000 | 52.98 |
| | 78 tert-Butylbenzene | 119 | 9.838 | 9.838 | (0.968) | 1160737 | 50.0000 | 53.69 |
| | 79 1,2,4-Trimethylbenzene | 105 | 9.876 | 9.876 | (0.971) | 1327229 | 50.0000 | 57.47 |
| | 81 sec-Butylbenzene | 105 | 10.022 | 10.022 | (0.986) | 1548636 | 50.0000 | 51.82 |
| | 82 p-Isopropyltoluene | 119 | 10.146 | 10.146 | (0.998) | 1320689 | 50.0000 | 55.00 |
| | 83 1,3-Dichlorobenzene | 146 | 10.116 | 10.116 | (0.995) | 814950 | 50.0000 | 48.67 |
| | 84 1,4-Dichlorobenzene | 146 | 10.191 | 10.191 | (1.002) | 908661 | 50.0000 | 48.30 |
| | 87 n-Butylbenzene | 91 | 10.491 | 10.491 | (1.032) | 1207107 | 50.0000 | 54.83 |
| | 88 1,2-Dichlorobenzene | 146 | 10.506 | 10.506 | (1.033) | 850721 | 50.0000 | 49.68 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 89 | 1,2-Dibromo-3-Chloropropane | 155 | 11.169 | 11.169 (1.098) | 62087 | 50.0000 | 43.00 |
| 90 | 1,2,4-Trichlorobenzene | 180 | 11.855 | 11.855 (1.166) | 483500 | 50.0000 | 49.59 |

Data File: \\nahstws005\Target\chem\voa9.i\U230921.b\U092115.D Page 3
Report Date: 21-Sep-2023 16:12

| | Compounds | QUANT SIG MASS | RT | EXP RT | REL RT | RESPONSE | AMOUNTS CAL-AMT ( ug/l) | ON-COL ( ug/l) |
|---|---|---|---|---|---|---|---|---|
| | 91 Hexachlorobutadiene | 225 | 11.998 | 11.998 | (1.180) | 203701 | 50.0000 | 46.57 |
| | 92 Naphthalene | 128 | 12.065 | 12.065 | (1.187) | 1268170 | 50.0000 | 47.65 |
| | 93 1,2,3-Trichlorobenzene | 180 | 12.267 | 12.267 | (1.206) | 478694 | 50.0000 | 51.72 |
| M | 94 1,2-Dichloroethylene (total) | 96 | | | | 887540 | 100.000 | 115.75 |
| M | 95 Xylenes (total) | 106 | | | | 2012394 | 150.000 | 168.58 |
| | 135 1,4-Dioxane | 88 | 6.172 | 6.172 | (1.282) | 93888 | 1000.00 | 937.40 |
| | 141 Cyclohexane | 56 | 4.781 | 4.781 | (0.993) | 585124 | 50.0000 | 61.73 |
| | 138 Freon TF | 101 | 2.333 | 2.333 | (0.485) | 347929 | 50.0000 | 60.56 |
| | 140 1,3-Butadiene | 54 | 1.404 | 1.404 | (0.292) | 460739 | 50.0000 | 56.59 |
| | 147 Methylcyclohexane | 55 | 5.947 | 5.947 | (1.071) | 881418 | 50.0000 | 55.13 |
| | 146 Methyl Acetate | 43 | 2.712 | 2.712 | (0.563) | 483830 | 50.0000 | 57.91 |
| | 148 Tert-Butyl alcohol | 59 | 2.967 | 2.967 | (0.616) | 962377 | 1000.00 | 1139.88 |
| | 149 Isopropyl Alcohol | 45 | 2.562 | 2.562 | (0.532) | 714176 | 1000.00 | 1179.13 |
| | 72 trans-1,4-Dichloro-2-butene | 53 | 9.377 | 9.377 | (1.146) | 84106 | 50.0000 | 50.95 |
| | 12 Isobutyl Alcohol | 43 | 5.291 | 5.291 | (1.099) | 1131983 | 1000.00 | 1094.10 |
| | 13 Acetonitrile | 39 | 2.671 | 2.671 | (0.555) | 618736 | 500.000 | 588.54 |
| | 14 Allyl Chloride | 41 | 2.671 | 2.671 | (0.555) | 1407626 | 50.0000 | 57.61 |
| | 25 Methacrylonitrile | 41 | 4.496 | 4.496 | (0.934) | 336847 | 50.0000 | 62.18 |
| | 40 Methyl Methacrylate | 41 | 6.157 | 6.157 | (1.279) | 352252 | 50.0000 | 62.42 |
| | 4 Propionitrile | 54 | 4.339 | 4.339 | (0.901) | 840186 | 500.000 | 562.86 |
| | 131 Methyl Acrylate | 55 | 4.369 | 4.369 | (0.907) | 664725 | 50.0000 | 61.97 |
| | 200 Dimethyl Disulfide | 94 | 6.746 | 6.746 | (0.824) | 310770 | 50.0000 | 37.60 |
| | 23 Chloroprene | 53 | 2.157 | 2.157 | (0.448) | 179246 | 50.0000 | 65.01 |
| | 49 Ethyl Methacrylate | 69 | 7.293 | 7.293 | (1.313) | 538410 | 50.0000 | 56.60 |
| | 166 1,2,3-Trimethylbenzene | 105 | 10.232 | 10.232 | (1.006) | 1348656 | 50.0000 | 58.71 |
| | 182 Epichlorohydrin | 57 | 6.637 | 6.637 | (1.195) | 12329 | 200.000 | 144.33 |




Data File: \\nahstus005\target\chem\voa9,i\u230921,b\u092115,d
Date : 21-SEP-2023 15:56
Client ID: CCV-END
Sample Info: CCV-END,CCV-END,2,,,
Purge Volume: 5.0
Column phase: DB624

Instrument: VOA9,i
Operator: PC
Column diameter: 0.18

Data File : \\nahstws005\target\chem\voa9.i\u230921.b\u092115.d
Inj Date  : 21-SEP-2023 15:56
InstruID  : VOA9.i
LabSampID : CCV-END

NO MANUAL INTEGRATIONS

# HS23091194 Wetchem 9056_W

ALS WO# HS23091194

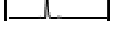
Sequence: 092923
Last Update Operator: alshs.nouser

| CD | Name | Comment | Type | Position | Dilution | Level | Instrument Method |
|---|---|---|---|---|---|---|---|
|  | STD1 | | Calibratio | RA1 | 1.00 | 1 | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | STD2 | | Calibratio | RA2 | 1.00 | 2 | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | STD3 | | Calibratio | RA3 | 1.00 | 3 | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | STD4 | | Calibratio | RA4 | 1.00 | 4 | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | STD5 | | Calibratio | RA5 | 1.00 | 5 | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | STD6 | | Calibratio | RA6 | 1.00 | 6 | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | ICV | | Unknown | RA7 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | ICB | | Unknown | RA8 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | CCV | | Unknown | R1 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | CCB | | Unknown | R6 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | MBLK | REP | Unknown | R5 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | LCS | REP | Unknown | R2 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | HS23091774-06DF20 | REP | Unknown | RA1 | 20.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | HS23091774-06MSDF20 | REP | Unknown | RA2 | 20.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | HS23091774-06MSDDF | REP | Unknown | RA3 | 20.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | HS23091774-07DF20 | REP | Unknown | RA4 | 20.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
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|  | HS23091774-09DF50 | REP | Unknown | RA6 | 50.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
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|  | HS23091753-01DF400 | REP | Unknown | RB1 | 400.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | HS23091768-01DF20 | REP | Unknown | RB2 | 20.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | HS23091768-01DF400 | REP | Unknown | RB3 | 400.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
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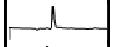
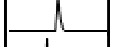
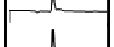
Sequence: 092923
Last Update Operator: alshs.nouser

| CD | Name | Comment | Type | Position | Dilution | Level | Instrument Method |
|---|---|---|---|---|---|---|---|
|  | HS23091613-05 | REP | Unknown | RB8 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
| | HS23091613-06 | REP | Unknown | RC1 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | CCV | | Unknown | R1 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | CCB | | Unknown | R4 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | HS23091613-07 | REP | Unknown | RC2 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | HS23091613-08 | REP | Unknown | RC3 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | HS23091613-08MS | REP | Unknown | RC4 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | HS23091613-08MSD | REP | Unknown | RC5 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | HS23091613-09 | REP | Unknown | RC6 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | HS23091613-10 | REP | Unknown | RC7 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | HS23091613-11 | REP | Unknown | RC8 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | HS23091613-12 | REP | Unknown | RD1 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | HS23091613-05DF20 | REP | Unknown | RD2 | 20.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | HS23091613-06DF20 | REP | Unknown | RD3 | 20.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | CCV1 | | Unknown | R3 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | CCB | | Unknown | R8 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | MBLK | | Unknown | R5 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | LCS | | Unknown | R2 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | HS23091613-07DF20 | REP | Unknown | RD4 | 20.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | HS23091613-08DF20 | REP | Unknown | RD5 | 20.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | HS23091613-09DF20 | REP | Unknown | RD6 | 20.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | HS23091613-10DF20 | REP | Unknown | RD7 | 20.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | HS23091613-11DF20 | REP | Unknown | RD8 | 20.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | HS23091613-12DF20 | REP | Unknown | RE1 | 20.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | CCV | | Unknown | R1 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | CCB | | Unknown | R4 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | CCV1 | | Unknown | R3 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | CCB | | Unknown | R8 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | MBLK | 9056-W | Unknown | R5 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | LCS | | Unknown | R2 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |

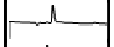
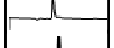
Sequence: 092923
Last Update Operator: alshs.nouser

| CD | Name | Comment | Type | Position | Dilution | Level | Instrument Method |
|---|---|---|---|---|---|---|---|
|  | HS23091250-01 | | Unknown | RE2 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | HS23091250-01MS | | Unknown | RE3 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | HS23091250-01MSD | | Unknown | RE4 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | HS23091250-01DF10 | | Unknown | RE5 | 10.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | HS23091250-02 | | Unknown | RE6 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | HS23091250-02DF10 | | Unknown | RE7 | 10.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | CCV | | Unknown | R1 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | CCB | | Unknown | R4 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | HS23091250-03 | | Unknown | RE8 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | HS23091250-03DF10 | | Unknown | GA1 | 10.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | HS23091250-04 | | Unknown | GA2 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | HS23091250-04DF10 | | Unknown | GA3 | 10.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | HS23091250-05 | | Unknown | GA4 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | HS23091250-05DF10 | | Unknown | GA5 | 10.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | HS23091250-06 | | Unknown | GA6 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | HS23091250-06DF10 | | Unknown | GA7 | 10.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | HS23091250-07 | | Unknown | GA8 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | HS23091250-07DF10 | | Unknown | GB1 | 10.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | CCV1 | | Unknown | R3 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | CCB | | Unknown | R8 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | HS23091621-08DF50 | | Unknown | GB2 | 50.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | HS23091758-03DF500 | | Unknown | GB3 | 500.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | HS23091194-01 | | Unknown | GB4 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | HS23091194-01DF20 | | Unknown | GB5 | 20.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | MBLK-201112 | | Unknown | R5 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | LCS-201112 | | Unknown | R2 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | HS23090982-01 | | Unknown | GB6 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | HS23090982-01MS | | Unknown | GB7 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | HS23090982-01MSD | | Unknown | GB8 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | HS23090982-02 | | Unknown | GC1 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |

Sequence: 092923
Last Update Operator: alshs.nouser

| CD | Name | Comment | Type | Position | Dilution | Level | Instrument Method |
|---|---|---|---|---|---|---|---|
|  | CCV | | Unknown | R1 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | CCB | | Unknown | R4 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | HS23090982-03DF2 | | Unknown | GC2 | 2.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | HS23090982-04DF2 | | Unknown | GC3 | 2.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | HS23090982-05 | | Unknown | GC4 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | HS23091013-01 | | Unknown | GC5 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | HS23090950-20 | | Unknown | GC6 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | HS23090950-22 | | Unknown | GC7 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | HS23090950-23 | | Unknown | GC8 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | HS23090950-24 | | Unknown | GD1 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | HS23090950-25 | | Unknown | GD2 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | HS23090950-26 | | Unknown | GD3 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | CCV1 | | Unknown | R3 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | CCB | | Unknown | R7 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | HS23090950-27 | | Unknown | GD4 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | HS23090950-28 | | Unknown | GD5 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | HS23090950-29 | | Unknown | GD6 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | HS23090950-30 | | Unknown | GD7 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | HS23090950-31 | | Unknown | GD8 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | HS23090950-32 | | Unknown | GE1 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | HS23090950-33 | | Unknown | GE2 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | CCV | | Unknown | R1 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | CCB | | Unknown | R4 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | MBLK-201144 | | Unknown | R5 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | LCS-201144 | | Unknown | R2 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | HS23090966-01 | | Unknown | GE3 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | HS23090966-01MS | | Unknown | GE4 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | HS23090966-01MSD | | Unknown | GE5 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | HS23090966-02 | | Unknown | GE6 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | HS23090966-03 | | Unknown | GE7 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |

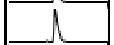
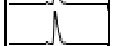
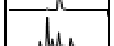
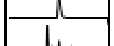
Sequence: 092923
Last Update Operator: alshs.nouser

| CD | Name | Comment | Type | Position | Dilution | Level | Instrument Method |
|---|---|---|---|---|---|---|---|
|  | HS23090966-04DF2 | | Unknown | GE8 | 2.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | HS23090966-05 | | Unknown | BA1 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | HS23090966-06 | | Unknown | BA2 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | CCV1 | | Unknown | R3 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | CCB | | Unknown | R8 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | HS23090966-07 | | Unknown | BA3 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | HS23090966-08DF2 | | Unknown | BA4 | 2.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | HS23090966-09DF2 | | Unknown | BA5 | 2.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | HS23090966-10DF2 | | Unknown | BA6 | 2.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | HS23091118-01 | | Unknown | BA7 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | HS23091118-02 | | Unknown | BA8 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | HS23091118-03 | | Unknown | BB1 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | HS23091118-04 | | Unknown | BB2 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | HS23091118-05 | | Unknown | BB3 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | HS23091118-06 | | Unknown | BB4 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | CCV | | Unknown | R1 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | CCB | | Unknown | R4 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | HS23091649-01 | | Unknown | BB5 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | HS23091649-02 | | Unknown | BB6 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | CCV1 | | Unknown | R3 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | CCB | | Unknown | R7 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | CCV | | Unknown | R1 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | CCB | | Unknown | R6 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | HS23090950-33DF10 | | Unknown | GE2 | 10.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | CCV1 | | Unknown | R3 | 10.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | CCB | | Unknown | R7 | 10.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |

Sequence: 092923
Last Update Operator: alshs.nouser

| Processing Method | CD | Name | me | Status | Inject Time |
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| Anions Processing Method ISO |  | STD1 | 5.0 | Finished | 9/8/2023 6:51:59 AM -05:00 |
| Anions Processing Method ISO |  | STD2 | 5.0 | Finished | 9/8/2023 6:57:46 AM -05:00 |
| Anions Processing Method ISO |  | STD3 | 5.0 | Finished | 9/8/2023 7:03:33 AM -05:00 |
| Anions Processing Method ISO |  | STD4 | 5.0 | Finished | 9/8/2023 7:09:20 AM -05:00 |
| Anions Processing Method ISO |  | STD5 | 5.0 | Finished | 9/8/2023 7:15:07 AM -05:00 |
| Anions Processing Method ISO |  | STD6 | 5.0 | Finished | 9/8/2023 7:20:54 AM -05:00 |
| Anions Processing Method ISO |  | ICV | 5.0 | Finished | 9/8/2023 7:26:41 AM -05:00 |
| Anions Processing Method ISO |  | ICB | 5.0 | Finished | 9/8/2023 7:44:36 AM -05:00 |
| Anions Processing Method ISO |  | CCV | 5.0 | Finished | 9/29/2023 9:56:07 AM -05:00 |
| Anions Processing Method ISO |  | CCB | 5.0 | Finished | 9/29/2023 10:01:53 AM -05:00 |
| Anions Processing Method ISO |  | MBLK | 5.0 | Finished | 9/29/2023 10:13:25 AM -05:00 |
| Anions Processing Method ISO |  | LCS | 5.0 | Finished | 9/29/2023 10:24:57 AM -05:00 |
| Anions Processing Method ISO |  | HS23091774-06DF20 | 5.0 | Finished | 9/29/2023 10:30:54 AM -05:00 |
| Anions Processing Method ISO |  | HS23091774-06MSDF20 | 5.0 | Finished | 9/29/2023 10:36:40 AM -05:00 |
| Anions Processing Method ISO |  | HS23091774-06MSDDF | 5.0 | Finished | 9/29/2023 10:42:26 AM -05:00 |
| Anions Processing Method ISO |  | HS23091774-07DF20 | 5.0 | Finished | 9/29/2023 10:48:11 AM -05:00 |
| Anions Processing Method ISO |  | HS23091774-08DF50 | 5.0 | Finished | 9/29/2023 10:53:57 AM -05:00 |
| Anions Processing Method ISO |  | HS23091774-09DF50 | 5.0 | Finished | 9/29/2023 10:59:43 AM -05:00 |
| Anions Processing Method ISO |  | HS23091774-10DF50 | 5.0 | Finished | 9/29/2023 11:05:29 AM -05:00 |
| Anions Processing Method ISO |  | CCV1 | 5.0 | Finished | 9/29/2023 11:22:47 AM -05:00 |
| Anions Processing Method ISO |  | CCB | 5.0 | Finished | 9/29/2023 11:34:19 AM -05:00 |
| Anions Processing Method ISO |  | HS23091753-01DF20 | 5.0 | Finished | 9/29/2023 11:40:05 AM -05:00 |
| Anions Processing Method ISO |  | HS23091753-01DF400 | 5.0 | Finished | 9/29/2023 11:45:50 AM -05:00 |
| Anions Processing Method ISO |  | HS23091768-01DF20 | 5.0 | Finished | 9/29/2023 11:51:47 AM -05:00 |
| Anions Processing Method ISO |  | HS23091768-01DF400 | 5.0 | Finished | 9/29/2023 11:57:44 AM -05:00 |
| Anions Processing Method ISO |  | HS23091768-02DF20 | 5.0 | Finished | 9/29/2023 12:03:30 PM -05:00 |
| Anions Processing Method ISO |  | HS23091768-02DF400 | 5.0 | Finished | 9/29/2023 12:09:16 PM -05:00 |
| Anions Processing Method ISO |  | HS23091768-03DF20 | 5.0 | Finished | 9/29/2023 12:15:01 PM -05:00 |
| Anions Processing Method ISO |  | HS23091768-03DF400 | 5.0 | Finished | 9/29/2023 12:20:47 PM -05:00 |

Sequence: 092923
Last Update Operator: alshs.nouser

| Processing Method | CD | Name | me | Status | Inject Time |
|---|---|---|---|---|---|
| Anions Processing Method ISO |  | HS23091613-05 | 5.0 | Finished | 9/29/2023 12:26:33 PM -05:00 |
| Anions Processing Method ISO | | HS23091613-06 | 5.0 | Finished | 9/29/2023 12:32:18 PM -05:00 |
| Anions Processing Method ISO |  | CCV | 5.0 | Finished | 9/29/2023 12:55:21 PM -05:00 |
| Anions Processing Method ISO |  | CCB | 5.0 | Finished | 9/29/2023 1:06:52 PM -05:00 |
| Anions Processing Method ISO |  | HS23091613-07 | 5.0 | Finished | 9/29/2023 1:12:38 PM -05:00 |
| Anions Processing Method ISO |  | HS23091613-08 | 5.0 | Finished | 9/29/2023 1:18:35 PM -05:00 |
| Anions Processing Method ISO |  | HS23091613-08MS | 5.0 | Finished | 9/29/2023 1:24:21 PM -05:00 |
| Anions Processing Method ISO |  | HS23091613-08MSD | 5.0 | Finished | 9/29/2023 1:30:06 PM -05:00 |
| Anions Processing Method ISO |  | HS23091613-09 | 5.0 | Finished | 9/29/2023 1:35:52 PM -05:00 |
| Anions Processing Method ISO |  | HS23091613-10 | 5.0 | Finished | 9/29/2023 1:41:38 PM -05:00 |
| Anions Processing Method ISO |  | HS23091613-11 | 5.0 | Finished | 9/29/2023 1:47:23 PM -05:00 |
| Anions Processing Method ISO |  | HS23091613-12 | 5.0 | Finished | 9/29/2023 1:53:09 PM -05:00 |
| Anions Processing Method ISO |  | HS23091613-05DF20 | 5.0 | Finished | 9/29/2023 1:58:54 PM -05:00 |
| Anions Processing Method ISO |  | HS23091613-06DF20 | 5.0 | Finished | 9/29/2023 2:04:40 PM -05:00 |
| Anions Processing Method ISO |  | CCV1 | 5.0 | Finished | 9/29/2023 2:28:05 PM -05:00 |
| Anions Processing Method ISO |  | CCB | 5.0 | Finished | 9/29/2023 2:39:36 PM -05:00 |
| Anions Processing Method ISO |  | MBLK | 5.0 | Finished | 9/29/2023 2:45:22 PM -05:00 |
| Anions Processing Method ISO |  | LCS | 5.0 | Finished | 9/29/2023 2:51:07 PM -05:00 |
| Anions Processing Method ISO |  | HS23091613-07DF20 | 5.0 | Finished | 9/29/2023 2:56:53 PM -05:00 |
| Anions Processing Method ISO |  | HS23091613-08DF20 | 5.0 | Finished | 9/29/2023 3:02:39 PM -05:00 |
| Anions Processing Method ISO |  | HS23091613-09DF20 | 5.0 | Finished | 9/29/2023 3:08:24 PM -05:00 |
| Anions Processing Method ISO |  | HS23091613-10DF20 | 5.0 | Finished | 9/29/2023 3:14:10 PM -05:00 |
| Anions Processing Method ISO |  | HS23091613-11DF20 | 5.0 | Finished | 9/29/2023 3:19:56 PM -05:00 |
| Anions Processing Method ISO |  | HS23091613-12DF20 | 5.0 | Finished | 9/29/2023 3:25:42 PM -05:00 |
| Anions Processing Method ISO |  | CCV | 5.0 | Finished | 9/29/2023 4:06:24 PM -05:00 |
| Anions Processing Method ISO |  | CCB | 5.0 | Finished | 9/29/2023 4:17:55 PM -05:00 |
| Anions Processing Method ISO |  | CCV1 | 5.0 | Finished | 9/29/2023 6:14:38 PM -05:00 |
| Anions Processing Method ISO |  | CCB | 5.0 | Finished | 9/29/2023 6:26:10 PM -05:00 |
| Anions Processing Method ISO |  | MBLK | 5.0 | Finished | 9/29/2023 6:31:56 PM -05:00 |
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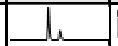
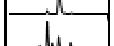
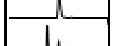
Sequence: 092923
Last Update Operator: alshs.nouser

| Processing Method | CD | Name | me | Status | Inject Time |
|---|---|---|---|---|---|
| Anions Processing Method ISO | | HS23091250-01 | 5.0 | Finished | 9/29/2023 6:49:13 PM -05:00 |
| Anions Processing Method ISO | | HS23091250-01MS | 5.0 | Finished | 9/29/2023 6:54:58 PM -05:00 |
| Anions Processing Method ISO | | HS23091250-01MSD | 5.0 | Finished | 9/29/2023 7:00:55 PM -05:00 |
| Anions Processing Method ISO | | HS23091250-01DF10 | 5.0 | Finished | 9/29/2023 7:06:41 PM -05:00 |
| Anions Processing Method ISO | | HS23091250-02 | 5.0 | Finished | 9/29/2023 7:12:27 PM -05:00 |
| Anions Processing Method ISO | | HS23091250-02DF10 | 5.0 | Finished | 9/29/2023 7:18:13 PM -05:00 |
| Anions Processing Method ISO | | CCV | 5.0 | Finished | 9/29/2023 7:35:53 PM -05:00 |
| Anions Processing Method ISO | | CCB | 5.0 | Finished | 9/29/2023 7:47:24 PM -05:00 |
| Anions Processing Method ISO | | HS23091250-03 | 5.0 | Finished | 9/29/2023 7:53:10 PM -05:00 |
| Anions Processing Method ISO | | HS23091250-03DF10 | 5.0 | Finished | 9/29/2023 7:59:07 PM -05:00 |
| Anions Processing Method ISO | | HS23091250-04 | 5.0 | Finished | 9/29/2023 8:04:53 PM -05:00 |
| Anions Processing Method ISO | | HS23091250-04DF10 | 5.0 | Finished | 9/29/2023 8:10:39 PM -05:00 |
| Anions Processing Method ISO | | HS23091250-05 | 5.0 | Finished | 9/29/2023 8:16:24 PM -05:00 |
| Anions Processing Method ISO | | HS23091250-05DF10 | 5.0 | Finished | 9/29/2023 8:22:10 PM -05:00 |
| Anions Processing Method ISO | | HS23091250-06 | 5.0 | Finished | 9/29/2023 8:27:56 PM -05:00 |
| Anions Processing Method ISO | | HS23091250-06DF10 | 5.0 | Finished | 9/29/2023 8:33:41 PM -05:00 |
| Anions Processing Method ISO | | HS23091250-07 | 5.0 | Finished | 9/29/2023 8:39:27 PM -05:00 |
| Anions Processing Method ISO | | HS23091250-07DF10 | 5.0 | Finished | 9/29/2023 8:45:13 PM -05:00 |
| Anions Processing Method ISO | | CCV1 | 5.0 | Finished | 9/29/2023 9:02:30 PM -05:00 |
| Anions Processing Method ISO | | CCB | 5.0 | Finished | 9/29/2023 9:14:02 PM -05:00 |
| Anions Processing Method ISO | | HS23091621-08DF50 | 5.0 | Finished | 9/29/2023 9:19:47 PM -05:00 |
| Anions Processing Method ISO | | HS23091758-03DF500 | 5.0 | Finished | 9/29/2023 9:25:33 PM -05:00 |
| Anions Processing Method ISO | | HS23091194-01 | 5.0 | Finished | 9/29/2023 9:31:19 PM -05:00 |
| Anions Processing Method ISO | | HS23091194-01DF20 | 5.0 | Finished | 9/29/2023 9:37:05 PM -05:00 |
| Anions Processing Method ISO | | MBLK-201112 | 5.0 | Finished | 9/29/2023 10:00:08 PM -05:00 |
| Anions Processing Method ISO | | LCS-201112 | 5.0 | Finished | 9/29/2023 10:11:39 PM -05:00 |
| Anions Processing Method ISO | | HS23090982-01 | 5.0 | Finished | 9/29/2023 10:17:25 PM -05:00 |
| Anions Processing Method ISO | | HS23090982-01MS | 5.0 | Finished | 9/29/2023 10:23:11 PM -05:00 |
| Anions Processing Method ISO | | HS23090982-01MSD | 5.0 | Finished | 9/29/2023 10:28:57 PM -05:00 |
| Anions Processing Method ISO | | HS23090982-02 | 5.0 | Finished | 9/29/2023 10:34:42 PM -05:00 |

Sequence: 092923
Last Update Operator: alshs.nouser

| Processing Method | CD | Name | me | Status | Inject Time |
|---|---|---|---|---|---|
| Anions Processing Method ISO |  | CCV | 5.0 | Finished | 9/29/2023 10:52:22 PM -05:00 |
| Anions Processing Method ISO |  | CCB | 5.0 | Finished | 9/29/2023 11:03:54 PM -05:00 |
| Anions Processing Method ISO |  | HS23090982-03DF2 | 5.0 | Finished | 9/29/2023 11:09:39 PM -05:00 |
| Anions Processing Method ISO |  | HS23090982-04DF2 | 5.0 | Finished | 9/29/2023 11:15:25 PM -05:00 |
| Anions Processing Method ISO |  | HS23090982-05 | 5.0 | Finished | 9/29/2023 11:21:11 PM -05:00 |
| Anions Processing Method ISO |  | HS23091013-01 | 5.0 | Finished | 9/29/2023 11:26:57 PM -05:00 |
| Anions Processing Method ISO |  | HS23090950-20 | 5.0 | Finished | 9/29/2023 11:32:43 PM -05:00 |
| Anions Processing Method ISO |  | HS23090950-22 | 5.0 | Finished | 9/29/2023 11:38:28 PM -05:00 |
| Anions Processing Method ISO |  | HS23090950-23 | 5.0 | Finished | 9/29/2023 11:44:14 PM -05:00 |
| Anions Processing Method ISO |  | HS23090950-24 | 5.0 | Finished | 9/29/2023 11:50:00 PM -05:00 |
| Anions Processing Method ISO |  | HS23090950-25 | 5.0 | Finished | 9/29/2023 11:55:46 PM -05:00 |
| Anions Processing Method ISO |  | HS23090950-26 | 5.0 | Finished | 9/30/2023 12:01:32 AM -05:00 |
| Anions Processing Method ISO |  | CCV1 | 5.0 | Finished | 9/30/2023 12:18:49 AM -05:00 |
| Anions Processing Method ISO |  | CCB | 5.0 | Finished | 9/30/2023 12:24:35 AM -05:00 |
| Anions Processing Method ISO |  | HS23090950-27 | 5.0 | Finished | 9/30/2023 12:36:07 AM -05:00 |
| Anions Processing Method ISO |  | HS23090950-28 | 5.0 | Finished | 9/30/2023 12:41:53 AM -05:00 |
| Anions Processing Method ISO |  | HS23090950-29 | 5.0 | Finished | 9/30/2023 12:47:38 AM -05:00 |
| Anions Processing Method ISO |  | HS23090950-30 | 5.0 | Finished | 9/30/2023 12:53:24 AM -05:00 |
| Anions Processing Method ISO |  | HS23090950-31 | 5.0 | Finished | 9/30/2023 12:59:10 AM -05:00 |
| Anions Processing Method ISO |  | HS23090950-32 | 5.0 | Finished | 9/30/2023 1:04:56 AM -05:00 |
| Anions Processing Method ISO |  | HS23090950-33 | 5.0 | Finished | 9/30/2023 1:10:42 AM -05:00 |
| Anions Processing Method ISO |  | CCV | 5.0 | Finished | 9/30/2023 1:27:59 AM -05:00 |
| Anions Processing Method ISO |  | CCB | 5.0 | Finished | 9/30/2023 1:39:31 AM -05:00 |
| Anions Processing Method ISO |  | MBLK-201144 | 5.0 | Finished | 9/30/2023 1:45:16 AM -05:00 |
| Anions Processing Method ISO |  | LCS-201144 | 5.0 | Finished | 9/30/2023 1:56:48 AM -05:00 |
| Anions Processing Method ISO |  | HS23090966-01 | 5.0 | Finished | 9/30/2023 2:02:34 AM -05:00 |
| Anions Processing Method ISO |  | HS23090966-01MS | 5.0 | Finished | 9/30/2023 2:08:20 AM -05:00 |
| Anions Processing Method ISO |  | HS23090966-01MSD | 5.0 | Finished | 9/30/2023 2:14:05 AM -05:00 |
| Anions Processing Method ISO |  | HS23090966-02 | 5.0 | Finished | 9/30/2023 2:19:51 AM -05:00 |
| Anions Processing Method ISO |  | HS23090966-03 | 5.0 | Finished | 9/30/2023 2:25:37 AM -05:00 |

Sequence: 092923
Last Update Operator: alshs.nouser

| Processing Method | CD | Name | me | Status | Inject Time |
|---|---|---|---|---|---|
| Anions Processing Method ISO |  | HS23090966-04DF2 | 5.0 | Finished | 9/30/2023 2:31:23 AM -05:00 |
| Anions Processing Method ISO |  | HS23090966-05 | 5.0 | Finished | 9/30/2023 2:37:20 AM -05:00 |
| Anions Processing Method ISO |  | HS23090966-06 | 5.0 | Finished | 9/30/2023 2:43:06 AM -05:00 |
| Anions Processing Method ISO |  | CCV1 | 5.0 | Finished | 9/30/2023 3:00:23 AM -05:00 |
| Anions Processing Method ISO |  | CCB | 5.0 | Finished | 9/30/2023 3:11:55 AM -05:00 |
| Anions Processing Method ISO |  | HS23090966-07 | 5.0 | Finished | 9/30/2023 3:17:40 AM -05:00 |
| Anions Processing Method ISO |  | HS23090966-08DF2 | 5.0 | Finished | 9/30/2023 3:23:37 AM -05:00 |
| Anions Processing Method ISO |  | HS23090966-09DF2 | 5.0 | Finished | 9/30/2023 3:29:23 AM -05:00 |
| Anions Processing Method ISO |  | HS23090966-10DF2 | 5.0 | Finished | 9/30/2023 3:35:09 AM -05:00 |
| Anions Processing Method ISO |  | HS23091118-01 | 5.0 | Finished | 9/30/2023 3:40:55 AM -05:00 |
| Anions Processing Method ISO |  | HS23091118-02 | 5.0 | Finished | 9/30/2023 3:46:41 AM -05:00 |
| Anions Processing Method ISO |  | HS23091118-03 | 5.0 | Finished | 9/30/2023 3:52:27 AM -05:00 |
| Anions Processing Method ISO |  | HS23091118-04 | 5.0 | Finished | 9/30/2023 3:58:13 AM -05:00 |
| Anions Processing Method ISO |  | HS23091118-05 | 5.0 | Finished | 9/30/2023 4:03:58 AM -05:00 |
| Anions Processing Method ISO |  | HS23091118-06 | 5.0 | Finished | 9/30/2023 4:09:44 AM -05:00 |
| Anions Processing Method ISO |  | CCV | 5.0 | Finished | 9/30/2023 4:27:13 AM -05:00 |
| Anions Processing Method ISO |  | CCB | 5.0 | Finished | 9/30/2023 4:38:45 AM -05:00 |
| Anions Processing Method ISO |  | HS23091649-01 | 5.0 | Finished | 9/30/2023 4:44:31 AM -05:00 |
| Anions Processing Method ISO |  | HS23091649-02 | 5.0 | Finished | 9/30/2023 4:50:16 AM -05:00 |
| Anions Processing Method ISO |  | CCV1 | 5.0 | Finished | 9/30/2023 5:13:20 AM -05:00 |
| Anions Processing Method ISO |  | CCB | 5.0 | Finished | 9/30/2023 5:47:55 AM -05:00 |
| Anions Processing Method ISO |  | CCV | 5.0 | Finished | 9/30/2023 6:52:16 AM -05:00 |
| Anions Processing Method ISO |  | CCB | 5.0 | Finished | 9/30/2023 6:58:02 AM -05:00 |
| Anions Processing Method ISO |  | HS23090950-33DF10 | 5.0 | Finished | 9/30/2023 7:09:34 AM -05:00 |
| Anions Processing Method ISO |  | CCV1 | 5.0 | Finished | 9/30/2023 7:21:05 AM -05:00 |
| Anions Processing Method ISO |  | CCB | 5.0 | Finished | 9/30/2023 7:26:51 AM -05:00 |

Sequence: 090823
Injection #6: STD6

Calibration

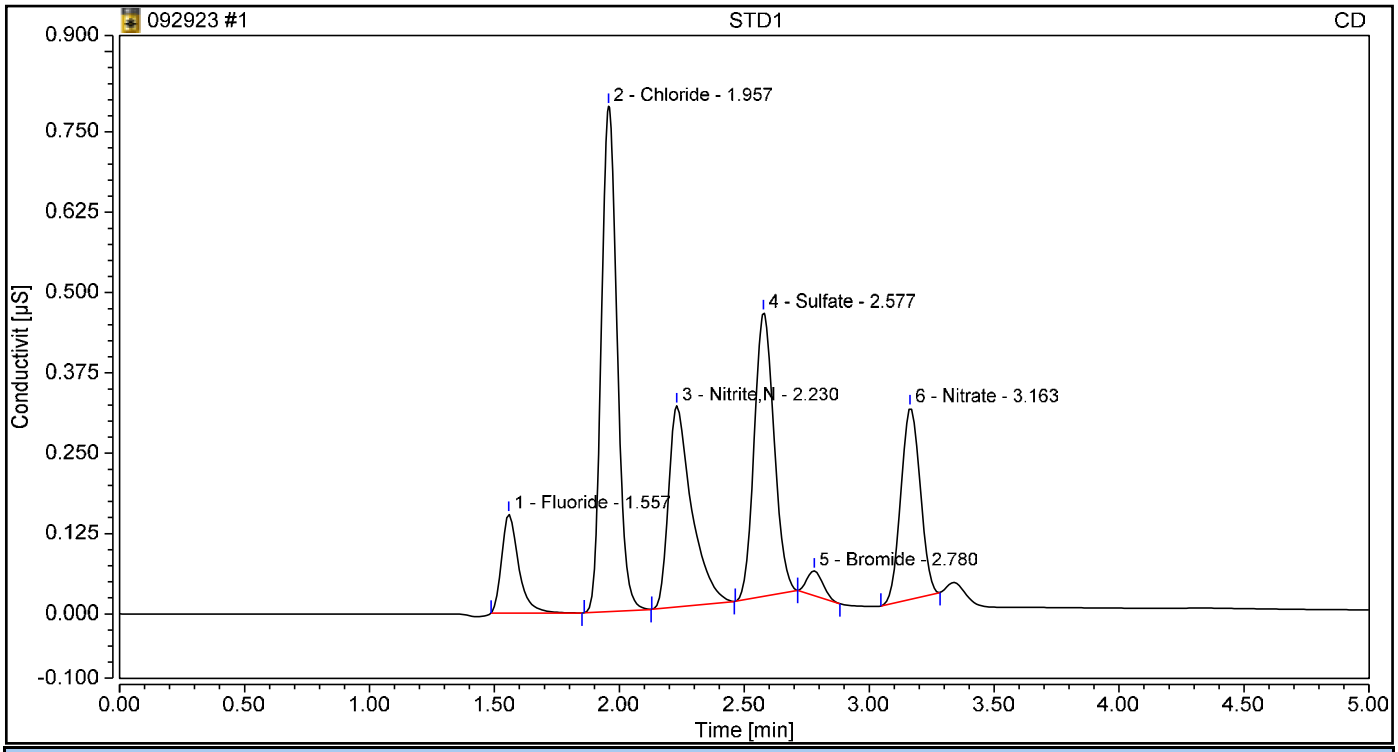
| Peak No. | Peak Name | Cal.Type | Eval.Type | Number of Points | Rel.Std.Dev. % | Coeff.of Determination | C0 (Offset) | C1 (Slope) | C2 (Curve) |
|---|---|---|---|---|---|---|---|---|---|
| 1 | Fluoride | Quad, WithOffset, 1/A | Area | 6 | 15.8030 | 0.99925 | -0.0156 | 0.2362 | -0.0006 |
| 2 | Chloride | Lin, WithOffset, 1/A | Area | 6 | 5.3728 | 0.99987 | -0.0255 | 0.1591 | 0.0000 |
| ***3*** | ***Nitrite,N*** | ***Quad, WithOffset, 1/A*** | ***Area*** | ***6*** | ***5.4682*** | ***0.99986*** | ***-0.0021*** | ***0.3518*** | ***-0.0040*** |
| 4 | Sulfate | Lin, WithOffset, 1/A | Area | 6 | 3.8857 | 0.99993 | -0.0152 | 0.1076 | 0.0000 |
| 5 | Bromide | Quad, WithOffset, 1/A | Area | 6 | 9.0057 | 0.99977 | -0.0018 | 0.0437 | 0.0004 |
| 6 | Nitrate | Lin, WithOffset, 1/A | Area | 6 | 7.8483 | 0.99970 | -0.0059 | 0.3375 | 0.0000 |
| 7 | Chlorate | Quad, WithOffset, 1/A | Area | 5 | 4.0117 | 0.99979 | -0.0025 | 0.0305 | -0.0005 |
| n.a. | Phosphate | Lin, WithOffset, 1/A | Area | 0 | n.a. | n.a. | n.a. | n.a. | n.a. |
| **Maximum** | | | | | **15.8030** | 0.99993 | | | |
| **Minimum** | | | | | 3.8857 | **0.99925** | | | |

# Chromatogram and Results

## Injection Details

| | | | |
|---|---|---|---|
| *Injection Name:* | **STD1** | *Run Time (min):* | **5.00** |
| *Vial Number:* | **RA1** | *Injection Volume:* | **5.00** |
| *Injection Type:* | **Calibration Standard** | *Channel:* | **CD** |
| *Calibration Level:* | **1** | *Wavelength:* | **n.a.** |
| *Instrument Method:* | **Anions Program ISO37mM 150mm short 0.4 Const** | *Bandwidth:* | **n.a.** |
| *Processing Method:* | **Anions Processing Method ISO** | *Dilution Factor:* | **1.0000** |
| *Injection Date/Time:* | **08/Sep/23 06:51** | *Sample Weight:* | **1.0000** |

## Chromatogram




## Integration Results

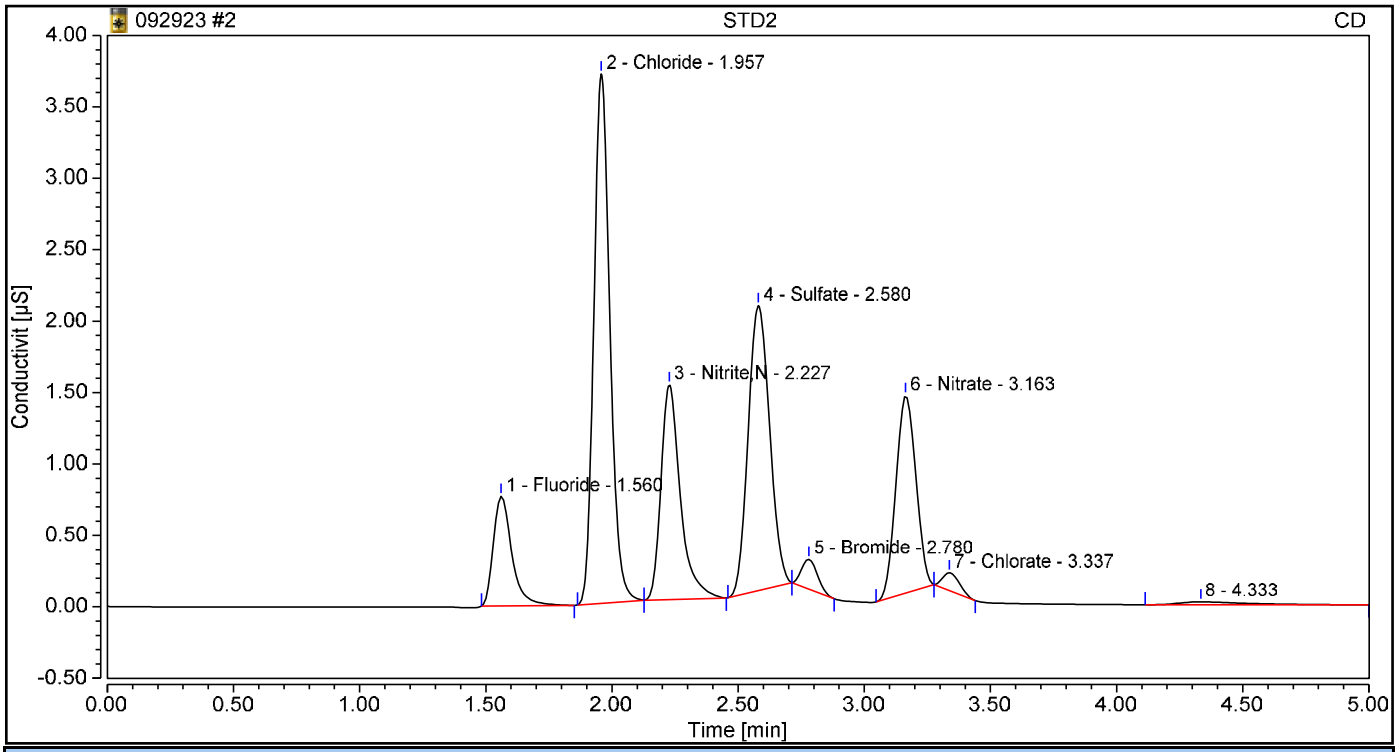
| No. | Peak Name | Retention Time min | Area µS*min | Height µS | Relative Area % | Relative Height % | Amount ppm |
|---|---|---|---|---|---|---|---|
| 1 | Fluoride | 1.557 | 0.012 | 0.154 | 6.96 | 7.57 | 0.1174 |
| 2 | Chloride | 1.957 | 0.058 | 0.786 | 33.19 | 38.71 | 0.5224 |
| 3 | Nitrite,N | 2.230 | 0.034 | 0.313 | 19.33 | 15.41 | 0.1016 |
| 4 | Sulfate | 2.577 | 0.041 | 0.441 | 23.41 | 21.73 | 0.5194 |
| 5 | Bromide | 2.780 | 0.003 | 0.039 | 1.65 | 1.90 | 0.1058 |
| 6 | Nitrate | 3.163 | 0.027 | 0.298 | 15.47 | 14.69 | 0.0971 |
| n.a. | Chlorate | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. |
| n.a. | Phosphate | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. |
| **Total:** | | | **0.174** | **2.031** | **100.00** | **100.00** | |

# Chromatogram and Results

## Injection Details

| | | | |
|---|---|---|---|
| *Injection Name:* | **STD2** | *Run Time (min):* | **5.00** |
| *Vial Number:* | **RA2** | *Injection Volume:* | **5.00** |
| *Injection Type:* | **Calibration Standard** | *Channel:* | **CD** |
| *Calibration Level:* | **2** | *Wavelength:* | **n.a.** |
| *Instrument Method:* | **Anions Program ISO37mM 150mm short 0.4 Const** | *Bandwidth:* | **n.a.** |
| *Processing Method:* | **Anions Processing Method ISO** | *Dilution Factor:* | **1.0000** |
| *Injection Date/Time:* | **08/Sep/23 06:57** | *Sample Weight:* | **1.0000** |

## Chromatogram




## Integration Results

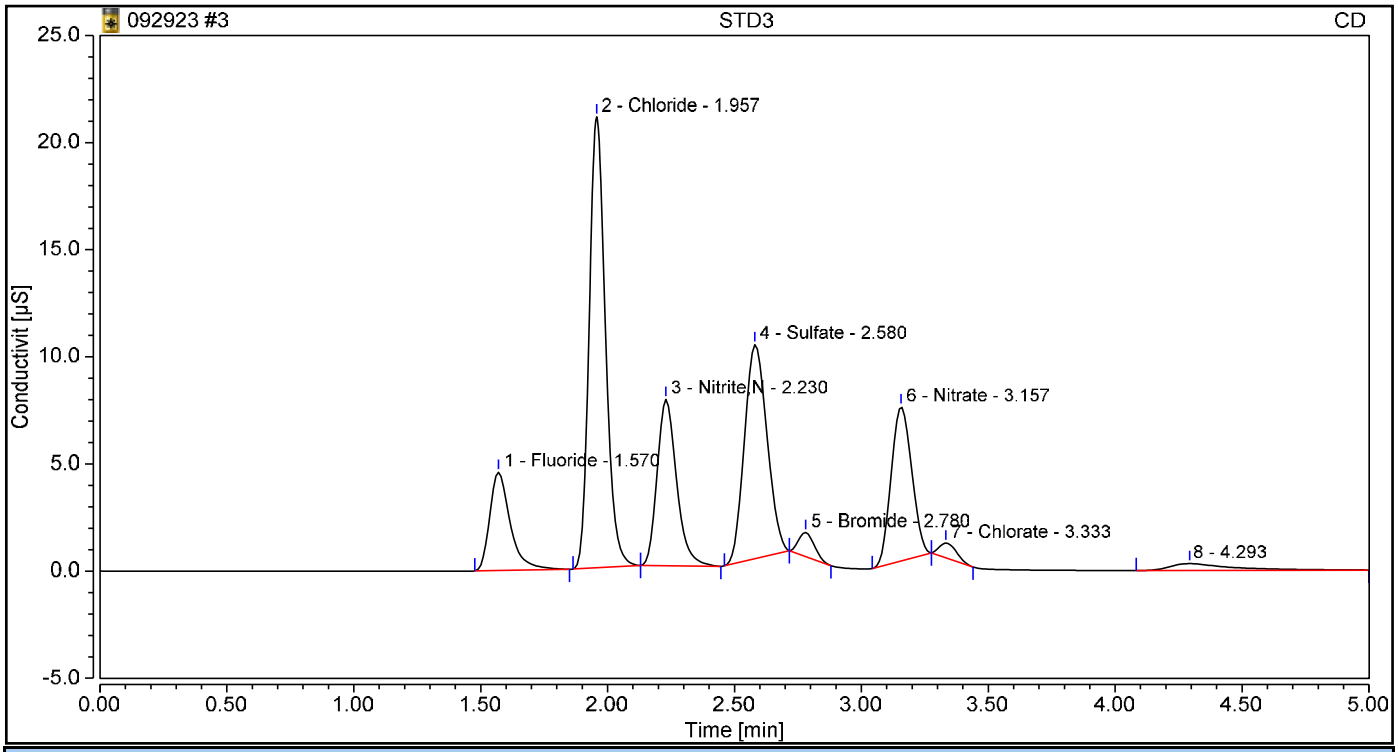
| No. | Peak Name | Retention Time min | Area µS*min | Height µS | Relative Area % | Relative Height % | Amount ppm |
|---|---|---|---|---|---|---|---|
| 1 | Fluoride | 1.560 | 0.065 | 0.767 | 7.87 | 7.89 | 0.3421 |
| 2 | Chloride | 1.957 | 0.273 | 3.706 | 33.01 | 38.17 | 1.8754 |
| 3 | Nitrite,N | 2.227 | 0.133 | 1.504 | 16.11 | 15.49 | 0.3865 |
| 4 | Sulfate | 2.580 | 0.197 | 1.995 | 23.77 | 20.55 | 1.9680 |
| 5 | Bromide | 2.780 | 0.015 | 0.209 | 1.86 | 2.15 | 0.3911 |
| 6 | Nitrate | 3.163 | 0.127 | 1.383 | 15.39 | 14.25 | 0.3945 |
| 7 | Chlorate | 3.337 | 0.010 | 0.124 | 1.17 | 1.28 | 0.4019 |
| n.a. | Phosphate | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. |
| 8 | | 4.333 | 0.007 | 0.020 | 0.80 | 0.21 | n.a. |
| **Total:** | | | **0.827** | **9.709** | **100.00** | **100.00** | |

# Chromatogram and Results

## Injection Details

| | | | |
|---|---|---|---|
| *Injection Name:* | **STD3** | *Run Time (min):* | **5.00** |
| *Vial Number:* | **RA3** | *Injection Volume:* | **5.00** |
| *Injection Type:* | **Calibration Standard** | *Channel:* | **CD** |
| *Calibration Level:* | **3** | *Wavelength:* | **n.a.** |
| *Instrument Method:* | **Anions Program ISO37mM 150mm short 0.4 Const** | *Bandwidth:* | **n.a.** |
| *Processing Method:* | **Anions Processing Method ISO** | *Dilution Factor:* | **1.0000** |
| *Injection Date/Time:* | **08/Sep/23 07:03** | *Sample Weight:* | **1.0000** |

## Chromatogram




## Integration Results

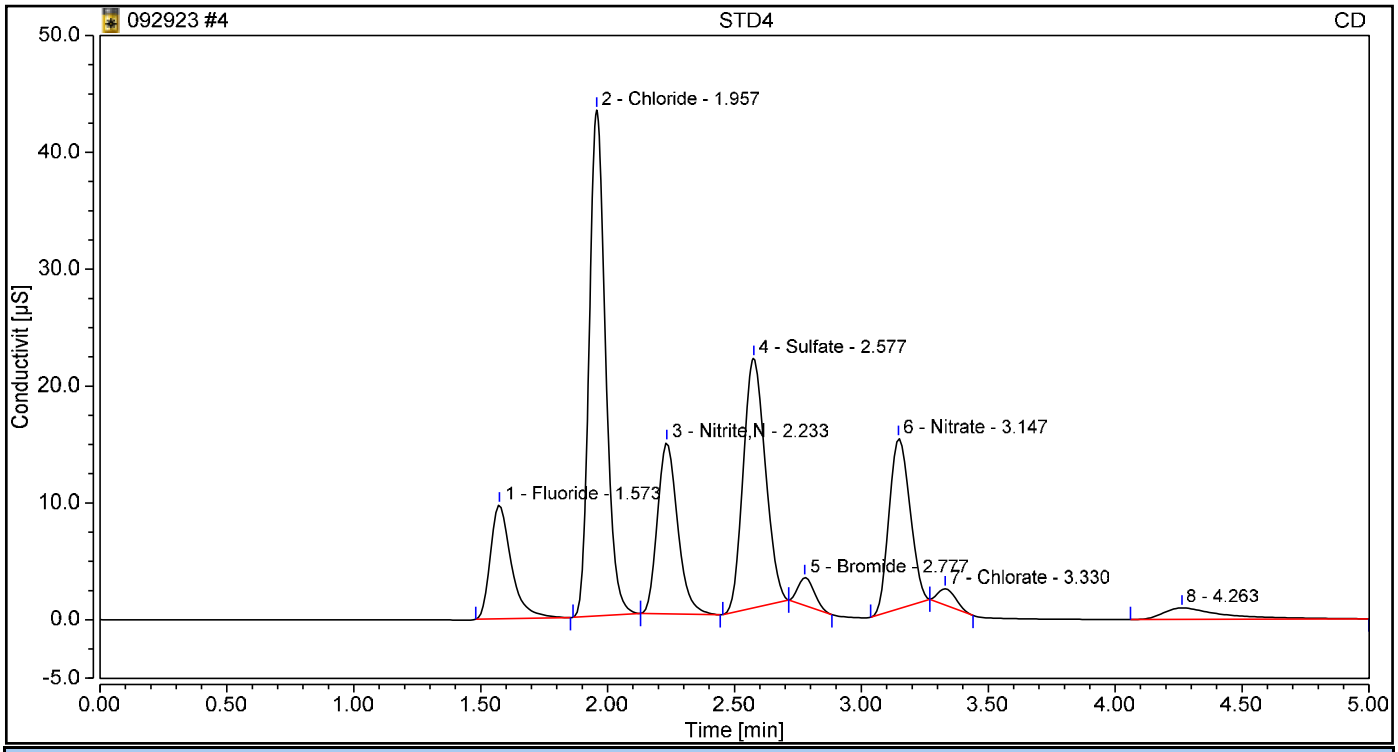
| No. | Peak Name | Retention Time min | Area µS*min | Height µS | Relative Area % | Relative Height % | Amount ppm |
|---|---|---|---|---|---|---|---|
| 1 | Fluoride | 1.570 | 0.427 | 4.589 | 9.26 | 8.70 | 1.8834 |
| 2 | Chloride | 1.957 | 1.559 | 21.045 | 33.82 | 39.92 | 9.9624 |
| 3 | Nitrite,N | 2.230 | 0.693 | 7.766 | 15.03 | 14.73 | 2.0223 |
| 4 | Sulfate | 2.580 | 1.027 | 10.001 | 22.28 | 18.97 | 9.6884 |
| 5 | Bromide | 2.780 | 0.082 | 1.116 | 1.78 | 2.12 | 1.8873 |
| 6 | Nitrate | 3.157 | 0.675 | 7.195 | 14.65 | 13.65 | 2.0190 |
| 7 | Chlorate | 3.333 | 0.055 | 0.687 | 1.20 | 1.30 | 1.9560 |
| n.a. | Phosphate | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. |
| 8 | | 4.293 | 0.091 | 0.320 | 1.98 | 0.61 | n.a. |
| **Total:** | | | **4.610** | **52.719** | **100.00** | **100.00** | |

# Chromatogram and Results

## Injection Details

| | | | |
|---|---|---|---|
| *Injection Name:* | **STD4** | *Run Time (min):* | **5.00** |
| *Vial Number:* | **RA4** | *Injection Volume:* | **5.00** |
| *Injection Type:* | **Calibration Standard** | *Channel:* | **CD** |
| *Calibration Level:* | **4** | *Wavelength:* | **n.a.** |
| *Instrument Method:* | **Anions Program ISO37mM 150mm short 0.4 Const** | *Bandwidth:* | **n.a.** |
| *Processing Method:* | **Anions Processing Method ISO** | *Dilution Factor:* | **1.0000** |
| *Injection Date/Time:* | **08/Sep/23 07:09** | *Sample Weight:* | **1.0000** |

## Chromatogram




## Integration Results

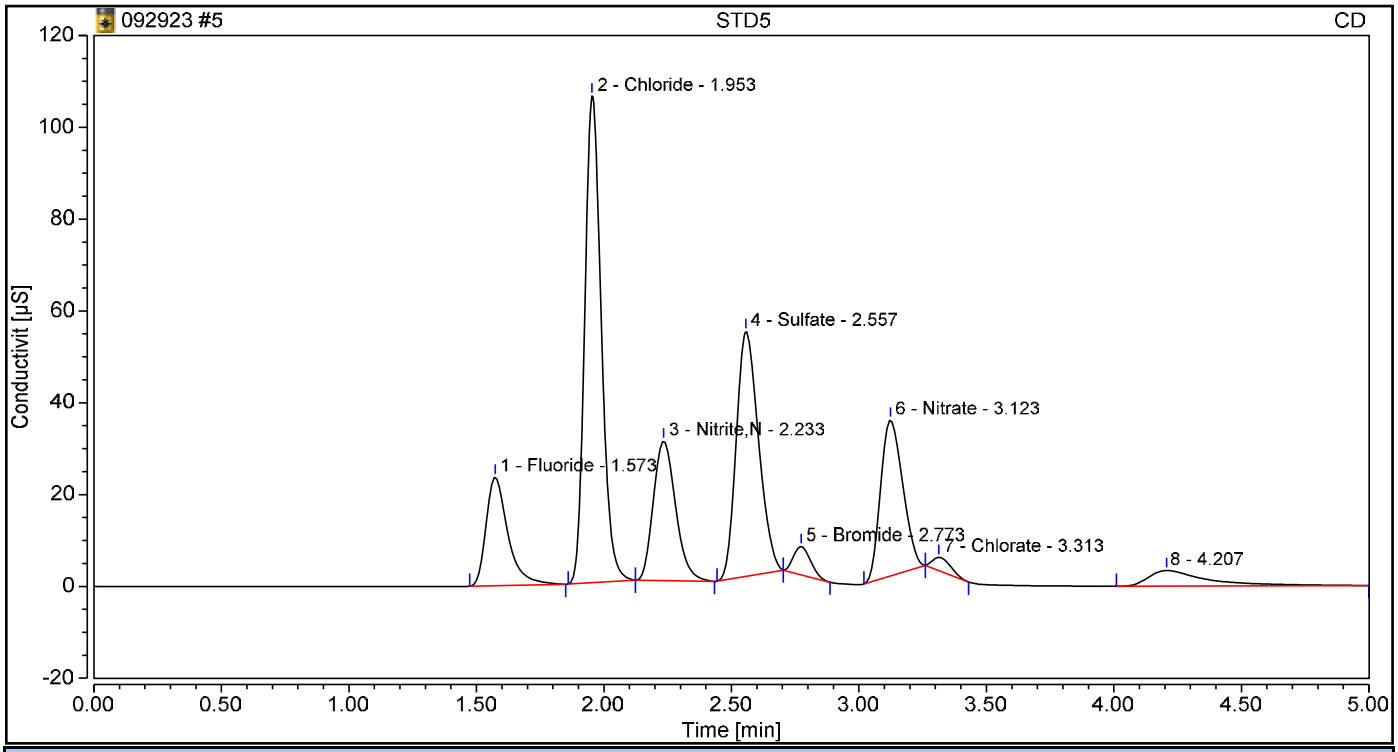
| No. | Peak Name | Retention Time min | Area µS*min | Height µS | Relative Area % | Relative Height % | Amount ppm |
|---|---|---|---|---|---|---|---|
| 1 | Fluoride | 1.573 | 0.931 | 9.759 | 9.68 | 9.01 | 4.0504 |
| 2 | Chloride | 1.957 | 3.227 | 43.285 | 33.54 | 39.95 | 20.4428 |
| 3 | Nitrite,N | 2.233 | 1.364 | 14.668 | 14.17 | 13.54 | 4.0731 |
| 4 | Sulfate | 2.577 | 2.148 | 21.332 | 22.33 | 19.69 | 20.1055 |
| 5 | Bromide | 2.777 | 0.181 | 2.380 | 1.88 | 2.20 | 4.0444 |
| 6 | Nitrate | 3.147 | 1.390 | 14.577 | 14.45 | 13.45 | 4.1367 |
| 7 | Chlorate | 3.330 | 0.114 | 1.381 | 1.18 | 1.27 | 4.1000 |
| n.a. | Phosphate | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. |
| 8 | | 4.263 | 0.266 | 0.977 | 2.76 | 0.90 | n.a. |
| **Total:** | | | **9.620** | **108.360** | **100.00** | **100.00** | |

# Chromatogram and Results

## Injection Details

| | | | |
|---|---|---|---|
| *Injection Name:* | **STD5** | *Run Time (min):* | **5.00** |
| *Vial Number:* | **RA5** | *Injection Volume:* | **5.00** |
| *Injection Type:* | **Calibration Standard** | *Channel:* | **CD** |
| *Calibration Level:* | **5** | *Wavelength:* | **n.a.** |
| *Instrument Method:* | **Anions Program ISO37mM 150mm short 0.4 Const** | *Bandwidth:* | **n.a.** |
| *Processing Method:* | **Anions Processing Method ISO** | *Dilution Factor:* | **1.0000** |
| *Injection Date/Time:* | **08/Sep/23 07:15** | *Sample Weight:* | **1.0000** |

## Chromatogram




## Integration Results

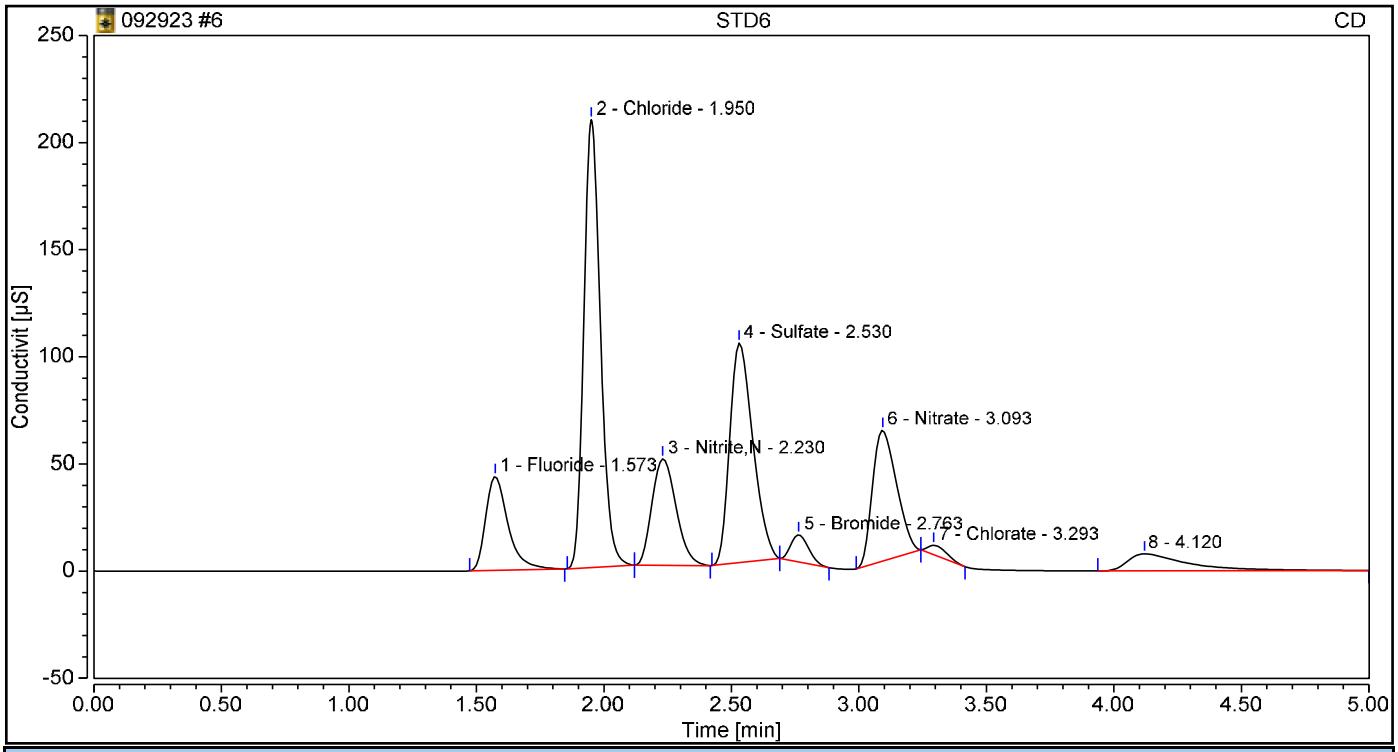
| No. | Peak Name | Retention Time min | Area µS*min | Height µS | Relative Area % | Relative Height % | Amount ppm |
|---|---|---|---|---|---|---|---|
| 1 | Fluoride | 1.573 | 2.337 | 23.654 | 9.83 | 9.10 | 10.2185 |
| 2 | Chloride | 1.953 | 7.963 | 105.986 | 33.48 | 40.79 | 50.2135 |
| 3 | Nitrite,N | 2.233 | 3.069 | 30.441 | 12.91 | 11.72 | 9.8430 |
| 4 | Sulfate | 2.557 | 5.375 | 53.357 | 22.60 | 20.54 | 50.0975 |
| 5 | Bromide | 2.773 | 0.479 | 6.135 | 2.01 | 2.36 | 10.1194 |
| 6 | Nitrate | 3.123 | 3.410 | 33.964 | 14.34 | 13.07 | 10.1231 |
| 7 | Chlorate | 3.313 | 0.247 | 2.888 | 1.04 | 1.11 | 9.8967 |
| n.a. | Phosphate | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. |
| 8 | | 4.207 | 0.904 | 3.391 | 3.80 | 1.31 | n.a. |
| **Total:** | | | **23.785** | **259.816** | **100.00** | **100.00** | |

# Chromatogram and Results

## Injection Details

| | | | |
|---|---|---|---|
| *Injection Name:* | **STD6** | *Run Time (min):* | **5.00** |
| *Vial Number:* | **RA6** | *Injection Volume:* | **5.00** |
| *Injection Type:* | **Calibration Standard** | *Channel:* | **CD** |
| *Calibration Level:* | **6** | *Wavelength:* | **n.a.** |
| *Instrument Method:* | **Anions Program ISO37mM 150mm short 0.4 Const** | *Bandwidth:* | **n.a.** |
| *Processing Method:* | **Anions Processing Method ISO** | *Dilution Factor:* | **1.0000** |
| *Injection Date/Time:* | **08/Sep/23 07:20** | *Sample Weight:* | **1.0000** |

## Chromatogram




## Integration Results

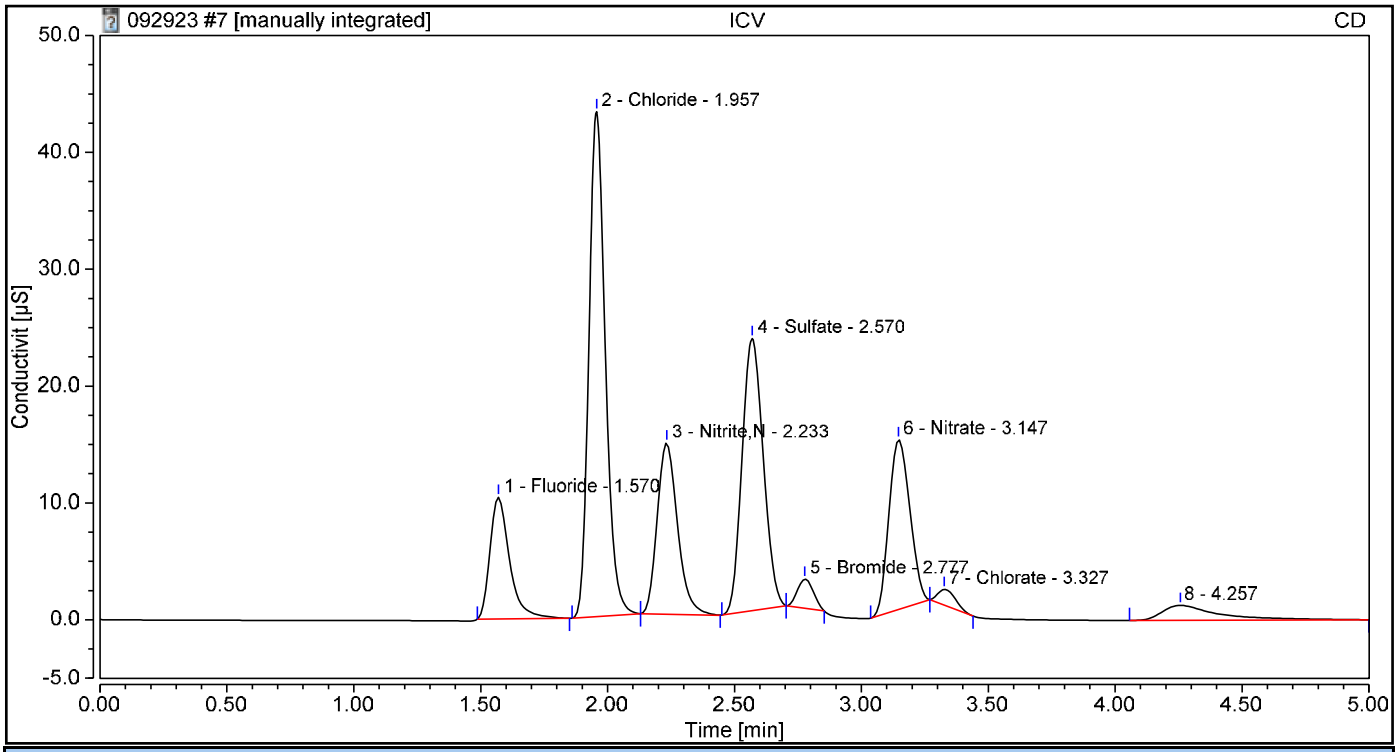
| No. | Peak Name | Retention Time min | Area µS*min | Height µS | Relative Area % | Relative Height % | Amount ppm |
|---|---|---|---|---|---|---|---|
| 1 | Fluoride | 1.573 | 4.451 | 43.796 | 9.53 | 8.92 | 19.8879 |
| 2 | Chloride | 1.950 | 15.800 | 208.984 | 33.84 | 42.57 | 99.4835 |
| 3 | Nitrite,N | 2.230 | 5.436 | 49.707 | 11.64 | 10.13 | 20.0842 |
| 4 | Sulfate | 2.530 | 10.757 | 102.465 | 23.04 | 20.87 | 100.1213 |
| 5 | Bromide | 2.763 | 1.018 | 12.645 | 2.18 | 2.58 | 19.9495 |
| 6 | Nitrate | 3.093 | 6.652 | 61.046 | 14.25 | 12.43 | 19.7296 |
| 7 | Chlorate | 3.293 | 0.395 | 4.348 | 0.85 | 0.89 | 20.0683 |
| n.a. | Phosphate | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. |
| 8 | | 4.120 | 2.185 | 7.934 | 4.68 | 1.62 | n.a. |
| **Total:** | | | **46.696** | **490.925** | **100.00** | **100.00** | |

# Chromatogram and Results

## Injection Details

| | | | |
|---|---|---|---|
| *Injection Name:* | **ICV** | *Run Time (min):* | **5.00** |
| *Vial Number:* | **RA7** | *Injection Volume:* | **5.00** |
| *Injection Type:* | **Unknown** | *Channel:* | **CD** |
| *Calibration Level:* | | *Wavelength:* | **n.a.** |
| *Instrument Method:* | **Anions Program ISO37mM 150mm short 0.4 Const** | *Bandwidth:* | **n.a.** |
| *Processing Method:* | **Anions Processing Method ISO** | *Dilution Factor:* | **1.0000** |
| *Injection Date/Time:* | **08/Sep/23 07:26** | *Sample Weight:* | **1.0000** |

## Chromatogram




## Integration Results

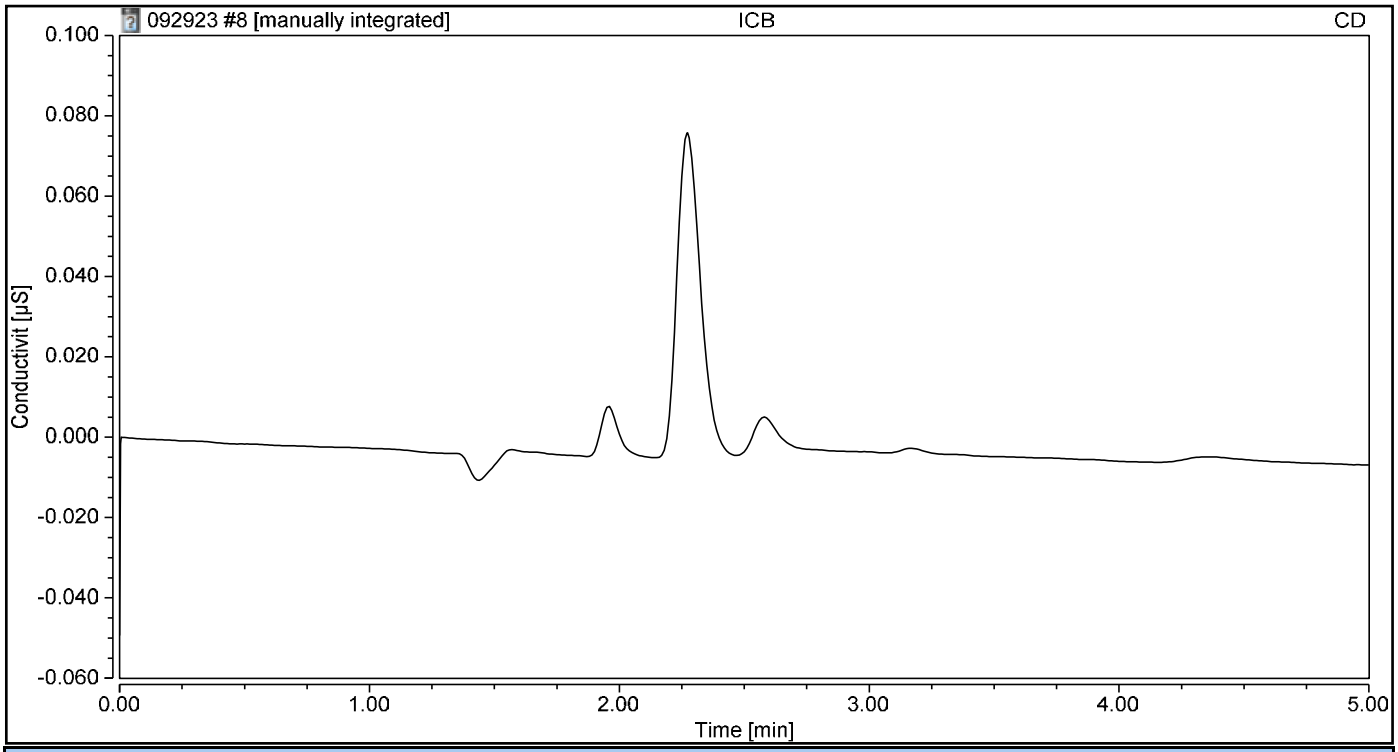
| No. | Peak Name | Retention Time min | Area µS*min | Height µS | Relative Area % | Relative Height % | Amount ppm |
|---|---|---|---|---|---|---|---|
| 1 | Fluoride | 1.570 | 0.928 | 10.403 | 9.49 | 9.36 | 4.0367 |
| 2 | Chloride | 1.957 | 3.228 | 43.208 | 33.00 | 38.86 | 20.4498 |
| 3 | Nitrite,N | 2.233 | 1.366 | 14.652 | 13.96 | 13.18 | 4.0794 |
| 4 | Sulfate | 2.570 | 2.245 | 23.287 | 22.95 | 20.94 | 21.0047 |
| 5 | Bromide | 2.777 | 0.184 | 2.487 | 1.88 | 2.24 | 4.1028 |
| 6 | Nitrate | 3.147 | 1.387 | 14.531 | 14.18 | 13.07 | 4.1263 |
| 7 | Chlorate | 3.327 | 0.112 | 1.343 | 1.14 | 1.21 | 4.0297 |
| n.a. | Phosphate | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. |
| 8 | | 4.257 | 0.332 | 1.283 | 3.40 | 1.15 | n.a. |
| **Total:** | | | **9.781** | **111.194** | **100.00** | **100.00** | |

# Chromatogram and Results

## Injection Details

| | | | |
|---|---|---|---|
| *Injection Name:* | **ICB** | *Run Time (min):* | **5.00** |
| *Vial Number:* | **RA8** | *Injection Volume:* | **5.00** |
| *Injection Type:* | **Unknown** | *Channel:* | **CD** |
| *Calibration Level:* | | *Wavelength:* | **n.a.** |
| *Instrument Method:* | **Anions Program ISO37mM 150mm short 0.4 Const** | *Bandwidth:* | **n.a.** |
| *Processing Method:* | **Anions Processing Method ISO** | *Dilution Factor:* | **1.0000** |
| *Injection Date/Time:* | **08/Sep/23 07:44** | *Sample Weight:* | **1.0000** |

## Chromatogram




## Integration Results

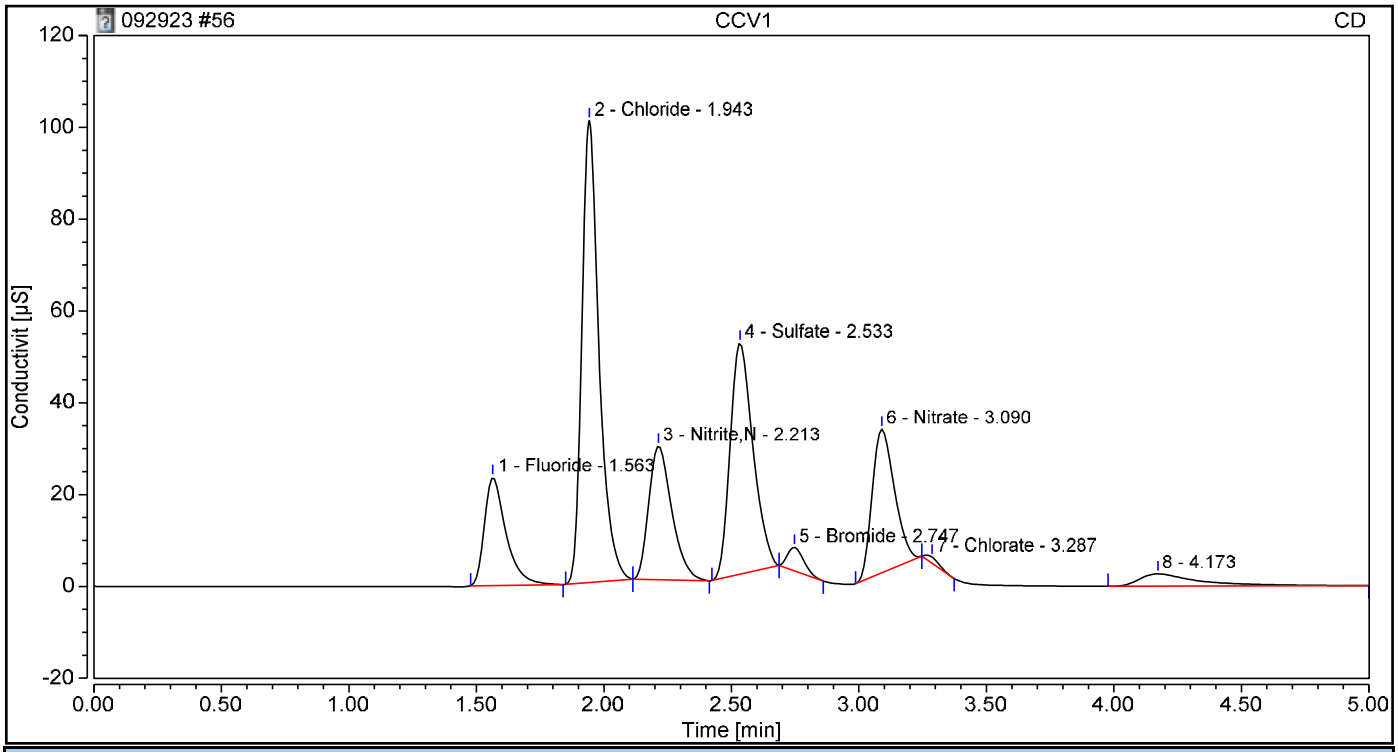
| No. | Peak Name | Retention Time min | Area µS*min | Height µS | Relative Area % | Relative Height % | Amount ppm |
|---|---|---|---|---|---|---|---|
| n.a. | Fluoride | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. |
| n.a. | Chloride | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. |
| n.a. | Nitrite,N | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. |
| n.a. | Sulfate | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. |
| n.a. | Bromide | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. |
| n.a. | Nitrate | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. |
| n.a. | Chlorate | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. |
| n.a. | Phosphate | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. |
| **Total:** | | | **0.000** | **0.000** | **0.00** | **0.00** | |

# Chromatogram and Results

## Injection Details

| | | | |
|---|---|---|---|
| *Injection Name:* | **CCV1** | *Run Time (min):* | **5.00** |
| *Vial Number:* | **R3** | *Injection Volume:* | **5.00** |
| *Injection Type:* | **Unknown** | *Channel:* | **CD** |
| *Calibration Level:* | | *Wavelength:* | **n.a.** |
| *Instrument Method:* | **Anions Program ISO37mM 150mm short 0.4 Const** | *Bandwidth:* | **n.a.** |
| *Processing Method:* | **Anions Processing Method ISO** | *Dilution Factor:* | **1.0000** |
| *Injection Date/Time:* | **29/Sep/23 18:14** | *Sample Weight:* | **1.0000** |

## Chromatogram




## Integration Results

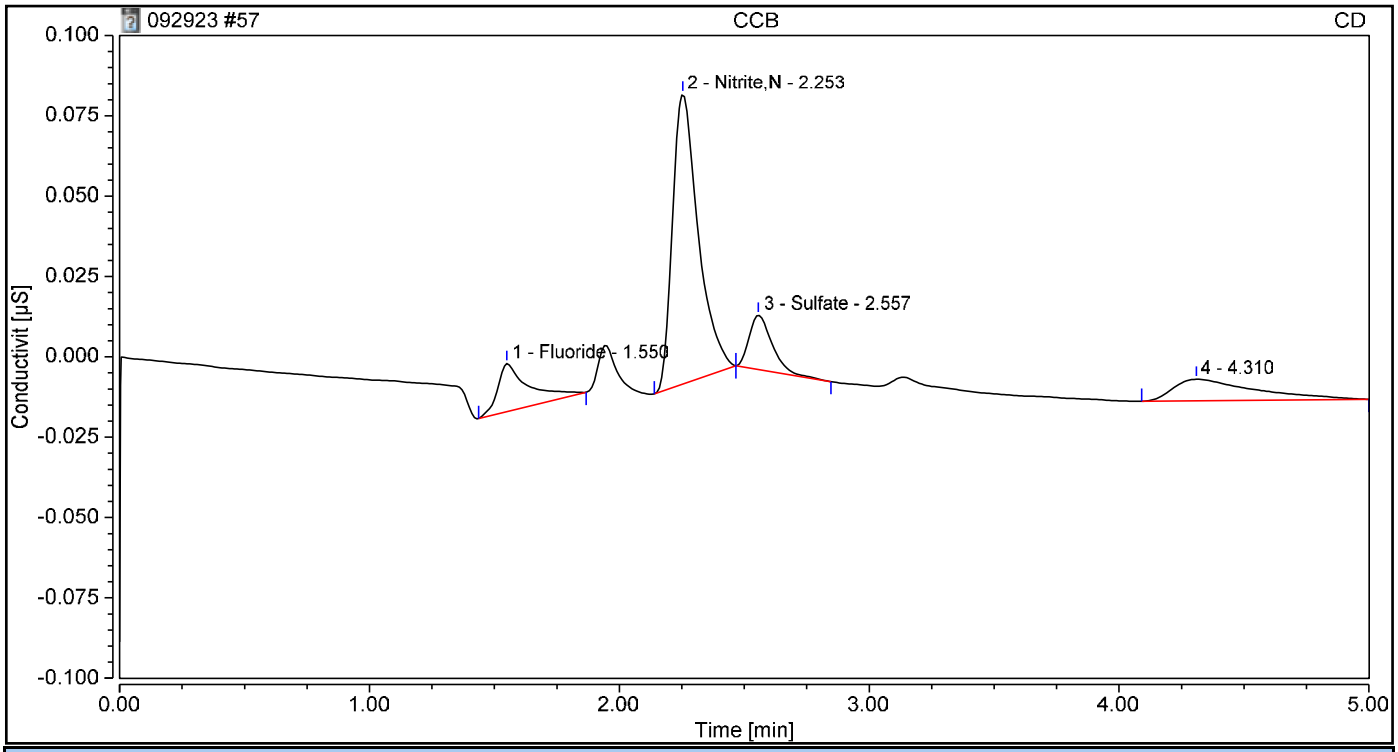
| No. | Peak Name | Retention Time min | Area µS*min | Height µS | Relative Area % | Relative Height % | Amount ppm |
|---|---|---|---|---|---|---|---|
| 1 | Fluoride | 1.563 | 2.303 | 23.544 | 10.12 | 9.65 | 10.0681 |
| 2 | Chloride | 1.943 | 7.854 | 100.583 | 34.51 | 41.22 | 49.5338 |
| 3 | Nitrite,N | 2.213 | 3.033 | 29.113 | 13.33 | 11.93 | 9.7113 |
| 4 | Sulfate | 2.533 | 5.205 | 50.355 | 22.87 | 20.64 | 48.5222 |
| 5 | Bromide | 2.747 | 0.379 | 5.114 | 1.67 | 2.10 | 8.1508 |
| 6 | Nitrate | 3.090 | 3.162 | 31.279 | 13.89 | 12.82 | 9.3872 |
| 7 | Chlorate | 3.287 | 0.080 | 1.344 | 0.35 | 0.55 | 2.8446 |
| n.a. | Phosphate | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. |
| 8 | | 4.173 | 0.742 | 2.689 | 3.26 | 1.10 | n.a. |
| **Total:** | | | **22.760** | **244.020** | **100.00** | **100.00** | |

# Chromatogram and Results

## Injection Details

| | | | |
|---|---|---|---|
| *Injection Name:* | **CCB** | *Run Time (min):* | **5.00** |
| *Vial Number:* | **R8** | *Injection Volume:* | **5.00** |
| *Injection Type:* | **Unknown** | *Channel:* | **CD** |
| *Calibration Level:* | | *Wavelength:* | **n.a.** |
| *Instrument Method:* | **Anions Program ISO37mM 150mm short 0.4 Const** | *Bandwidth:* | **n.a.** |
| *Processing Method:* | **Anions Processing Method ISO** | *Dilution Factor:* | **1.0000** |
| *Injection Date/Time:* | **29/Sep/23 18:26** | *Sample Weight:* | **1.0000** |

## Chromatogram




## Integration Results

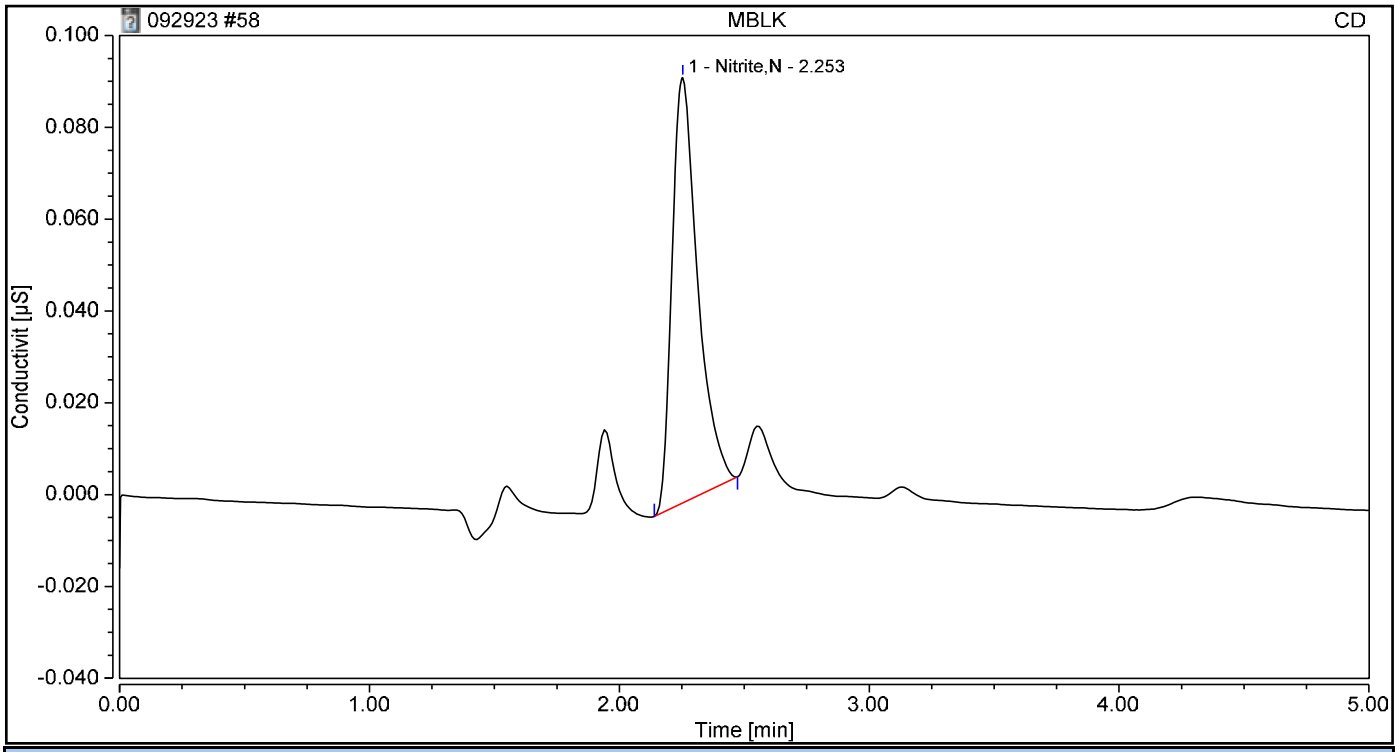
| No. | Peak Name | Retention Time min | Area µS*min | Height µS | Relative Area % | Relative Height % | Amount ppm |
|---|---|---|---|---|---|---|---|
| 1 | Fluoride | 1.550 | 0.002 | 0.015 | 12.37 | 11.61 | 0.0753 |
| n.a. | Chloride | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. |
| 2 | Nitrite,N | 2.253 | 0.011 | 0.090 | 62.45 | 70.07 | 0.0368 |
| 3 | Sulfate | 2.557 | 0.002 | 0.017 | 10.45 | 13.12 | 0.1583 |
| n.a. | Bromide | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. |
| n.a. | Nitrate | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. |
| n.a. | Chlorate | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. |
| n.a. | Phosphate | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. |
| 4 | | 4.310 | 0.003 | 0.007 | 14.73 | 5.21 | n.a. |
| **Total:** | | | **0.017** | **0.129** | **100.00** | **100.00** | |

# Chromatogram and Results

## Injection Details

| | | | |
|---|---|---|---|
| *Injection Name:* | **MBLK** | *Run Time (min):* | **5.00** |
| *Vial Number:* | **R5** | *Injection Volume:* | **5.00** |
| *Injection Type:* | **Unknown** | *Channel:* | **CD** |
| *Calibration Level:* | | *Wavelength:* | **n.a.** |
| *Instrument Method:* | **Anions Program ISO37mM 150mm short 0.4 Const** | *Bandwidth:* | **n.a.** |
| *Processing Method:* | **Anions Processing Method ISO** | *Dilution Factor:* | **1.0000** |
| *Injection Date/Time:* | **29/Sep/23 18:31** | *Sample Weight:* | **1.0000** |

## Chromatogram




## Integration Results

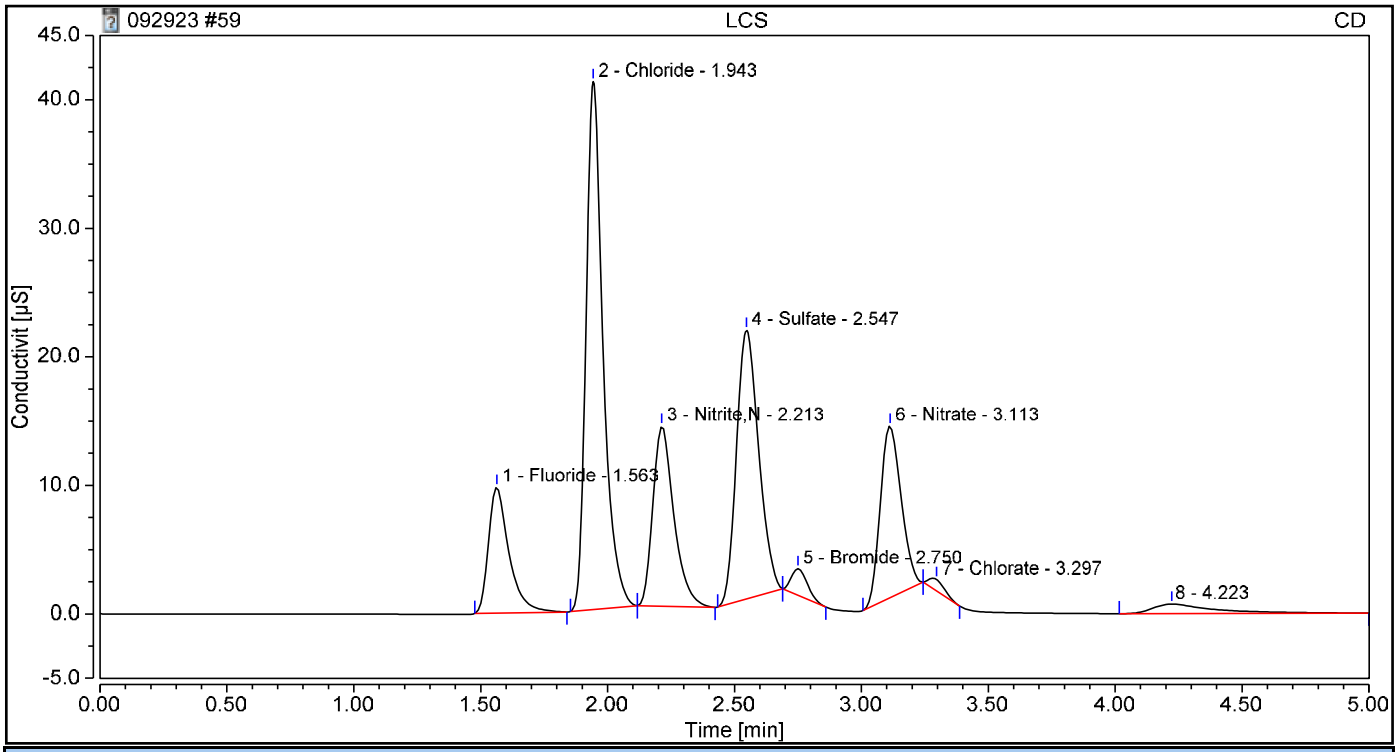
| No. | Peak Name | Retention Time min | Area µS*min | Height µS | Relative Area % | Relative Height % | Amount ppm |
|---|---|---|---|---|---|---|---|
| n.a. | Fluoride | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. |
| n.a. | Chloride | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. |
| 1 | Nitrite,N | 2.253 | 0.011 | 0.093 | 100.00 | 100.00 | 0.0376 |
| n.a. | Sulfate | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. |
| n.a. | Bromide | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. |
| n.a. | Nitrate | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. |
| n.a. | Chlorate | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. |
| n.a. | Phosphate | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. |
| **Total:** | | | **0.011** | **0.093** | **100.00** | **100.00** | |

# Chromatogram and Results

## Injection Details

| | | | |
|---|---|---|---|
| *Injection Name:* | **LCS** | *Run Time (min):* | **5.00** |
| *Vial Number:* | **R2** | *Injection Volume:* | **5.00** |
| *Injection Type:* | **Unknown** | *Channel:* | **CD** |
| *Calibration Level:* | | *Wavelength:* | **n.a.** |
| *Instrument Method:* | **Anions Program ISO37mM 150mm short 0.4 Const** | *Bandwidth:* | **n.a.** |
| *Processing Method:* | **Anions Processing Method ISO** | *Dilution Factor:* | **1.0000** |
| *Injection Date/Time:* | **29/Sep/23 18:43** | *Sample Weight:* | **1.0000** |

## Chromatogram




## Integration Results

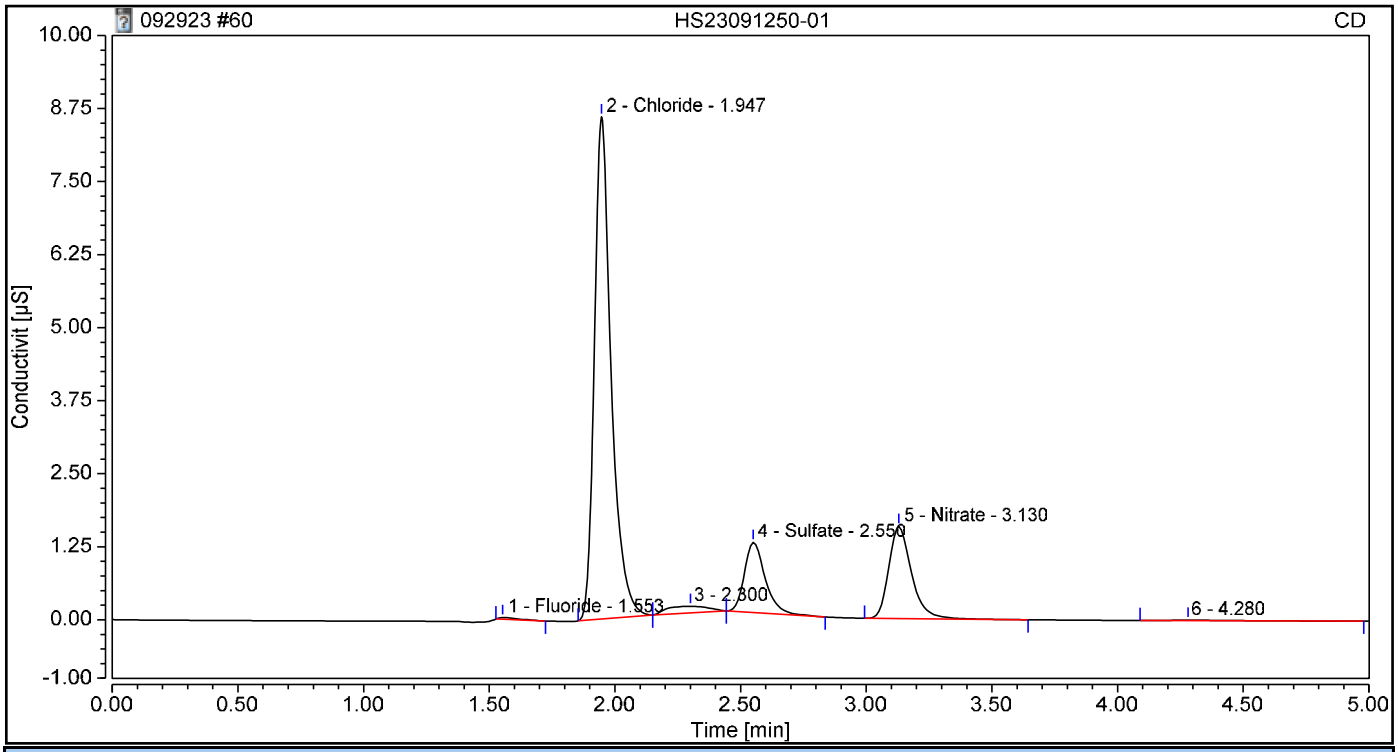
| No. | Peak Name | Retention Time min | Area µS*min | Height µS | Relative Area % | Relative Height % | Amount ppm |
|---|---|---|---|---|---|---|---|
| 1 | Fluoride | 1.563 | 0.911 | 9.784 | 9.84 | 9.52 | 3.9618 |
| 2 | Chloride | 1.943 | 3.191 | 41.065 | 34.46 | 39.95 | 20.2212 |
| 3 | Nitrite,N | 2.213 | 1.348 | 14.004 | 14.56 | 13.63 | 4.0236 |
| 4 | Sulfate | 2.547 | 2.110 | 20.908 | 22.78 | 20.34 | 19.7497 |
| 5 | Bromide | 2.750 | 0.152 | 2.065 | 1.64 | 2.01 | 3.4104 |
| 6 | Nitrate | 3.113 | 1.278 | 13.341 | 13.80 | 12.98 | 3.8043 |
| 7 | Chlorate | 3.297 | 0.062 | 0.883 | 0.67 | 0.86 | 2.1887 |
| n.a. | Phosphate | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. |
| 8 | | 4.223 | 0.209 | 0.733 | 2.26 | 0.71 | n.a. |
| **Total:** | | | **9.260** | **102.785** | **100.00** | **100.00** | |

# Chromatogram and Results

## Injection Details

| | | | |
|---|---|---|---|
| *Injection Name:* | **HS23091250-01** | *Run Time (min):* | **5.00** |
| *Vial Number:* | **RE2** | *Injection Volume:* | **5.00** |
| *Injection Type:* | **Unknown** | *Channel:* | **CD** |
| *Calibration Level:* | | *Wavelength:* | **n.a.** |
| *Instrument Method:* | **Anions Program ISO37mM 150mm short 0.4 Const** | *Bandwidth:* | **n.a.** |
| *Processing Method:* | **Anions Processing Method ISO** | *Dilution Factor:* | **1.0000** |
| *Injection Date/Time:* | **29/Sep/23 18:49** | *Sample Weight:* | **1.0000** |

## Chromatogram




## Integration Results

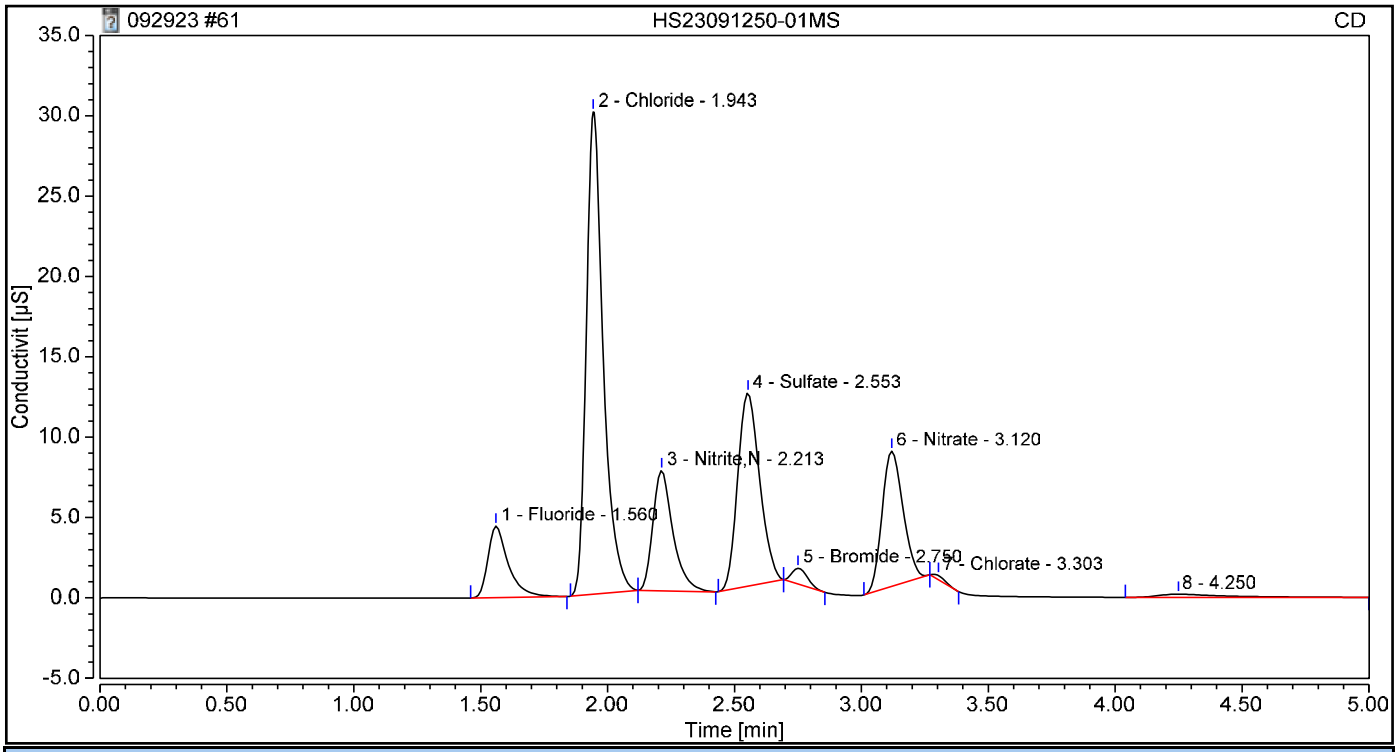
| No. | Peak Name | Retention Time min | Area µS*min | Height µS | Relative Area % | Relative Height % | Amount ppm |
|---|---|---|---|---|---|---|---|
| 1 | Fluoride | 1.553 | 0.003 | 0.030 | 0.28 | 0.26 | 0.0778 |
| 2 | Chloride | 1.947 | 0.665 | 8.598 | 68.31 | 74.59 | 4.3408 |
| n.a. | Nitrite,N | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. |
| 3 | | 2.300 | 0.022 | 0.114 | 2.28 | 0.99 | n.a. |
| 4 | Sulfate | 2.550 | 0.116 | 1.200 | 11.87 | 10.41 | 1.2158 |
| n.a. | Bromide | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. |
| 5 | Nitrate | 3.130 | 0.165 | 1.577 | 16.97 | 13.68 | 0.5073 |
| n.a. | Chlorate | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. |
| n.a. | Phosphate | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. |
| 6 | | 4.280 | 0.003 | 0.008 | 0.29 | 0.07 | n.a. |
| **Total:** | | | **0.974** | **11.528** | **100.00** | **100.00** | |

# Chromatogram and Results

## Injection Details

| | | | |
|---|---|---|---|
| *Injection Name:* | **HS23091250-01MS** | *Run Time (min):* | **5.00** |
| *Vial Number:* | **RE3** | *Injection Volume:* | **5.00** |
| *Injection Type:* | **Unknown** | *Channel:* | **CD** |
| *Calibration Level:* | | *Wavelength:* | **n.a.** |
| *Instrument Method:* | **Anions Program ISO37mM 150mm short 0.4 Const** | *Bandwidth:* | **n.a.** |
| *Processing Method:* | **Anions Processing Method ISO** | *Dilution Factor:* | **1.0000** |
| *Injection Date/Time:* | **29/Sep/23 18:54** | *Sample Weight:* | **1.0000** |

## Chromatogram




## Integration Results

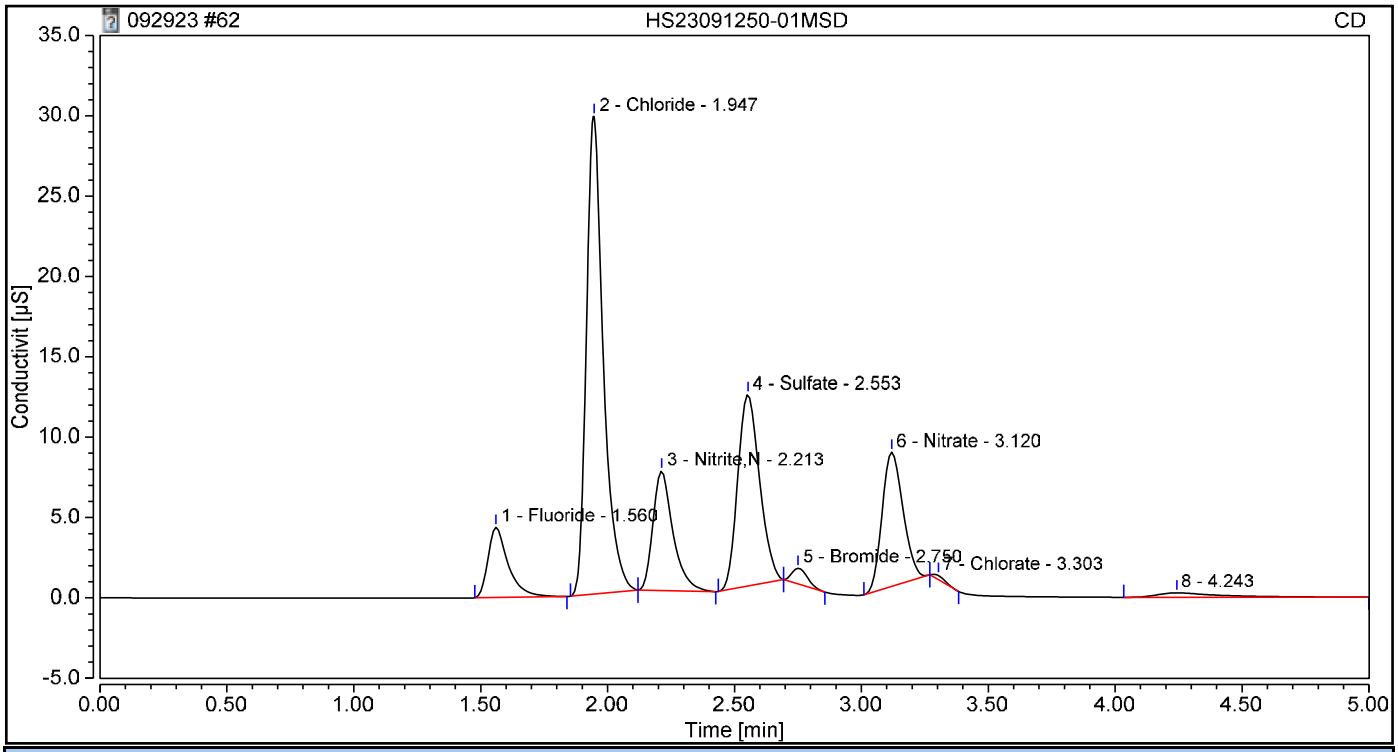
| No. | Peak Name | Retention Time min | Area µS*min | Height µS | Relative Area % | Relative Height % | Amount ppm |
|---|---|---|---|---|---|---|---|
| 1 | Fluoride | 1.560 | 0.415 | 4.451 | 7.43 | 6.97 | 1.8300 |
| 2 | Chloride | 1.943 | 2.326 | 30.015 | 41.68 | 47.00 | 14.7801 |
| 3 | Nitrite,N | 2.213 | 0.687 | 7.481 | 12.30 | 11.72 | 2.0040 |
| 4 | Sulfate | 2.553 | 1.201 | 12.021 | 21.52 | 18.83 | 11.3038 |
| 5 | Bromide | 2.750 | 0.071 | 0.990 | 1.28 | 1.55 | 1.6502 |
| 6 | Nitrate | 3.120 | 0.808 | 8.428 | 14.47 | 13.20 | 2.4111 |
| 7 | Chlorate | 3.303 | 0.014 | 0.268 | 0.25 | 0.42 | 0.5432 |
| n.a. | Phosphate | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. |
| 8 | | 4.250 | 0.059 | 0.201 | 1.07 | 0.31 | n.a. |
| **Total:** | | | **5.581** | **63.855** | **100.00** | **100.00** | |

# Chromatogram and Results

## Injection Details

| | | | |
|---|---|---|---|
| *Injection Name:* | **HS23091250-01MSD** | *Run Time (min):* | **5.00** |
| *Vial Number:* | **RE4** | *Injection Volume:* | **5.00** |
| *Injection Type:* | **Unknown** | *Channel:* | **CD** |
| *Calibration Level:* | | *Wavelength:* | **n.a.** |
| *Instrument Method:* | **Anions Program ISO37mM 150mm short 0.4 Const** | *Bandwidth:* | **n.a.** |
| *Processing Method:* | **Anions Processing Method ISO** | *Dilution Factor:* | **1.0000** |
| *Injection Date/Time:* | **29/Sep/23 19:00** | *Sample Weight:* | **1.0000** |

## Chromatogram




## Integration Results

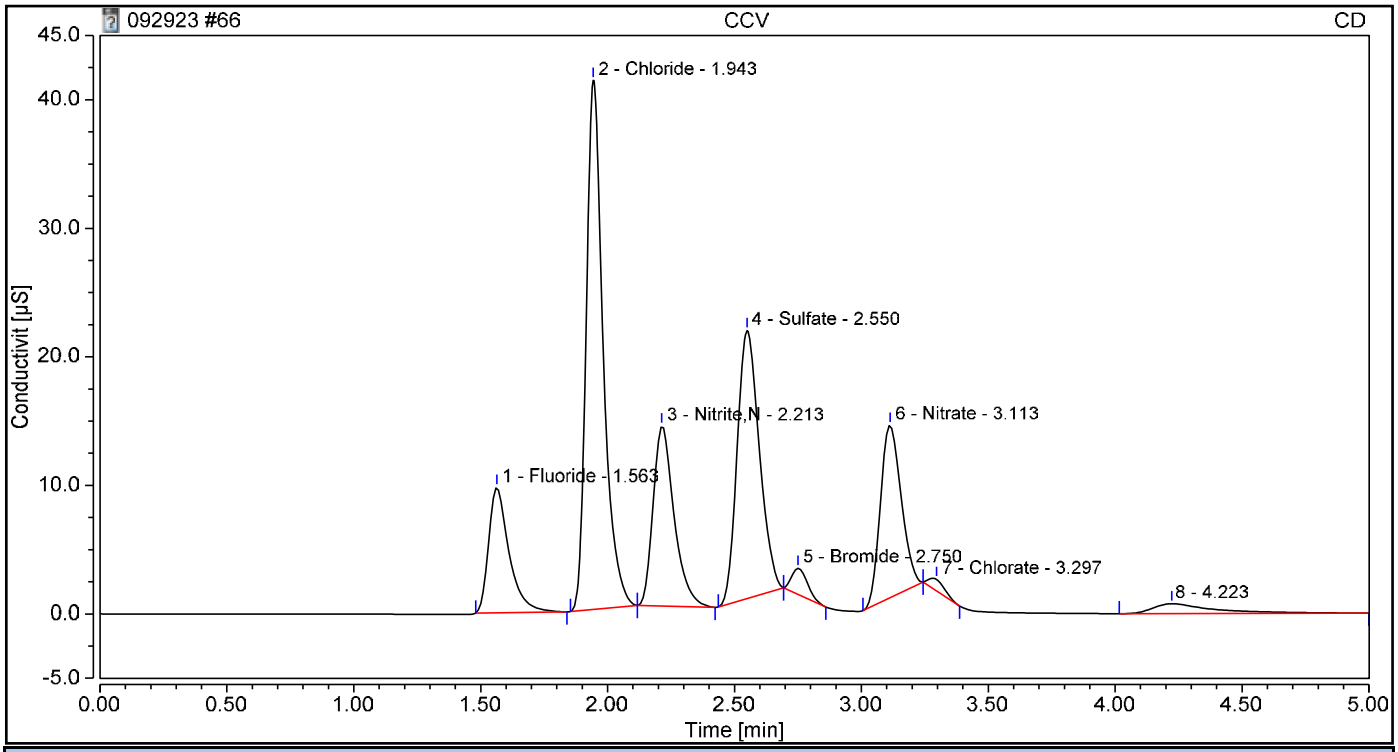
| No. | Peak Name | Retention Time min | Area µS*min | Height µS | Relative Area % | Relative Height % | Amount ppm |
|---|---|---|---|---|---|---|---|
| 1 | Fluoride | 1.560 | 0.401 | 4.368 | 7.24 | 6.90 | 1.7719 |
| 2 | Chloride | 1.947 | 2.304 | 29.722 | 41.59 | 46.96 | 14.6429 |
| 3 | Nitrite,N | 2.213 | 0.681 | 7.424 | 12.30 | 11.73 | 1.9880 |
| 4 | Sulfate | 2.553 | 1.188 | 11.910 | 21.45 | 18.82 | 11.1825 |
| 5 | Bromide | 2.750 | 0.071 | 0.978 | 1.27 | 1.55 | 1.6304 |
| 6 | Nitrate | 3.120 | 0.799 | 8.348 | 14.43 | 13.19 | 2.3855 |
| 7 | Chlorate | 3.303 | 0.014 | 0.266 | 0.25 | 0.42 | 0.5401 |
| n.a. | Phosphate | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. |
| 8 | | 4.243 | 0.082 | 0.279 | 1.47 | 0.44 | n.a. |
| **Total:** | | | **5.539** | **63.294** | **100.00** | **100.00** | |

# Chromatogram and Results

## Injection Details

| | | | |
|---|---|---|---|
| *Injection Name:* | **CCV** | *Run Time (min):* | **5.00** |
| *Vial Number:* | **R1** | *Injection Volume:* | **5.00** |
| *Injection Type:* | **Unknown** | *Channel:* | **CD** |
| *Calibration Level:* | | *Wavelength:* | **n.a.** |
| *Instrument Method:* | **Anions Program ISO37mM 150mm short 0.4 Const** | *Bandwidth:* | **n.a.** |
| *Processing Method:* | **Anions Processing Method ISO** | *Dilution Factor:* | **1.0000** |
| *Injection Date/Time:* | **29/Sep/23 19:35** | *Sample Weight:* | **1.0000** |

## Chromatogram




## Integration Results

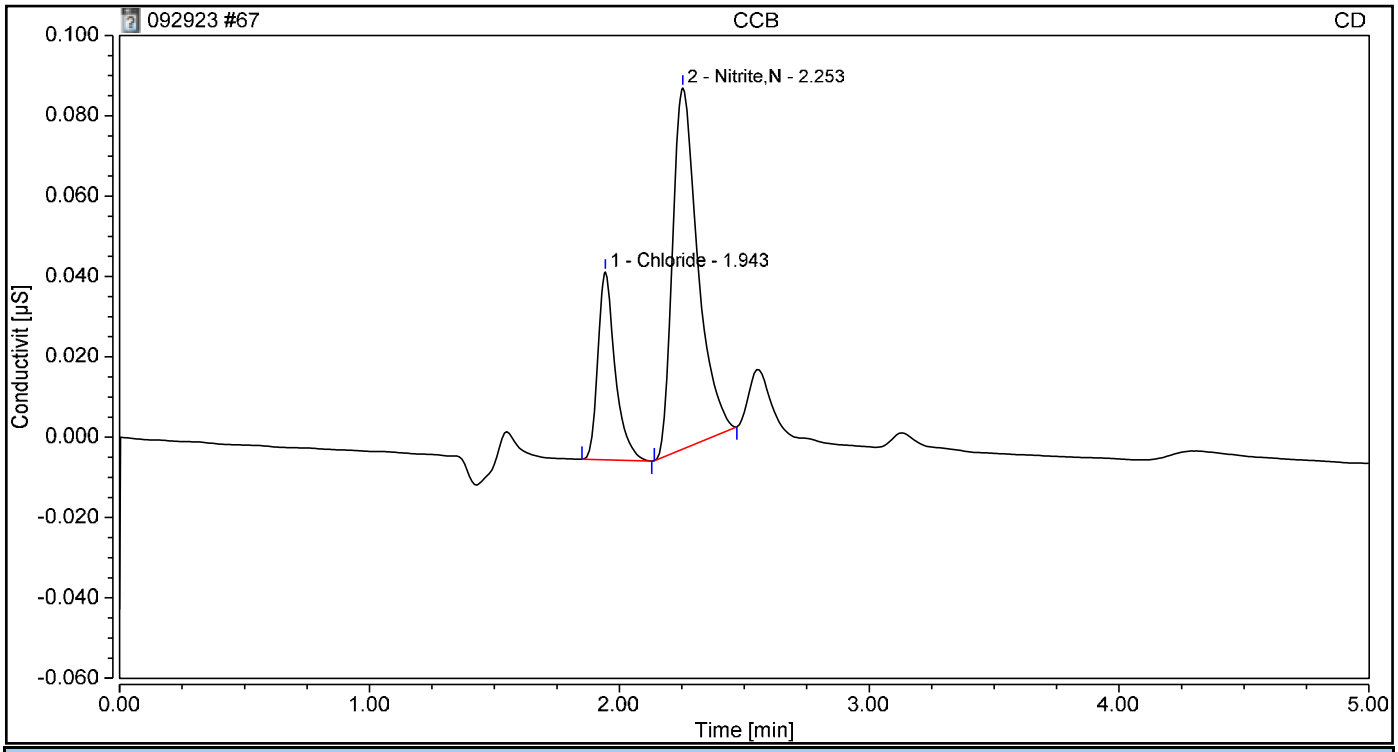
| No. | Peak Name | Retention Time min | Area µS*min | Height µS | Relative Area % | Relative Height % | Amount ppm |
|---|---|---|---|---|---|---|---|
| 1 | Fluoride | 1.563 | 0.906 | 9.745 | 9.79 | 9.47 | 3.9405 |
| 2 | Chloride | 1.943 | 3.193 | 41.169 | 34.52 | 40.03 | 20.2331 |
| 3 | Nitrite,N | 2.213 | 1.346 | 14.015 | 14.55 | 13.63 | 4.0181 |
| 4 | Sulfate | 2.550 | 2.102 | 20.837 | 22.72 | 20.26 | 19.6788 |
| 5 | Bromide | 2.750 | 0.147 | 2.022 | 1.59 | 1.97 | 3.3010 |
| 6 | Nitrate | 3.113 | 1.279 | 13.409 | 13.82 | 13.04 | 3.8071 |
| 7 | Chlorate | 3.297 | 0.063 | 0.897 | 0.68 | 0.87 | 2.2237 |
| n.a. | Phosphate | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. |
| 8 | | 4.223 | 0.215 | 0.760 | 2.33 | 0.74 | n.a. |
| **Total:** | | | **9.251** | **102.855** | **100.00** | **100.00** | |

# Chromatogram and Results

## Injection Details

| | | | |
|---|---|---|---|
| *Injection Name:* | **CCB** | *Run Time (min):* | **5.00** |
| *Vial Number:* | **R4** | *Injection Volume:* | **5.00** |
| *Injection Type:* | **Unknown** | *Channel:* | **CD** |
| *Calibration Level:* | | *Wavelength:* | **n.a.** |
| *Instrument Method:* | **Anions Program ISO37mM 150mm short 0.4 Const** | *Bandwidth:* | **n.a.** |
| *Processing Method:* | **Anions Processing Method ISO** | *Dilution Factor:* | **1.0000** |
| *Injection Date/Time:* | **29/Sep/23 19:47** | *Sample Weight:* | **1.0000** |

## Chromatogram




## Integration Results

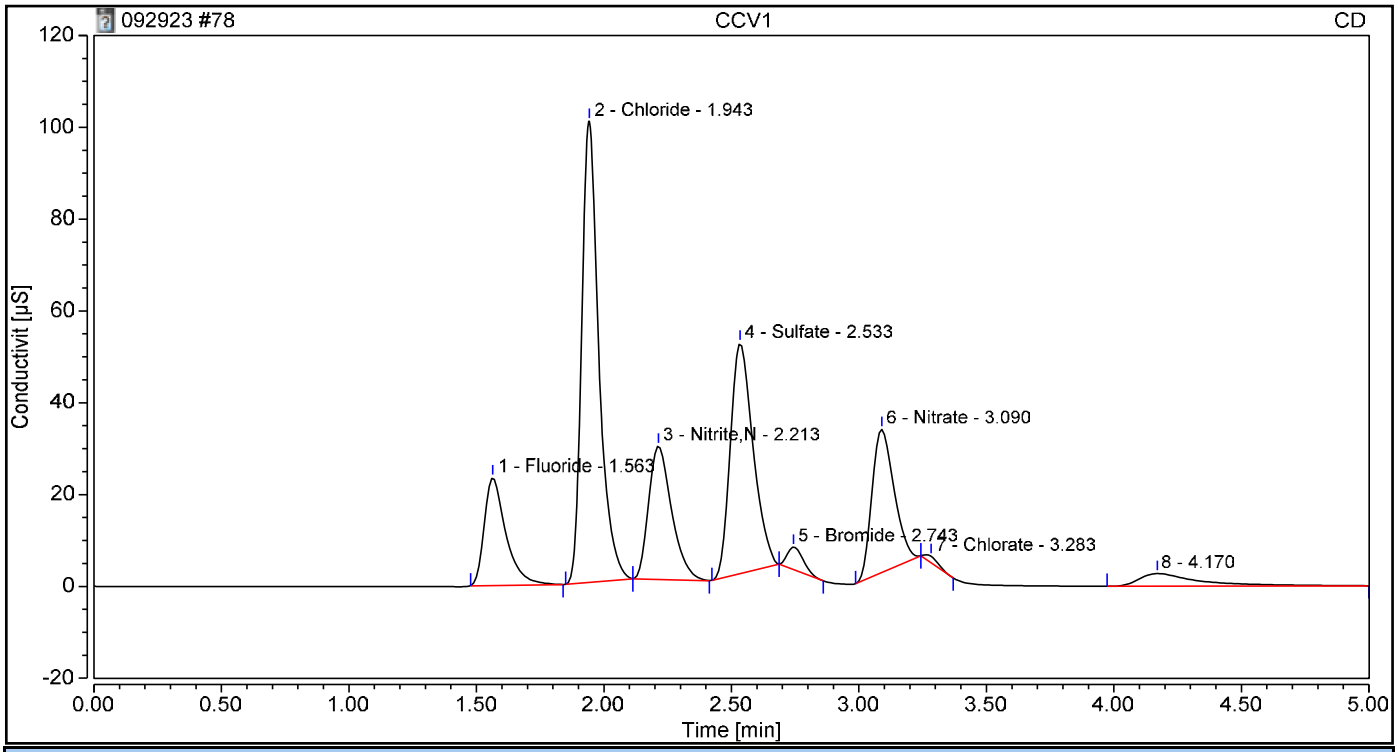
| No. | Peak Name | Retention Time min | Area µS*min | Height µS | Relative Area % | Relative Height % | Amount ppm |
|---|---|---|---|---|---|---|---|
| n.a. | Fluoride | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. |
| 1 | Chloride | 1.943 | 0.004 | 0.047 | 26.16 | 34.23 | 0.1836 |
| 2 | Nitrite,N | 2.253 | 0.011 | 0.090 | 73.84 | 65.77 | 0.0361 |
| n.a. | Sulfate | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. |
| n.a. | Bromide | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. |
| n.a. | Nitrate | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. |
| n.a. | Chlorate | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. |
| n.a. | Phosphate | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. |
| **Total:** | | | **0.014** | **0.137** | **100.00** | **100.00** | |

# Chromatogram and Results

## Injection Details

| | | | |
|---|---|---|---|
| *Injection Name:* | **CCV1** | *Run Time (min):* | **5.00** |
| *Vial Number:* | **R3** | *Injection Volume:* | **5.00** |
| *Injection Type:* | **Unknown** | *Channel:* | **CD** |
| *Calibration Level:* | | *Wavelength:* | **n.a.** |
| *Instrument Method:* | **Anions Program ISO37mM 150mm short 0.4 Const** | *Bandwidth:* | **n.a.** |
| *Processing Method:* | **Anions Processing Method ISO** | *Dilution Factor:* | **1.0000** |
| *Injection Date/Time:* | **29/Sep/23 21:02** | *Sample Weight:* | **1.0000** |

## Chromatogram




## Integration Results

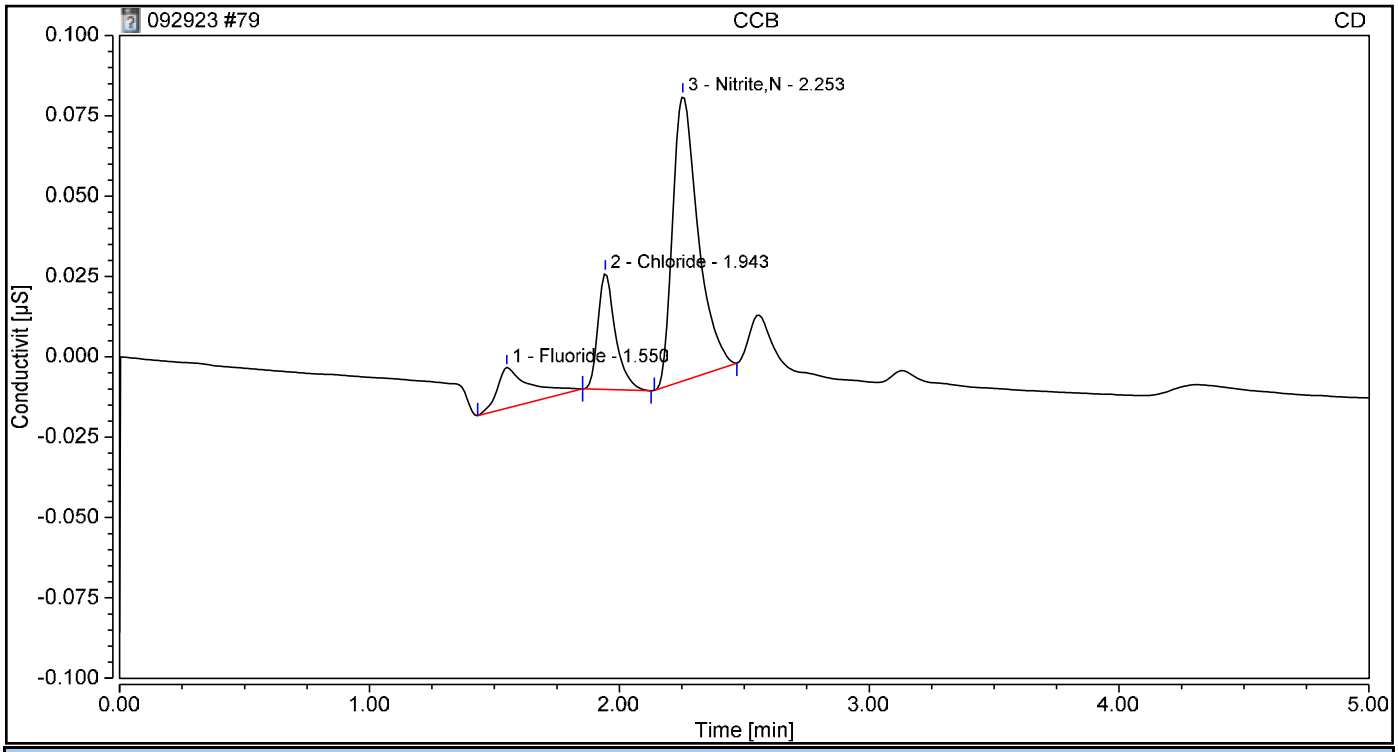
| No. | Peak Name | Retention Time min | Area µS*min | Height µS | Relative Area % | Relative Height % | Amount ppm |
|---|---|---|---|---|---|---|---|
| 1 | Fluoride | 1.563 | 2.298 | 23.467 | 10.13 | 9.64 | 10.0434 |
| 2 | Chloride | 1.943 | 7.846 | 100.445 | 34.59 | 41.27 | 49.4807 |
| 3 | Nitrite,N | 2.213 | 3.029 | 29.045 | 13.35 | 11.93 | 9.6953 |
| 4 | Sulfate | 2.533 | 5.174 | 50.211 | 22.81 | 20.63 | 48.2280 |
| 5 | Bromide | 2.743 | 0.364 | 4.933 | 1.60 | 2.03 | 7.8404 |
| 6 | Nitrate | 3.090 | 3.137 | 31.155 | 13.83 | 12.80 | 9.3128 |
| 7 | Chlorate | 3.283 | 0.084 | 1.395 | 0.37 | 0.57 | 3.0066 |
| n.a. | Phosphate | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. |
| 8 | | 4.170 | 0.753 | 2.759 | 3.32 | 1.13 | n.a. |
| **Total:** | | | **22.684** | **243.411** | **100.00** | **100.00** | |

# Chromatogram and Results

## Injection Details

| | | | |
|---|---|---|---|
| *Injection Name:* | **CCB** | *Run Time (min):* | **5.00** |
| *Vial Number:* | **R8** | *Injection Volume:* | **5.00** |
| *Injection Type:* | **Unknown** | *Channel:* | **CD** |
| *Calibration Level:* | | *Wavelength:* | **n.a.** |
| *Instrument Method:* | **Anions Program ISO37mM 150mm short 0.4 Const** | *Bandwidth:* | **n.a.** |
| *Processing Method:* | **Anions Processing Method ISO** | *Dilution Factor:* | **1.0000** |
| *Injection Date/Time:* | **29/Sep/23 21:14** | *Sample Weight:* | **1.0000** |

## Chromatogram




## Integration Results

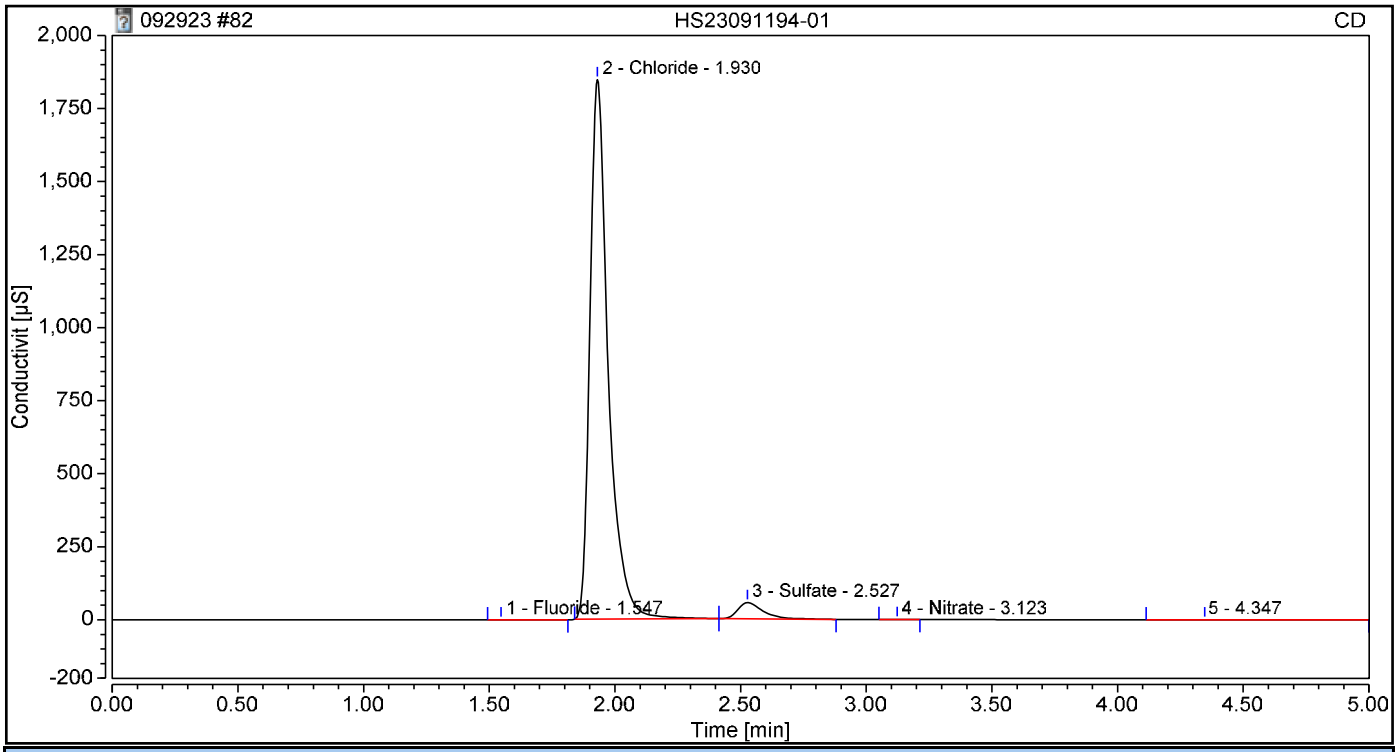
| No. | Peak Name | Retention Time min | Area µS*min | Height µS | Relative Area % | Relative Height % | Amount ppm |
|---|---|---|---|---|---|---|---|
| 1 | Fluoride | 1.550 | 0.002 | 0.013 | 12.47 | 9.20 | 0.0744 |
| 2 | Chloride | 1.943 | 0.003 | 0.036 | 19.10 | 26.33 | 0.1786 |
| 3 | Nitrite,N | 2.253 | 0.011 | 0.089 | 68.42 | 64.47 | 0.0360 |
| n.a. | Sulfate | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. |
| n.a. | Bromide | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. |
| n.a. | Nitrate | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. |
| n.a. | Chlorate | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. |
| n.a. | Phosphate | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. |
| **Total:** | | | **0.015** | **0.138** | **100.00** | **100.00** | |

# Chromatogram and Results

## Injection Details

| | | | |
|---|---|---|---|
| *Injection Name:* | **HS23091194-01** | *Run Time (min):* | **5.00** |
| *Vial Number:* | **GB4** | *Injection Volume:* | **5.00** |
| *Injection Type:* | **Unknown** | *Channel:* | **CD** |
| *Calibration Level:* | | *Wavelength:* | **n.a.** |
| *Instrument Method:* | **Anions Program ISO37mM 150mm short 0.4 Const** | *Bandwidth:* | **n.a.** |
| *Processing Method:* | **Anions Processing Method ISO** | *Dilution Factor:* | **1.0000** |
| *Injection Date/Time:* | **29/Sep/23 21:31** | *Sample Weight:* | **1.0000** |

## Chromatogram




## Integration Results

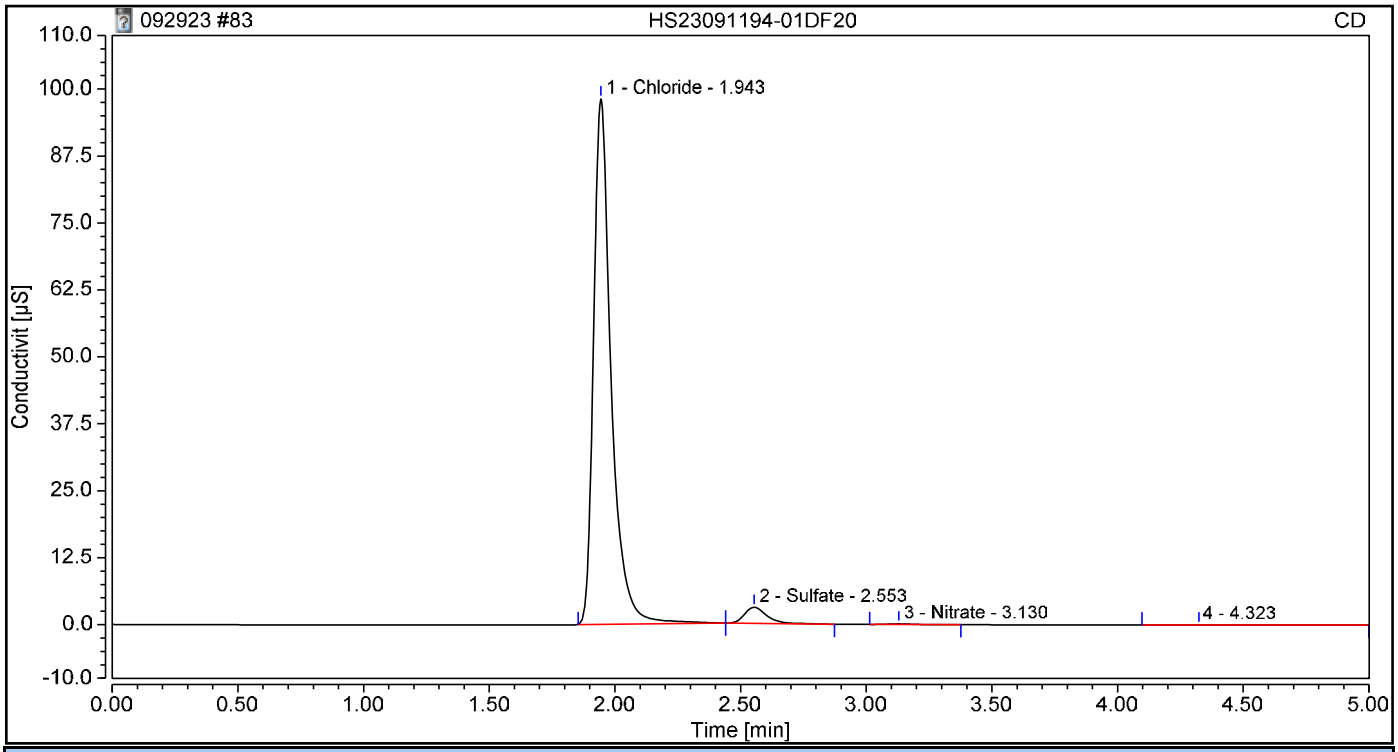
| No. | Peak Name | Retention Time min | Area µS*min | Height µS | Relative Area % | Relative Height % | Amount ppm |
|---|---|---|---|---|---|---|---|
| 1 | Fluoride | 1.547 | 0.017 | 0.219 | 0.01 | 0.01 | 0.1402 |
| 2 | Chloride | 1.930 | 155.529 | 1846.560 | 95.98 | 97.06 | 977.8359 |
| n.a. | Nitrite,N | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. |
| 3 | Sulfate | 2.527 | 6.443 | 55.634 | 3.98 | 2.92 | 60.0201 |
| n.a. | Bromide | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. |
| 4 | Nitrate | 3.123 | 0.002 | 0.032 | 0.00 | 0.00 | 0.0246 |
| n.a. | Chlorate | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. |
| n.a. | Phosphate | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. |
| 5 | | 4.347 | 0.057 | 0.135 | 0.04 | 0.01 | n.a. |
| **Total:** | | | **162.048** | **1902.579** | **100.00** | **100.00** | |

# Chromatogram and Results

## Injection Details

| | | | |
|---|---|---|---|
| *Injection Name:* | **HS23091194-01DF20** | *Run Time (min):* | **5.00** |
| *Vial Number:* | **GB5** | *Injection Volume:* | **5.00** |
| *Injection Type:* | **Unknown** | *Channel:* | **CD** |
| *Calibration Level:* | | *Wavelength:* | **n.a.** |
| *Instrument Method:* | **Anions Program ISO37mM 150mm short 0.4 Const** | *Bandwidth:* | **n.a.** |
| *Processing Method:* | **Anions Processing Method ISO** | *Dilution Factor:* | **20.0000** |
| *Injection Date/Time:* | **29/Sep/23 21:37** | *Sample Weight:* | **1.0000** |

## Chromatogram




## Integration Results

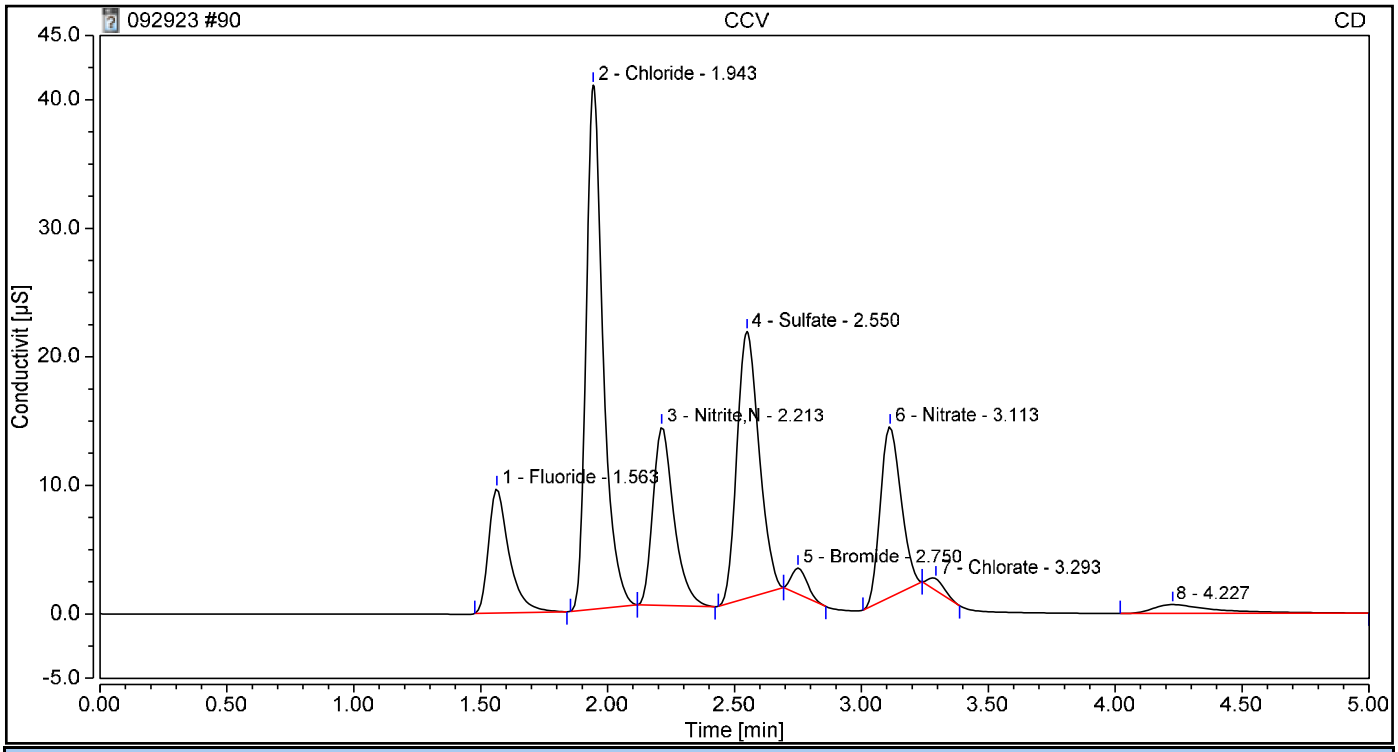
| No. | Peak Name | Retention Time min | Area µS*min | Height µS | Relative Area % | Relative Height % | Amount ppm |
|---|---|---|---|---|---|---|---|
| n.a. | Fluoride | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. |
| 1 | Chloride | 1.943 | 7.944 | 98.082 | 95.91 | 96.86 | 1001.9528 |
| n.a. | Nitrite,N | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. |
| 2 | Sulfate | 2.553 | 0.314 | 3.015 | 3.79 | 2.98 | 61.2059 |
| n.a. | Bromide | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. |
| 3 | Nitrate | 3.130 | 0.014 | 0.136 | 0.17 | 0.13 | 1.1878 |
| n.a. | Chlorate | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. |
| n.a. | Phosphate | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. |
| 4 | | 4.323 | 0.010 | 0.026 | 0.12 | 0.03 | n.a. |
| **Total:** | | | **8.282** | **101.259** | **100.00** | **100.00** | |

# Chromatogram and Results

## Injection Details

| | | | |
|---|---|---|---|
| *Injection Name:* | **CCV** | *Run Time (min):* | **5.00** |
| *Vial Number:* | **R1** | *Injection Volume:* | **5.00** |
| *Injection Type:* | **Unknown** | *Channel:* | **CD** |
| *Calibration Level:* | | *Wavelength:* | **n.a.** |
| *Instrument Method:* | **Anions Program ISO37mM 150mm short 0.4 Const** | *Bandwidth:* | **n.a.** |
| *Processing Method:* | **Anions Processing Method ISO** | *Dilution Factor:* | **1.0000** |
| *Injection Date/Time:* | **29/Sep/23 22:52** | *Sample Weight:* | **1.0000** |

## Chromatogram




## Integration Results

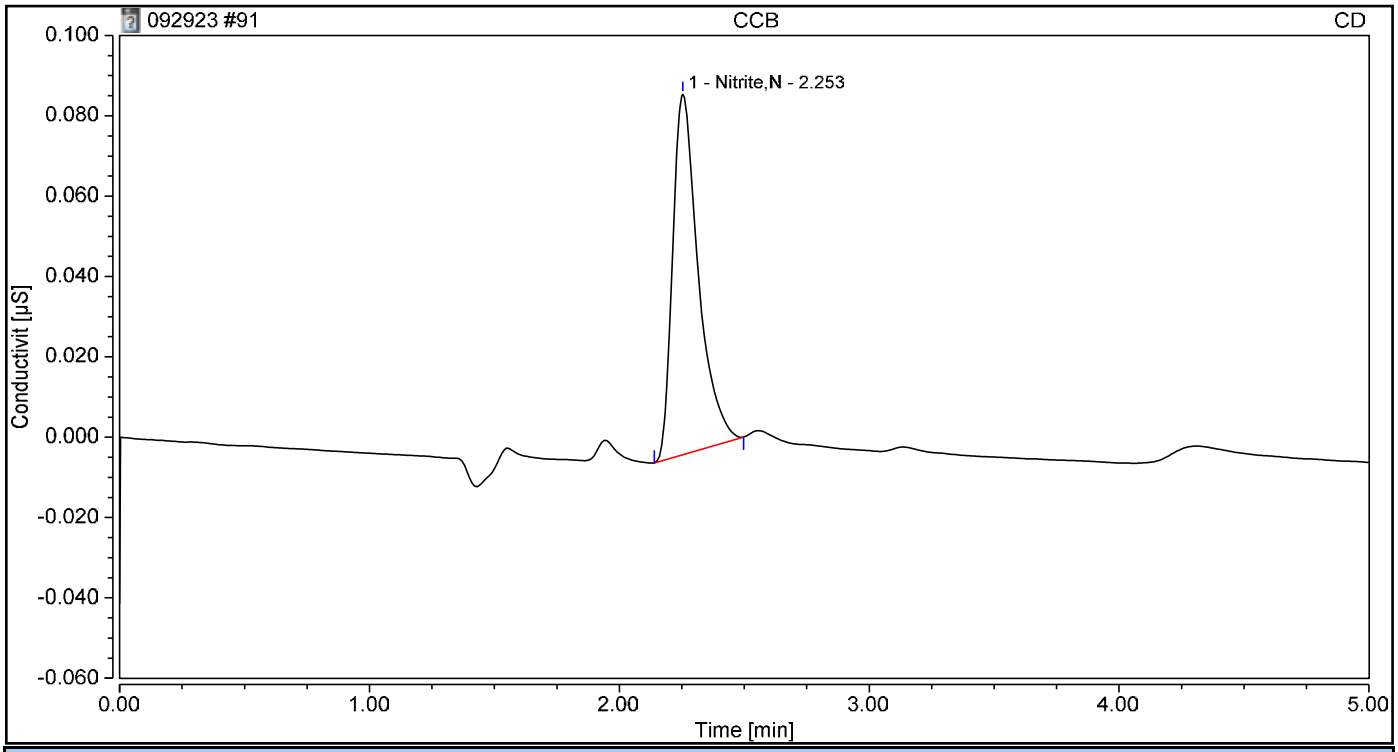
| No. | Peak Name | Retention Time min | Area µS*min | Height µS | Relative Area % | Relative Height % | Amount ppm |
|---|---|---|---|---|---|---|---|
| 1 | Fluoride | 1.563 | 0.901 | 9.676 | 9.85 | 9.49 | 3.9186 |
| 2 | Chloride | 1.943 | 3.157 | 40.778 | 34.51 | 40.01 | 20.0023 |
| 3 | Nitrite,N | 2.213 | 1.334 | 13.895 | 14.59 | 13.63 | 3.9807 |
| 4 | Sulfate | 2.550 | 2.086 | 20.717 | 22.80 | 20.32 | 19.5275 |
| 5 | Bromide | 2.750 | 0.145 | 2.008 | 1.59 | 1.97 | 3.2681 |
| 6 | Nitrate | 3.113 | 1.262 | 13.248 | 13.80 | 13.00 | 3.7583 |
| 7 | Chlorate | 3.293 | 0.065 | 0.915 | 0.71 | 0.90 | 2.3087 |
| n.a. | Phosphate | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. |
| 8 | | 4.227 | 0.197 | 0.693 | 2.15 | 0.68 | n.a. |
| **Total:** | | | **9.147** | **101.930** | **100.00** | **100.00** | |

# Chromatogram and Results

## Injection Details

| | | | |
|---|---|---|---|
| *Injection Name:* | **CCB** | *Run Time (min):* | **5.00** |
| *Vial Number:* | **R4** | *Injection Volume:* | **5.00** |
| *Injection Type:* | **Unknown** | *Channel:* | **CD** |
| *Calibration Level:* | | *Wavelength:* | **n.a.** |
| *Instrument Method:* | **Anions Program ISO37mM 150mm short 0.4 Const** | *Bandwidth:* | **n.a.** |
| *Processing Method:* | **Anions Processing Method ISO** | *Dilution Factor:* | **1.0000** |
| *Injection Date/Time:* | **29/Sep/23 23:03** | *Sample Weight:* | **1.0000** |

## Chromatogram




## Integration Results

| No. | Peak Name | Retention Time min | Area µS*min | Height µS | Relative Area % | Relative Height % | Amount ppm |
|---|---|---|---|---|---|---|---|
| n.a. | Fluoride | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. |
| n.a. | Chloride | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. |
| 1 | Nitrite,N | 2.253 | 0.011 | 0.090 | 100.00 | 100.00 | 0.0364 |
| n.a. | Sulfate | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. |
| n.a. | Bromide | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. |
| n.a. | Nitrate | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. |
| n.a. | Chlorate | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. |
| n.a. | Phosphate | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. |
| **Total:** | | | **0.011** | **0.090** | **100.00** | **100.00** | |

# HS23081965 GROUNDWATER TREATMENT PLANT WEEKLY SAMPLES Cover Page

ALS WO# HS23081965

ALS Environmental
ALS Group USA, Corp
10450 Stancliff Road, Suite 210
Houston, TX 77099
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**F :** +1 281 530 5887
**www.alsglobal.com**

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Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887
alsglobal.com

# WorkOrder: HS23081965

## GROUNDWATER TREATMENT PLANT WEEKLY SAMPLES

**Bhate Environmental Associates, Inc.**

Marcia Olive
445 Union Blvd Ste 129
Lakewood CO 80228

**06-Sep-2023**

# HS23081965 GROUNDWATER TREATMENT PLANT WEEKLY SAMPLES Final

ALS WO# HS23081965

10450 Stancliff Rd. Suite 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887

September 08, 2023

Marcia Olive
Bhate Environmental Associates, Inc.
445 Union Blvd Ste 129
Lakewood, CO 80228

Work Order: **HS23081965**

Laboratory Results for: **GROUNDWATER TREATMENT PLANT WEEKLY SAMPLES**

Dear Marcia Olive,

ALS Environmental received 3 sample(s) on Aug 31, 2023 for the analysis presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

**Generated By: JUMOKE.LAWAL**
James Guin

**ALS Houston, US** Date: 08-Sep-23

**Client:** Bhate Environmental Associates, Inc.
**Project:** GROUNDWATER TREATMENT PLANT WEEKLY SAMPLES
**Work Order:** HS23081965

## SAMPLE SUMMARY

| Lab Samp ID | Client Sample ID | Matrix | TagNo | Collection Date | Date Received | Hold |
|---|---|---|---|---|---|---|
| HS23081965-01 | LH18/24-SP650_083023 | Water | | 30-Aug-2023 13:00 | 31-Aug-2023 09:50 | ☐ |
| HS23081965-02 | LH18/24-SP650_083023_BIX | Water | | 30-Aug-2023 13:00 | 31-Aug-2023 09:50 | ☐ |
| HS23081965-03 | LH18/24-SP650_083023_AIX | Water | | 30-Aug-2023 13:00 | 31-Aug-2023 09:50 | ☐ |

**ALS Houston, US** Date: 08-Sep-23

**Client:** Bhate Environmental Associates, Inc. **CASE NARRATIVE**
**Project:** GROUNDWATER TREATMENT PLANT WEEKLY SAMPLES
**Work Order:** HS23081965

## Work Order Comments

• The analysis for Perchlorate was subcontracted to ALS Houston High-Res Lab. Final report attached

## WetChemistry by Method E350.3

### Batch ID: R445782

• The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

## WetChemistry by Method E415.1

### Batch ID: R445651

**Sample ID: HS23081428-04MS**

• MS is for an unrelated sample

## WetChemistry by Method E365.3

### Batch ID: R445311

• The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

**ALS Houston, US** Date: 08-Sep-23

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**
Project: GROUNDWATER TREATMENT PLANT WEEKLY SAMPLES WorkOrder:HS23081965
Sample ID: LH18/24-SP650_083023 Lab ID:HS23081965-01
Collection Date: 30-Aug-2023 13:00 Matrix:Water

| ANALYSES | RESULT | QUAL | DL | LOD | LOQ | UNITS | DILUTION FACTOR | DATE ANALYZED |
|---|---|---|---|---|---|---|---|---|
| **AMMONIA AS N BY E350.3(ISE)** | | **Method:E350.3** | | | | | | Analyst: AB |
| **Nitrogen, Ammonia (As N)** | **13** | a | **0.10** | **0.20** | **0.20** | **mg/L** | 1 | 08-Sep-2023 09:18 |
| **ORTHO PHOSPHATE (PO4) AS P BY E365.3-1978** | | **Method:E365.3** | | | | | | Analyst: AB |
| **Phosphorus, Total Orthophosphate (As P)** | **2.71** | a | **0.0500** | **0.125** | **0.125** | **mg/L** | 5 | 31-Aug-2023 15:14 |
| **TOTAL ORGANIC CARBON BY E415.1** | | **Method:E415.1** | | | | | | Analyst: DW |
| **Organic Carbon, Total** | **2.97** | a | **0.500** | **1.00** | **1.00** | **mg/L** | 1 | 06-Sep-2023 17:23 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.



RIGHT SOLUTIONS | RIGHT PARTNER

**ALS Houston, US** Date: 08-Sep-23

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**

Project: GROUNDWATER TREATMENT PLANT WEEKLY SAMPLES WorkOrder:HS23081965

Sample ID: LH18/24-SP650_083023_BIX Lab ID:HS23081965-02

Collection Date: 30-Aug-2023 13:00 Matrix:Water

| ANALYSES | RESULT | QUAL | DL | LOD | LOQ | UNITS | DILUTION FACTOR | DATE ANALYZED |
|---|---|---|---|---|---|---|---|---|
| **SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)** | | **Method:NA** | | | | | | Analyst: SUB |
| Subcontract Analysis | See Attached | | 0 | 0 | | NA | 1 | 01-Sep-2023 09:37 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.



RIGHT SOLUTIONS | RIGHT PARTNER

**ALS Houston, US** Date: 08-Sep-23

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**

Project: GROUNDWATER TREATMENT PLANT WEEKLY SAMPLES WorkOrder:HS23081965

Sample ID: LH18/24-SP650_083023_AIX Lab ID:HS23081965-03

Collection Date: 30-Aug-2023 13:00 Matrix:Water

| ANALYSES | RESULT | QUAL | DL | LOD | LOQ | UNITS | DILUTION FACTOR | DATE ANALYZED |
|---|---|---|---|---|---|---|---|---|
| **SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)** | | **Method:NA** | | | | | | Analyst: SUB |
| Subcontract Analysis | See Attached | | 0 | 0 | | NA | 1 | 01-Sep-2023 09:37 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.



RIGHT SOLUTIONS | RIGHT PARTNER

**ALS Houston, US** Date: 08-Sep-23

**Client:** Bhate Environmental Associates, Inc.
**Project:** GROUNDWATER TREATMENT PLANT WEEKLY SAMPLES
**WorkOrder:** HS23081965

**DATES REPORT**

| Sample ID | Client Samp ID | Collection Date | Leachate Date | Prep Date | Analysis Date | DF |
|---|---|---|---|---|---|---|
| **Batch ID:** R445311 ( 0 ) | **Test Name :** ORTHO PHOSPHATE (PO4) AS P BY E365.3-1978 | | | | **Matrix:** Water | |
| HS23081965-01 | LH18/24-SP650_083023 | 30 Aug 2023 13:00 | | | 31 Aug 2023 15:14 | 5 |
| **Batch ID:** R445366 ( 0 ) | **Test Name :** SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850) | | | | **Matrix:** Water | |
| HS23081965-02 | LH18/24-SP650_083023_BIX | 30 Aug 2023 13:00 | | | 01 Sep 2023 09:37 | 1 |
| HS23081965-03 | LH18/24-SP650_083023_AIX | 30 Aug 2023 13:00 | | | 01 Sep 2023 09:37 | 1 |
| **Batch ID:** R445651 ( 0 ) | **Test Name :** TOTAL ORGANIC CARBON BY E415.1 | | | | **Matrix:** Water | |
| HS23081965-01 | LH18/24-SP650_083023 | 30 Aug 2023 13:00 | | | 06 Sep 2023 17:23 | 1 |
| **Batch ID:** R445782 ( 0 ) | **Test Name :** AMMONIA AS N BY E350.3(ISE) | | | | **Matrix:** Water | |
| HS23081965-01 | LH18/24-SP650_083023 | 30 Aug 2023 13:00 | | | 08 Sep 2023 09:18 | 1 |

**ALS Houston, US** Date: 08-Sep-23

**Client:** Bhate Environmental Associates, Inc.
**Project:** GROUNDWATER TREATMENT PLANT WEEKLY SAMPLES
**WorkOrder:** HS23081965

**QC BATCH REPORT**

**Batch ID:** R445311 ( 0 ) **Instrument:** UV-2450 **Method:** ORTHO PHOSPHATE (PO4) AS P BY E365.3-1978

**MBLK** Sample ID: **MBLK-R445311** Units: **mg/L** Analysis Date: **31-Aug-2023 15:14**
Client ID: Run ID: **UV-2450_445311** SeqNo: **7520560** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Phosphorus, Total Orthophosphate (As P) | 0.0250 | 0.0250 | | | | | | | | U |

**LCS** Sample ID: **LCS-R445311** Units: **mg/L** Analysis Date: **31-Aug-2023 15:14**
Client ID: Run ID: **UV-2450_445311** SeqNo: **7520559** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Phosphorus, Total Orthophosphate (As P) | 0.257 | 0.0250 | 0.25 | 0 | 103 | 85 - 115 | | | | |

**MS** Sample ID: **HS23081965-01MS** Units: **mg/L** Analysis Date: **31-Aug-2023 15:14**
Client ID: **LH18/24-SP650_083023** Run ID: **UV-2450_445311** SeqNo: **7520562** PrepDate: DF: **5**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Phosphorus, Total Orthophosphate (As P) | 3.88 | 0.125 | 1.25 | 2.71 | 93.6 | 80 - 120 | | | | |

**MSD** Sample ID: **HS23081965-01MSD** Units: **mg/L** Analysis Date: **31-Aug-2023 15:14**
Client ID: **LH18/24-SP650_083023** Run ID: **UV-2450_445311** SeqNo: **7520561** PrepDate: DF: **5**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Phosphorus, Total Orthophosphate (As P) | 4.035 | 0.125 | 1.25 | 2.71 | 106 | 80 - 120 | 3.88 | 3.92 | 20 | |

**The following samples were analyzed in this batch:** HS23081965-01



RIGHT SOLUTIONS | RIGHT PARTNER

**ALS Houston, US** Date: 08-Sep-23

**Client:** Bhate Environmental Associates, Inc.
**Project:** GROUNDWATER TREATMENT PLANT WEEKLY SAMPLES
**WorkOrder:** HS23081965

**QC BATCH REPORT**

**Batch ID: R445651 ( 0 )** **Instrument: TOC_04** **Method: TOTAL ORGANIC CARBON BY E415.1**

**MBLK** Sample ID: **MBLK-09062023** Units: **mg/L** Analysis Date: **06-Sep-2023 15:20**
Client ID: Run ID: **TOC_04_445651** SeqNo: **7528610** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Organic Carbon, Total | 1.00 | 1.00 | | | | | | | | U |

**LCS** Sample ID: **LCS-09062023** Units: **mg/L** Analysis Date: **06-Sep-2023 15:34**
Client ID: Run ID: **TOC_04_445651** SeqNo: **7528611** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Organic Carbon, Total | 10.25 | 1.00 | 10 | 0 | 102 | 85 - 115 | | | | |

**LCSD** Sample ID: **LCSD-09062023** Units: **mg/L** Analysis Date: **06-Sep-2023 15:47**
Client ID: Run ID: **TOC_04_445651** SeqNo: **7528612** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Organic Carbon, Total | 10.28 | 1.00 | 10 | 0 | 103 | 85 - 115 | 10.25 | 0.292 | 20 | |

**MS** Sample ID: **HS23081428-04MS** Units: **mg/L** Analysis Date: **06-Sep-2023 17:10**
Client ID: Run ID: **TOC_04_445651** SeqNo: **7528614** PrepDate: DF: **10**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Organic Carbon, Total | 183.6 | 10.0 | 100 | 132 | 51.6 | 80 - 120 | | | | S |

**The following samples were analyzed in this batch:** HS23081965-01

**ALS Houston, US** Date: 08-Sep-23

**Client:** Bhate Environmental Associates, Inc.
**Project:** GROUNDWATER TREATMENT PLANT WEEKLY SAMPLES
**WorkOrder:** HS23081965

**QC BATCH REPORT**

**Batch ID: R445782 ( 0 )** **Instrument: WetChem_HS** **Method: AMMONIA AS N BY E350.3(ISE)**

**MBLK** Sample ID: **MBLK-R445782** Units: **mg/L** Analysis Date: **08-Sep-2023 09:18**
Client ID: Run ID: **WetChem_HS_445782** SeqNo: **7531357** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Nitrogen, Ammonia (As N) | 0.20 | 0.20 | | | | | | | | U |

**LCS** Sample ID: **LCS-R445782** Units: **mg/L** Analysis Date: **08-Sep-2023 09:18**
Client ID: Run ID: **WetChem_HS_445782** SeqNo: **7531356** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Nitrogen, Ammonia (As N) | 9.296 | 0.20 | 10 | 0 | 93.0 | 80 - 120 | | | | |

**MS** Sample ID: **HS23081746-01MS** Units: **mg/L** Analysis Date: **08-Sep-2023 09:18**
Client ID: Run ID: **WetChem_HS_445782** SeqNo: **7531359** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Nitrogen, Ammonia (As N) | 10.03 | 0.20 | 10 | 1.102 | 89.2 | 80 - 120 | | | | |

**MSD** Sample ID: **HS23081746-01MSD** Units: **mg/L** Analysis Date: **08-Sep-2023 09:18**
Client ID: Run ID: **WetChem_HS_445782** SeqNo: **7531358** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Nitrogen, Ammonia (As N) | 10.15 | 0.20 | 10 | 1.102 | 90.5 | 80 - 120 | 10.03 | 1.25 | 20 | |

**The following samples were analyzed in this batch:** HS23081965-01



RIGHT SOLUTIONS | RIGHT PARTNER

**ALS Houston, US** Date: 08-Sep-23

**Client:** Bhate Environmental Associates, Inc.
**Project:** GROUNDWATER TREATMENT PLANT WEEKLY SAMPLES
**WorkOrder:** **HS23081965**

**QUALIFIERS, ACRONYMS, UNITS**

| Qualifier | Description |
|---|---|
| * | Value exceeds Regulatory Limit |
| a | Not accredited |
| B | Analyte detected in the associated Method Blank above the Reporting Limit |
| E | Value above quantitation range |
| H | Analyzed outside of Holding Time |
| J | Analyte detected below quantitation limit |
| M | Manually integrated, see raw data for justification |
| n | Not offered for accreditation |
| ND | Not Detected at the Reporting Limit |
| O | Sample amount is > 4 times amount spiked |
| P | Dual Column results percent difference > 40% |
| R | RPD above laboratory control limit |
| S | Spike Recovery outside laboratory control limits |
| U | Analyzed but not detected above the MDL/SDL |

| Acronym | Description |
|---|---|
| DCS | Detectability Check Study |
| DUP | Method Duplicate |
| LCS | Laboratory Control Sample |
| LCSD | Laboratory Control Sample Duplicate |
| MBLK | Method Blank |
| MDL | Method Detection Limit |
| MQL | Method Quantitation Limit |
| MS | Matrix Spike |
| MSD | Matrix Spike Duplicate |
| PDS | Post Digestion Spike |
| PQL | Practical Quantitaion Limit |
| SD | Serial Dilution |
| SDL | Sample Detection Limit |
| TRRP | Texas Risk Reduction Program |



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## CERTIFICATIONS,ACCREDITATIONS & LICENSES

| Agency | Number | Expire Date |
|---|---|---|
| Arkansas | 88-00356 | 27-Mar-2024 |
| California | 2919; 2024 | 30-Apr-2024 |
| Dept of Defense | L23-358 | 31-May-2025 |
| Florida | E87611-38 | 30-Jun-2024 |
| Illinois | 2000322023-11 | 30-Jun-2024 |
| Kansas | E-10352 2023-2024 | 31-Jul-2024 |
| Louisiana | 03087 2023-2024 | 30-Jun-2024 |
| Maryland | 343; 2023-2024 | 30-Jun-2024 |
| North Carolina | 624-2023 | 31-Dec-2023 |
| North Dakota | R-193 2023-2024 | 30-Apr-2024 |
| Texas | T104704231-23-31 | 30-Apr-2024 |
| Utah | TX026932023-14 | 31-Jul-2024 |



RIGHT SOLUTIONS | RIGHT PARTNER

**ALS Houston, US** Date: 08-Sep-23

## Sample Receipt Checklist

**Work Order ID:** HS23081965 **Date/Time Received:** 31-Aug-2023 09:50

**Client Name:** Bhate Environmental **Received by:** Paresh M. Giga

| **Completed By:** | /S/ Paresh M. Giga | 31-Aug-2023 10:58 | **Reviewed by:** | /S/ James Guin | 31-Aug-2023 14:18 |
|---|---|---|---|---|---|
| | eSignature | Date/Time | | eSignature | Date/Time |

Matrices: **Water** Carrier name: **FedEx Priority Overnight**

| | | | |
|---|---|---|---|
| Shipping container/cooler in good condition? | Yes ☑ | No ☐ | Not Present ☐ |
| Custody seals intact on shipping container/cooler? | Yes ☑ | No ☐ | Not Present ☐ |
| Custody seals intact on sample bottles? | Yes ☐ | No ☐ | Not Present ☑ |
| VOA/TX1005/TX1006 Solids in hermetically sealed vials? | Yes ☐ | No ☐ | Not Present ☑ |
| Chain of custody present? | Yes ☑ | No ☐ | 1 Page(s) |
| Chain of custody signed when relinquished and received? | Yes ☑ | No ☐ | COC IDs:none |
| Samplers name present on COC? | Yes ☑ | No ☐ | |
| Chain of custody agrees with sample labels? | Yes ☑ | No ☐ | |
| Samples in proper container/bottle? | Yes ☑ | No ☐ | |
| Sample containers intact? | Yes ☑ | No ☐ | |
| Sufficient sample volume for indicated test? | Yes ☑ | No ☐ | |
| All samples received within holding time? | Yes ☑ | No ☐ | |
| Container/Temp Blank temperature in compliance? | Yes ☑ | No ☐ | |

| | | |
|---|---|---|
| Temperature(s)/Thermometer(s): | 2.8C/2.7C U/C | IR31 |
| Cooler(s)/Kit(s): | 49573 | |
| Date/Time sample(s) sent to storage: | 8/31/23 11:10 | |

| | | | |
|---|---|---|---|
| Water - VOA vials have zero headspace? | Yes ☐ | No ☐ | No VOA vials submitted ☑ |
| Water - pH acceptable upon receipt? | Yes ☑ | No ☐ | N/A ☐ |
| pH adjusted? | Yes ☐ | No ☑ | N/A ☐ |
| pH adjusted by: | | | |

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

Corrective Action:

# CHAIN OF CUSTODY

Name Of Lab Shipping To: ALS 10450 Stancliff Rd. Suite 210 Horston, TX. 77099 (281) 530-5656 ATTN: James Guin

Page 1 of 1

**Project:** BHATE
LONGHORN ARMY AMMN. PLANT (LHAAP)
GROUNDWATER TREATMENT PLANT (GWTP)
KARNACK, TEXAS

**Project No.** JVPCIBH.0001

**Job:** GROUNDWATER TREATMENT PLANT WEEKLY SAMPLES

**Prepared By:** Scott Beesinger

**P.O. Number**

**HS23081965**

Bhate Environmental Associates, Inc.
GROUNDWATER TREATMENT PLANT WEEKLY SAM

| Field Sample I.D. | Sample Matrix | Date / Time | MS / MSD | No. OF CONTAINERS | Analyses: AMMONIA-N | TOTAL ORGANIC CARBON | ORTHO-PHOSPHATE | PERCHLORATE | Remarks (Preservatives, etc.) | Lab I.D.# |
|---|---|---|---|---|---|---|---|---|---|---|
| LH18/24-SP650_083023 | Water | 08/30/23 / 13:00 | | 3 | X | X | | | H2SO4 | |
| LH18/24-SP650_083023 | Water | 08/30/23 / 13:00 | | 1 | | | X | | NONE | |
| LH18/24-SP650_083023_BIX | Water | 08/30/23 / 13:00 | | 1 | | | | X | NONE | |
| LH18/24-SP650_083023_AIX | Water | 08/30/23 / 13:00 | | 1 | | | | X | NONE | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

Additional Remarks: **24 HR. TAT on Perchlorate Samples. Standard TAT on all other parameters**

| Relinquished By: | Date | Time | Received By: | Date | Time | Relinquished By: | Date | Time | Received By: | Date | Time |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Scott Beesinger | 08/30/23 | 13:30 | | 8/31/23 | 09:50 | | | | | | |

**For Lab Use Only**

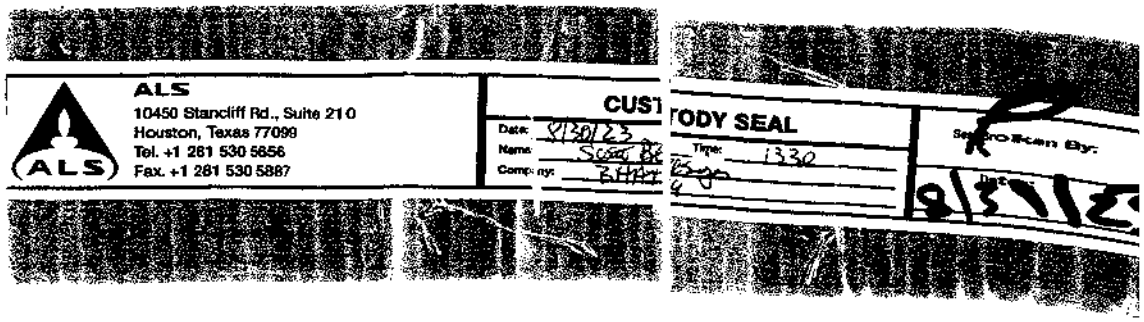
| Received At Lab By: | Date | Time | Airbill No. | Opened By: | Date | Time | Temp of Container | Seal No. | Condition |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |

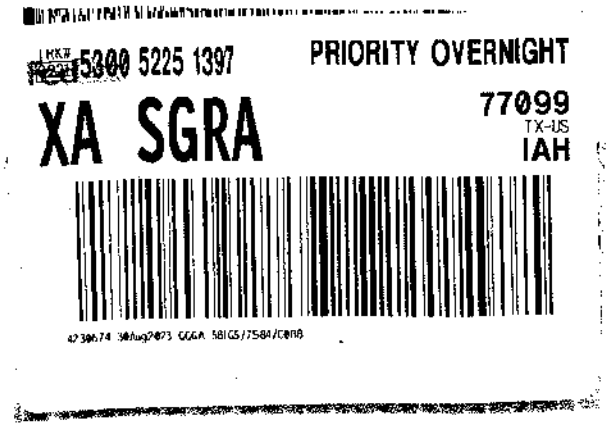
Remarks: -19573 2.8°C +31

(Word) S:\Forms\Chain of Custody - BiWeekly



RIGHT SOLUTIONS | RIGHT PARTNER






RIGHT SOLUTIONS | RIGHT PARTNER

# HS23081965 Wetchem NIT-AMM_W- E350.3 - ISE

ALS WO# HS23081965

ALS Laboratory Group

NIT_AMM_W_E350.3 ISE
NIT_AMM_W_ISE

Logbook :

# Ion Selective Electrode Logbook

| | | | | | |
|---|---|---|---|---|---|
| Analyst: AB | | | | Date: 09/01/23 | |
| Method: SM4500NH3-D/EPA 350.3 or SM4500 NH3 B-F | | | | | |
| Probe Calibration Date: 08/08/23 | | Cal Std ID: 322146403-10 | | Probe ID: NH3-8 | |
| Std Level | | mV | Conc., mg/L: | Sodium Thiosulfate ID: — | |
| STD 1 (mg/L): | | 0.198 | 125.4 | Std Level | mV / Conc., |
| STD 2 (mg/L): | | 1.008 | 99.0 | STD 4 (mg/L): | 10.003 / 38.0 |
| STD 3 (mg/L): | | 5.001 | 56.9 | STD 5 (mg/L): | 50.006 / -3.1 |
| LSC / MS Spike ID: 3100607504 | | | | ICAL Date & Slope: | 99.3 / -58.6 |
| ICV Cal STD ID: 322146403 | | | | | |
| DPD Reagent ID: 3100607513 | | | | | |

| WO # / SX # | Bottle # | Initial g or ml | Final Vol. ml | Dilution Factor | Initial Conc. mg/L | Final Conc. mg/L | Chlorine Check ( +/– ) | Comments |
|---|---|---|---|---|---|---|---|---|
| ICV | | 50mL | 50mL | | 9.309 | | | |
| ICB | | | | | 0.005 | | | |
| MBLK | | | | | 0.005 | | | |
| LCS | | | | | 9.296 | | – | |
| HS2308196-01 | | | | | 13.273 | | | |
| 383-2 | | | | | 13.369 | | | |
| 1746-01 | | | | | 1.102 | | | |
| 1746-01MS | | | | | 10.026 | | | |
| 1746-01MSD | | | | | 10.152 | | | |
| 1821-01 | | | | | 1.011 | | | |
| 1915-01 | | | | | 1.021 | | | |
| 994-01 | | | | | 1.046 | | | |
| CCV | | | | | 9.202 | | | |
| CCB | | | | | 0.008 | | – | |
| 087-04 | | | | 10x | 9.474 | | | |
| 249-01 | | | | | 0.961 | | | |
| 130-01 | | | | | 1.290 | | | |
| 174-01 | | | | | 1.375 | | | |
| 272-01 | | | | | 1.248 | | | |
| CCV 2 | | | | | 9.326 | | | |
| CCB 2 | | | | | 0.008 | | | |
| 1292-10 | | 50mL | 50mL | | 3.750 | | | |
| CCV 3 | | 50mL | 50mL | | 9.697 | | | |
| CCB 3 | | " | " | | 0.007 | | | |
| | | | | | | | | |

| Batch ID: | Reported By | Reviewed By: |
|---|---|---|
| 445782, 445987 | AB | |


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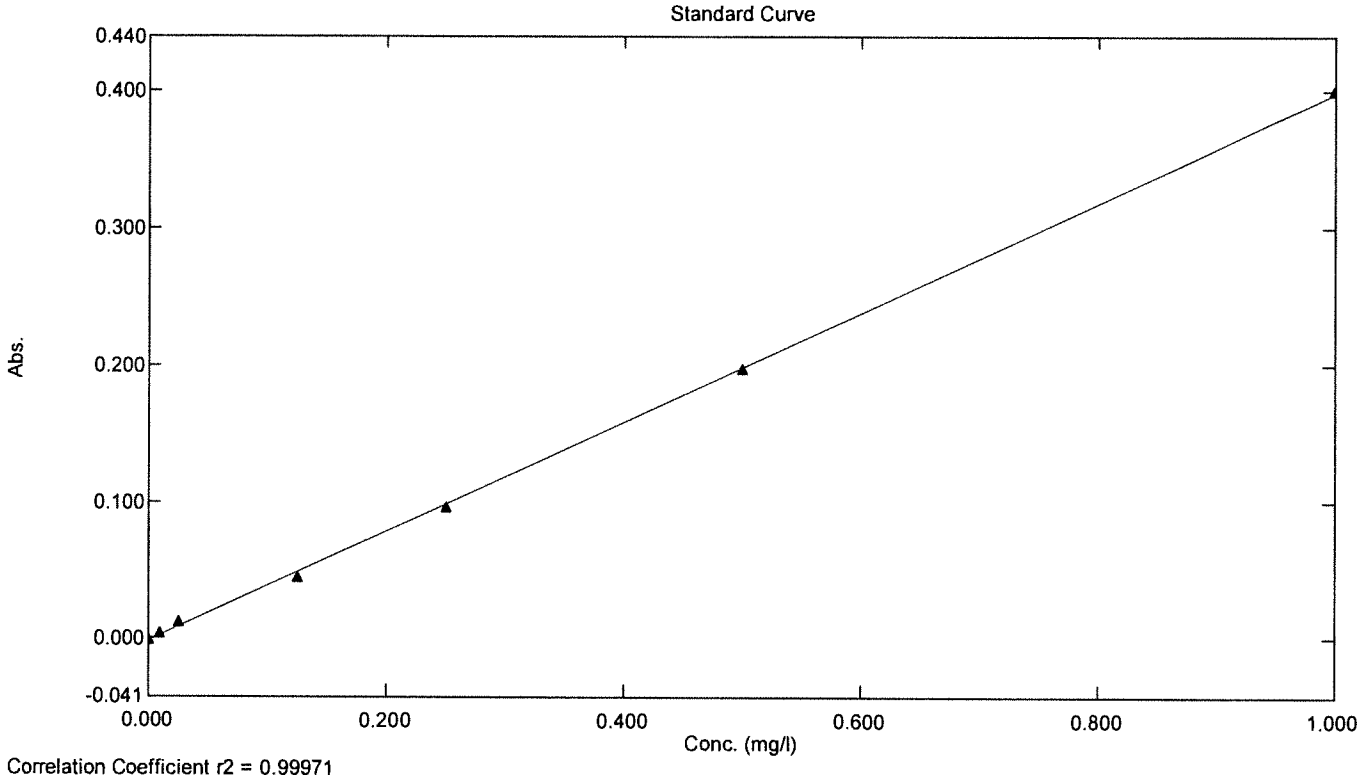
# HS23081965 Wetchem P-ORTHO

ALS WO# HS23081965

# Standard Table Report

09/01/2023 05:06:08 PM

File Name: C:\Program Files (x86)\Shimadzu\UVProbe\Data\P_ORTHO ( 365.3 METHOD)\2023\08312023_P_ORTHO_W.pho




Correlation Coefficient r2 = 0.99971

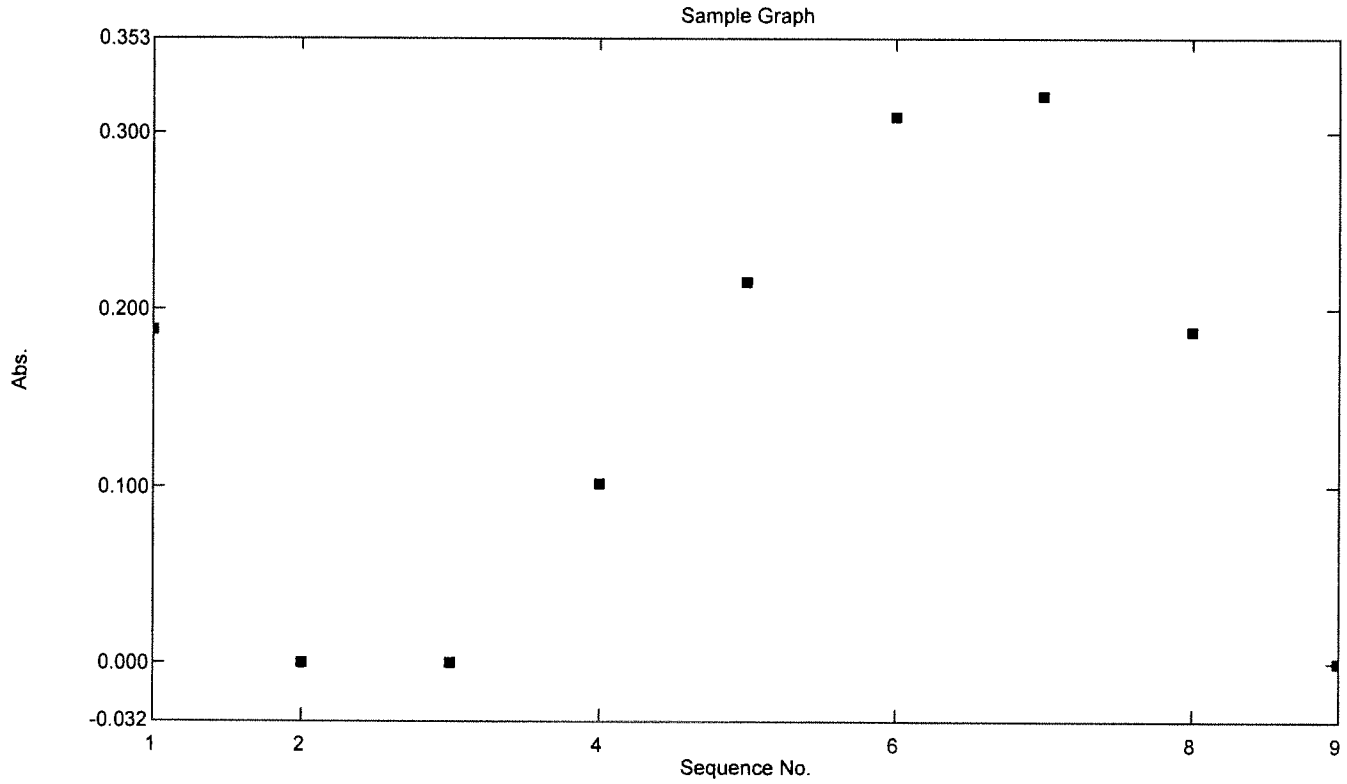
Standard Table

| | Sample ID | Type | Ex | Conc | WL650.0 | Wgt.Factor | Comments |
|---|---|---|---|---|---|---|---|
| 1 | STD1 | Standard | | 0.000 | -0.000 | 1.000 | |
| 2 | STD2 | Standard | | 0.010 | 0.005 | 1.000 | |
| 3 | STD3 | Standard | | 0.025 | 0.012 | 1.000 | |
| 4 | STD4 | Standard | | 0.125 | 0.045 | 1.000 | |
| 5 | STD5 | Standard | | 0.250 | 0.096 | 1.000 | |
| 6 | STD6 | Standard | | 0.500 | 0.197 | 1.000 | |
| 7 | STD7 | Standard | | 1.000 | 0.400 | 1.000 | |
| 8 | | | | | | | |

# Sample Table Report

09/01/2023 05:06:09 PM

File Name: C:\Program Files (x86)\Shimadzu\UVProbe\Data\P_ORTHO ( 365.3 METHOD)\2023\08312023_P_ORTHO_W.pho




Sample Table

| | Sample ID | Date | Time | Conc | WL650. | Comments |
|---|---|---|---|---|---|---|
| 1 | CCV | 08/31/2023 | 02:58:07 PM | 0.474 | 0.188 | 322145107 WC-24 |
| 2 | CCB | 08/31/2023 | 02:58:17 PM | 0.003 | -0.000 | 11N 3100606911 |
| 3 | MBLK | 08/31/2023 | 02:58:22 PM | 0.004 | 0.000 | A.MOLYBDATE 322143903 |
| 4 | LCS | 08/31/2023 | 02:59:24 PM | 0.257 | 0.101 | 322145107 WC-23 |
| 5 | HS23081965.01 | 08/31/2023 | 03:00:11 PM | 0.542 | 0.216 | DF=5X |
| 6 | HS23081965.01MS | 08/31/2023 | 03:01:26 PM | 0.776 | 0.309 | DF=5X |
| 7 | HS23081965.01MSD | 08/31/2023 | 03:03:51 PM | 0.807 | 0.321 | DF=5X |
| 8 | CCV2 | 08/31/2023 | 03:04:12 PM | 0.472 | 0.188 | A.ACID 322145906 |
| 9 | CCB2 | 08/31/2023 | 03:04:22 PM | 0.004 | 0.000 | |
| 10 | | | | | | |

# HS23081965 Wetchem TOC_W

ALS WO# HS23081965

C:\TOC-L\Data\2023_06_21_002.tlx

| | Type | Analysis | Sample Nam | Sample ID | Origin | Manual Diluti | Result | Notes | Status | Date / Time |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Standard | NPOC | CALIBRATI | | 06.21.2023. | 1.000 | | | Completed | 6/21/2023 6: |
| 2 | Unknown | NPOC | ICV | | 06.21.2023. | 1.000 | NPOC:7.77 | | Completed | 6/21/2023 6: |
| 3 | Unknown | NPOC | ICB | | 06.21.2023. | 1.000 | NPOC:0.01 | | Completed | 6/21/2023 7: |

C:\TOC-L\Data\2023_06_21_002.tlx

| | Vial |
|---|---|
| 1 | 60, 61, 62, 6 |
| 2 | 67 |
| 3 | 68 |

# TOC-Control L Report

2023_06_21_002.tlx

**Instr.Information**

Instrument Options: TOC/ASI/IC Unit/
Catalyst: Regular Sensitivity

**Cal. Curve**

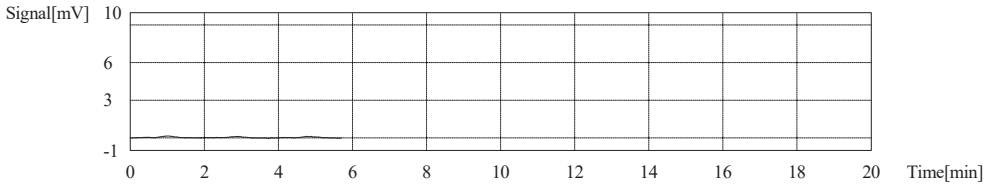
Sample Name: CALIBRATION
Sample ID:
Cal. Curve: 06.21.2023.2023_06_21_17_09_26.cal
Status: Completed

| Type | Anal. |
|---|---|
| Standard | NPOC |

Conc: 0.000mg/L

| No. | Area | Inj. Vol. | Aut. Dil. | Rem. | Ex. | Date / Time |
|---|---|---|---|---|---|---|
| 1 | 0.3327 | 50uL | 1.000 | ******* | | 6/21/2023 5:17:20 PM |
| 2 | 0.000 | 50uL | 1.000 | ******* | | 6/21/2023 5:19:28 PM |
| 3 | 0.4000 | 50uL | 1.000 | ******* | | 6/21/2023 5:21:36 PM |

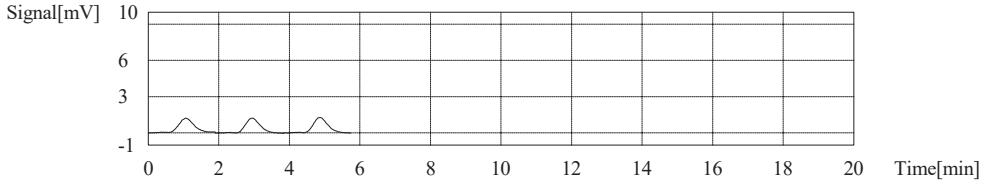
Acid Add. 0.000%
Sparge Gas Flow 80mL/min
Sp. Time 120.0sec
Mean Area 0.2442




Conc: 1.000mg/L

| No. | Area | Inj. Vol. | Aut. Dil. | Rem. | Ex. | Date / Time |
|---|---|---|---|---|---|---|
| 1 | 3.239 | 50uL | 1.000 | ******* | | 6/21/2023 5:29:24 PM |
| 2 | 3.486 | 50uL | 1.000 | ******* | | 6/21/2023 5:31:35 PM |
| 3 | 3.544 | 50uL | 1.000 | ******* | | 6/21/2023 5:33:43 PM |

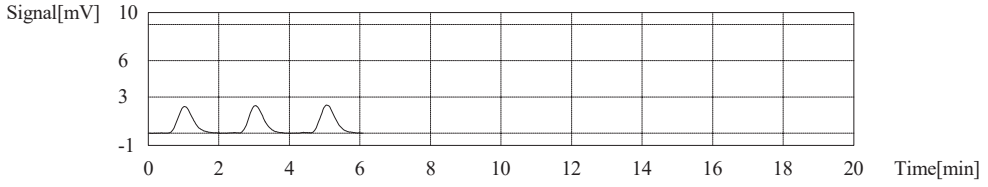
Acid Add. 0.000%
Sparge Gas Flow 80mL/min
Sp. Time 120.0sec
Mean Area 3.423




Conc: 2.000mg/L

| No. | Area | Inj. Vol. | Aut. Dil. | Rem. | Ex. | Date / Time |
|---|---|---|---|---|---|---|
| 1 | 6.496 | 50uL | 1.000 | ******* | | 6/21/2023 5:41:39 PM |
| 2 | 6.578 | 50uL | 1.000 | ******* | | 6/21/2023 5:43:54 PM |
| 3 | 6.676 | 50uL | 1.000 | ******* | | 6/21/2023 5:46:11 PM |

Acid Add. 0.000%
Sparge Gas Flow 80mL/min
Sp. Time 120.0sec
Mean Area 6.583



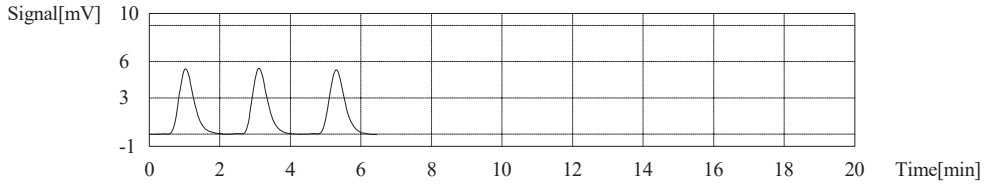
# TOC-Control L Report

2023_06_21_002.tlx

Conc: 5.000mg/L

| No. | Area | Inj. Vol. | Aut. Dil. | Rem. | Ex. | Date / Time |
|---|---|---|---|---|---|---|
| 1 | 15.80 | 50uL | 1.000 | ******* | | 6/21/2023 5:54:11 PM |
| 2 | 15.85 | 50uL | 1.000 | ******* | | 6/21/2023 5:56:36 PM |
| 3 | 16.15 | 50uL | 1.000 | ******* | | 6/21/2023 5:59:02 PM |

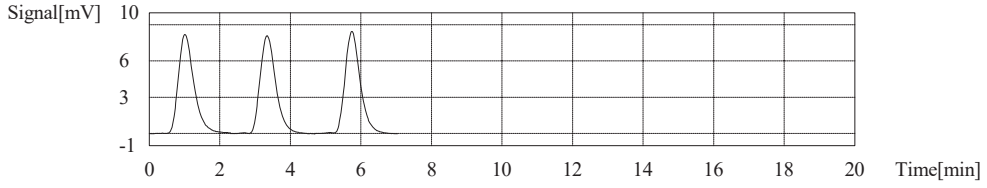
Acid Add. 0.000%
Sparge Gas Flow 80mL/min
Sp. Time 120.0sec
Mean Area 15.93




Conc: 10.00mg/L

| No. | Area | Inj. Vol. | Aut. Dil. | Rem. | Ex. | Date / Time |
|---|---|---|---|---|---|---|
| 1 | 24.91 | 50uL | 1.000 | ******* | | 6/21/2023 6:07:14 PM |
| 2 | 24.77 | 50uL | 1.000 | ******* | | 6/21/2023 6:09:54 PM |
| 3 | 25.05 | 50uL | 1.000 | ******* | | 6/21/2023 6:12:28 PM |

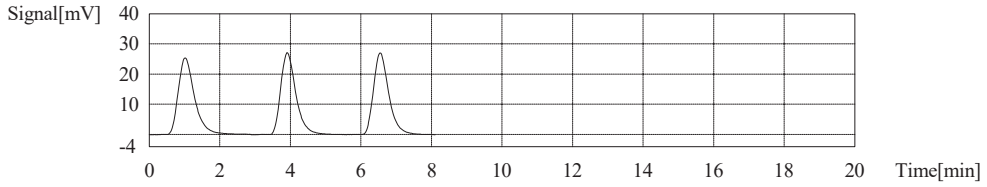
Acid Add. 0.000%
Sparge Gas Flow 80mL/min
Sp. Time 120.0sec
Mean Area 24.91




Conc: 25.00mg/L

| No. | Area | Inj. Vol. | Aut. Dil. | Rem. | Ex. | Date / Time |
|---|---|---|---|---|---|---|
| 1 | 80.93 | 50uL | 1.000 | ******* | | 6/21/2023 6:21:15 PM |
| 2 | 81.18 | 50uL | 1.000 | ******* | | 6/21/2023 6:24:07 PM |
| 3 | 81.22 | 50uL | 1.000 | ******* | | 6/21/2023 6:26:57 PM |

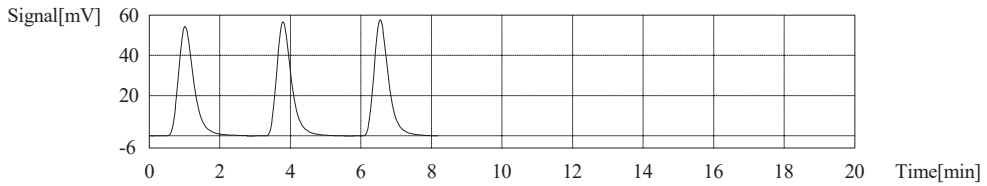
Acid Add. 0.000%
Sparge Gas Flow 80mL/min
Sp. Time 120.0sec
Mean Area 81.11




Conc: 50.00mg/L

| No. | Area | Inj. Vol. | Aut. Dil. | Rem. | Ex. | Date / Time |
|---|---|---|---|---|---|---|
| 1 | 163.2 | 50uL | 1.000 | ******* | | 6/21/2023 6:35:37 PM |
| 2 | 164.6 | 50uL | 1.000 | ******* | | 6/21/2023 6:38:38 PM |
| 3 | 165.0 | 50uL | 1.000 | ******* | | 6/21/2023 6:41:31 PM |

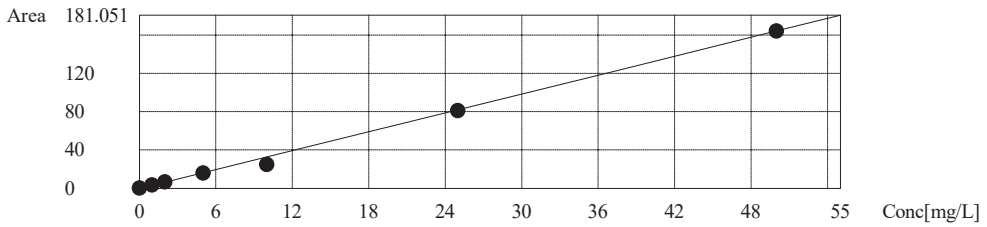
Acid Add. 0.000%
Sparge Gas Flow 80mL/min
Sp. Time 120.0sec
Mean Area 164.3



# TOC-Control L Report

2023_06_21_002.tlx

| | |
|---|---|
| Slope: | 3.292 |
| Intercept | 0.000 |
| r^2 | 0.9976 |
| r | 0.9988 |
| RSE(%) | N/A |
| Zero Shift | Yes |




**Sample**

| | |
|---|---|
| Sample Name: | ICV |
| Sample ID: | |
| Origin: | 06.21.2023.cal |
| Status | Completed |
| Chk. Result | |

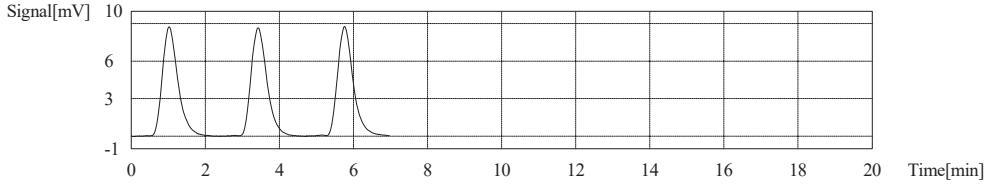
| Type | Anal. | Manual Dilution | Result |
|---|---|---|---|
| Unknown | NPOC | 1.000 | NPOC:7.778mg/L |

1. Det

Anal.: NPOC

| No. | Area | Conc. | Inj. Vol. | Aut. Dil. | Ex. | Cal. Curve | Date / Time |
|---|---|---|---|---|---|---|---|
| 1 | 25.58 | 7.771mg/L | 50uL | 1.000 | | 06.21.2023.2023_06_21_17_09_26.cal | 6/21/2023 6:49:49 PM |
| 2 | 25.53 | 7.756mg/L | 50uL | 1.000 | | 06.21.2023.2023_06_21_17_09_26.cal | 6/21/2023 6:52:22 PM |
| 3 | 25.70 | 7.807mg/L | 50uL | 1.000 | | 06.21.2023.2023_06_21_17_09_26.cal | 6/21/2023 6:54:51 PM |

| | |
|---|---|
| Mean Area | 25.60 |
| Mean Conc. | 7.778mg/L |




**Sample**

| | |
|---|---|
| Sample Name: | ICB |
| Sample ID: | |
| Origin: | 06.21.2023.cal |
| Status | Completed |
| Chk. Result | |

| Type | Anal. | Manual Dilution | Result |
|---|---|---|---|
| Unknown | NPOC | 1.000 | NPOC:0.01449mg/L |

1. Det

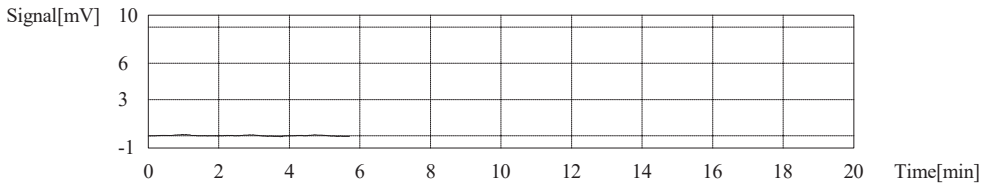
Anal.: NPOC

| No. | Area | Conc. | Inj. Vol. | Aut. Dil. | Ex. | Cal. Curve | Date / Time |
|---|---|---|---|---|---|---|---|
| 1 | 0.000 | 0.000mg/L | 50uL | 1.000 | | 06.21.2023.2023_06_21_17_09_26.cal | 6/21/2023 7:02:39 PM |
| 2 | 0.000 | 0.000mg/L | 50uL | 1.000 | | 06.21.2023.2023_06_21_17_09_26.cal | 6/21/2023 7:04:47 PM |
| 3 | 0.1431 | 0.04347mg/L | 50uL | 1.000 | | 06.21.2023.2023_06_21_17_09_26.cal | 6/21/2023 7:06:55 PM |

# TOC-Control L Report

2023_06_21_002.tlx

| | |
|---|---|
| Mean Area | 0.04770 |
| Mean Conc. | 0.01449mg/L |



C:\TOC-L\Data\2023_09_06_001.tlx

| | Sample Name | Sample ID | Origin | Result | Status | Date / Time | Vial |
|---|---|---|---|---|---|---|---|
| 1 | CCV | 322146206 | 06.21.2023.cal | NPOC:26.2 | Completed | 9/6/2023 10:23:38 A | 1 |
| 2 | CCB | | 06.21.2023.cal | NPOC:0.13 | Completed | 9/6/2023 10:35:36 A | 2 |
| 3 | MBLK-09062023 | | 06.21.2023.cal | NPOC:0.00 | Completed | 9/6/2023 10:47:35 A | 3 |
| 4 | LCS-09062023 | 3100607901 | 06.21.2023.cal | NPOC:10.3 | Completed | 9/6/2023 11:01:20 A | 4 |
| 5 | LCSD-09062023 | | 06.21.2023.cal | NPOC:10.3 | Completed | 9/6/2023 11:15:12 A | 5 |
| 6 | HS23081750-01 | TOC_W 5310B | 06.21.2023.cal | NPOC:0.54 | Completed | 9/6/2023 11:27:11 A | 6 |
| 7 | HS23081750-02 | | 06.21.2023.cal | NPOC:2.88 | Completed | 9/6/2023 11:51:24 A | 7 |
| 8 | HS23081292-05 | | 06.21.2023.cal | NPOC:65.3 | Completed | 9/6/2023 12:05:55 P | 32 |
| 9 | HS23081292-05DF10 | | 06.21.2023.cal | NPOC:6.74 | Completed | 9/6/2023 12:19:10 P | 33 |
| 10 | HS23090069-01 | | 06.21.2023.cal | NPOC:3.75 | Completed | 9/6/2023 12:31:51 P | 10 |
| 11 | HS23090072-01 | | 06.21.2023.cal | NPOC:0.45 | Completed | 9/6/2023 12:43:50 P | 11 |
| 12 | HS23081679-03 | | 06.21.2023.cal | NPOC:0.59 | Completed | 9/6/2023 12:56:01 P | 12 |
| 13 | CCV | 322146206 | 06.21.2023.cal | NPOC:25.3 | Completed | 9/6/2023 1:10:24 PM | 28 |
| 14 | CCB | | 06.21.2023.cal | NPOC:0.34 | Completed | 9/6/2023 1:22:23 PM | 29 |
| 15 | HS23090064-01 | | 06.21.2023.cal | NPOC:0.65 | Completed | 9/6/2023 1:34:33 PM | 8 |
| 16 | HS23090067-01 | | 06.21.2023.cal | NPOC:9.17 | Completed | 9/6/2023 1:47:53 PM | 9 |
| 17 | HS23090014-01 | | 06.21.2023.cal | NPOC:13.0 | Completed | 9/6/2023 2:01:38 PM | 13 |
| 18 | HS23090014-01MS | | 06.21.2023.cal | NPOC:23.4 | Completed | 9/6/2023 2:15:43 PM | 14 |
| 19 | CCV | 322146206 | 06.21.2023.cal | NPOC:25.8 | Completed | 9/6/2023 2:55:53 PM | 28 |
| 20 | CCB | | 06.21.2023.cal | NPOC:0.40 | Completed | 9/6/2023 3:07:52 PM | 29 |
| 21 | MBLK-09062023 | | 06.21.2023.cal | NPOC:0.17 | Completed | 9/6/2023 3:20:10 PM | 3 |
| 22 | LCS-09062023 | 3100607901 | 06.21.2023.cal | NPOC:10.2 | Completed | 9/6/2023 3:34:04 PM | 4 |
| 23 | LCSD-09062023 | | 06.21.2023.cal | NPOC:10.2 | Completed | 9/6/2023 3:47:46 PM | 5 |
| 24 | HS23081292-05DF2 | | 06.21.2023.cal | NPOC:32.3 | Completed | 9/6/2023 4:02:18 PM | 34 |
| 25 | HS23081428-04DF10 | TOC_W 5310B | 06.21.2023.cal | NPOC:13.2 | Completed | 9/6/2023 4:56:50 PM | 17 |
| 26 | HS23081428-04MS | | 06.21.2023.cal | NPOC:18.3 | Completed | 9/6/2023 5:10:58 PM | 18 |
| 27 | HS23081965-01 | TOC_W | 06.21.2023.cal | NPOC:2.97 | Completed | 9/6/2023 5:23:58 PM | 19 |
| 28 | HS23081926-01 | | 06.21.2023.cal | NPOC:4.41 | Completed | 9/6/2023 5:37:08 PM | 20 |
| 29 | HS23081928-01 | | 06.21.2023.cal | NPOC:3.56 | Completed | 9/6/2023 5:50:08 PM | 21 |
| 30 | HS23081594-01 | | 06.21.2023.cal | NPOC:3.43 | Completed | 9/6/2023 6:05:18 PM | 22 |
| 31 | CCV | 322146206 | 06.21.2023.cal | NPOC:25.5 | Completed | 9/6/2023 6:22:37 PM | 28 |
| 32 | CCB | | 06.21.2023.cal | NPOC:0.27 | Completed | 9/6/2023 6:34:47 PM | 29 |
| 33 | HS23090159-01 | | 06.21.2023.cal | NPOC:9.16 | Completed | 9/6/2023 6:48:39 PM | 23 |
| 34 | HS23090159-02 | | 06.21.2023.cal | NPOC:9.07 | Completed | 9/6/2023 7:02:19 PM | 24 |
| 35 | HS23081679-05 | | 06.21.2023.cal | NPOC:1.47 | Completed | 9/6/2023 7:15:07 PM | 15 |
| 36 | HS23090083-01 | | 06.21.2023.cal | NPOC:20.9 | Completed | 9/6/2023 7:29:17 PM | 16 |
| 37 | CCV | 322146206 | 06.21.2023.cal | NPOC:26.4 | Completed | 9/6/2023 7:43:54 PM | 30 |
| 38 | CCB | | 06.21.2023.cal | NPOC:0.27 | Completed | 9/6/2023 7:55:53 PM | 31 |
| 39 | MBLK-09062023 | | 06.21.2023.cal | NPOC:0.11 | Completed | 9/6/2023 8:08:52 PM | 3 |
| 40 | LCS-09062023 | 3100607901 | 06.21.2023.cal | NPOC:10.3 | Completed | 9/6/2023 8:23:06 PM | 4 |
| 41 | LCSD-09062023 | | 06.21.2023.cal | NPOC:10.3 | Completed | 9/6/2023 8:37:06 PM | 5 |
| 42 | HS23081750-01 | TOC_DISS | 06.21.2023.cal | NPOC:0.64 | Completed | 9/6/2023 8:49:35 PM | 25 |
| 43 | HS23081750-01MS | | 06.21.2023.cal | NPOC:10.6 | Completed | 9/6/2023 9:03:14 PM | 26 |
| 44 | HS23081750-02 | | 06.21.2023.cal | NPOC:3.00 | Completed | 9/6/2023 9:16:11 PM | 27 |
| 45 | CCV | 322146206 | 06.21.2023.cal | NPOC:25.5 | Completed | 9/6/2023 9:31:02 PM | 30 |
| 46 | CCB | | 06.21.2023.cal | NPOC:0.20 | Completed | 9/6/2023 9:43:04 PM | 31 |

# TOC-Control L Report



**Instr.Information**

Instrument Options TOC/ASI/IC Unit/
Catalyst Regular Sensitivity

**Sample**

Sample Name: CCV
Sample ID: 322146206
Origin: 06.21.2023.cal
Status Completed
Chk. Result

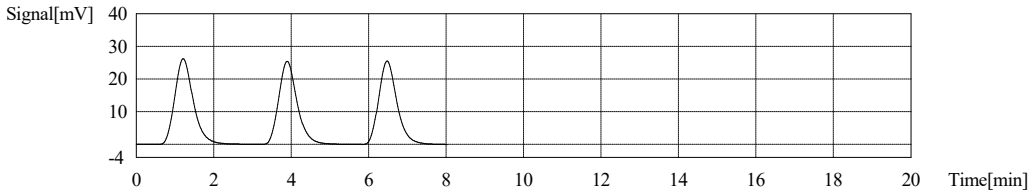
| Type | Anal. | Manual Dilution | Result |
|---|---|---|---|
| Unknown | NPOC | 1.000 | NPOC:25.81mg/L |

1. Det

Anal.: NPOC

| No. | Area | Conc. | Inj. Vol. | Aut. Dil. | Ex. | Cal. Curve | Date / Time |
|---|---|---|---|---|---|---|---|
| 1 | 86.56 | 26.42mg/L | 50uL | 1.000 | | 06.21.2023.2023_06_22_09_52_59.cal | 9/6/2023 2:50:02 PM |
| 2 | 83.85 | 25.59mg/L | 50uL | 1.000 | | 06.21.2023.2023_06_22_09_52_59.cal | 9/6/2023 2:52:52 PM |
| 3 | 83.30 | 25.43mg/L | 50uL | 1.000 | | 06.21.2023.2023_06_22_09_52_59.cal | 9/6/2023 2:55:53 PM |

Mean Area 84.57
Mean Conc. 25.81mg/L




**Sample**

Sample Name: CCB
Sample ID:
Origin: 06.21.2023.cal
Status Completed
Chk. Result

| Type | Anal. | Manual Dilution | Result |
|---|---|---|---|
| Unknown | NPOC | 1.000 | NPOC:0.4016mg/L |

1. Det

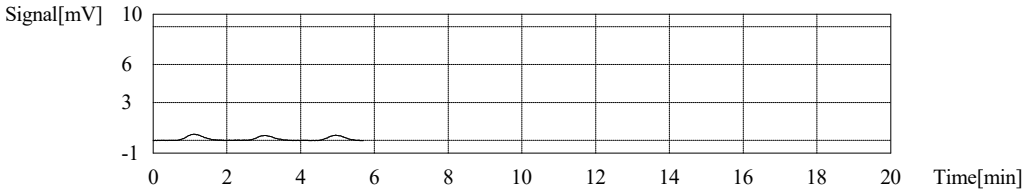
Anal.: NPOC

| No. | Area | Conc. | Inj. Vol. | Aut. Dil. | Ex. | Cal. Curve | Date / Time |
|---|---|---|---|---|---|---|---|
| 1 | 1.463 | 0.4466mg/L | 50uL | 1.000 | | 06.21.2023.2023_06_22_09_52_59.cal | 9/6/2023 3:03:38 PM |
| 2 | 1.161 | 0.3544mg/L | 50uL | 1.000 | | 06.21.2023.2023_06_22_09_52_59.cal | 9/6/2023 3:05:45 PM |
| 3 | 1.323 | 0.4038mg/L | 50uL | 1.000 | | 06.21.2023.2023_06_22_09_52_59.cal | 9/6/2023 3:07:52 PM |

# TOC-Control L Report



Mean Area 1.316
Mean Conc. 0.4016mg/L




**Sample**

Sample Name: MBLK-09062023
Sample ID:
Origin: 06.21.2023.cal
Status Completed
Chk. Result

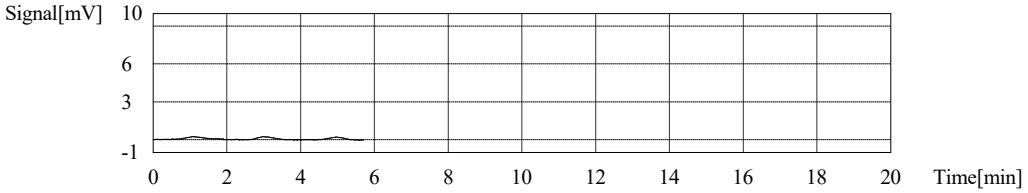
| Type | Anal. | Manual Dilution | Result |
|---|---|---|---|
| Unknown | NPOC | 1.000 | NPOC:0.1796mg/L |

1. Det

Anal.: NPOC

| No. | Area | Conc. | Inj. Vol. | Aut. Dil. | Ex. | Cal. Curve | Date / Time |
|---|---|---|---|---|---|---|---|
| 1 | 0.5174 | 0.1579mg/L | 50uL | 1.000 | | 06.21.2023.2023_06_22_09_52_59.cal | 9/6/2023 3:15:54 PM |
| 2 | 0.6896 | 0.2105mg/L | 50uL | 1.000 | | 06.21.2023.2023_06_22_09_52_59.cal | 9/6/2023 3:18:03 PM |
| 3 | 0.5583 | 0.1704mg/L | 50uL | 1.000 | | 06.21.2023.2023_06_22_09_52_59.cal | 9/6/2023 3:20:10 PM |

Mean Area 0.5884
Mean Conc. 0.1796mg/L




**Sample**

Sample Name: LCS-09062023
Sample ID: 3100607901
Origin: 06.21.2023.cal
Status Completed
Chk. Result

| Type | Anal. | Manual Dilution | Result |
|---|---|---|---|
| Unknown | NPOC | 1.000 | NPOC:10.25mg/L |

1. Det

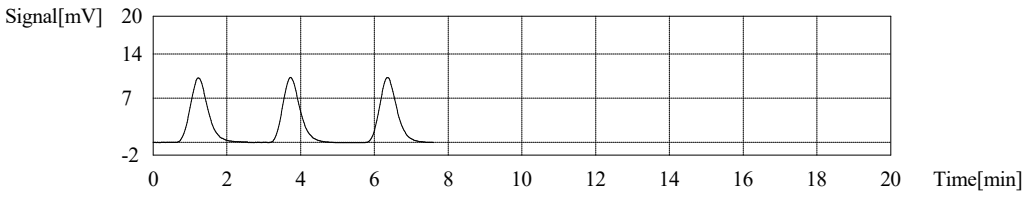
Anal.: NPOC

| No. | Area | Conc. | Inj. Vol. | Aut. Dil. | Ex. | Cal. Curve | Date / Time |
|---|---|---|---|---|---|---|---|
| 1 | 33.60 | 10.26mg/L | 50uL | 1.000 | | 06.21.2023.2023_06_22_09_52_59.cal | 9/6/2023 3:28:33 PM |
| 2 | 33.57 | 10.25mg/L | 50uL | 1.000 | | 06.21.2023.2023_06_22_09_52_59.cal | 9/6/2023 3:31:23 PM |
| 3 | 33.61 | 10.26mg/L | 50uL | 1.000 | | 06.21.2023.2023_06_22_09_52_59.cal | 9/6/2023 3:34:04 PM |

# TOC-Control L Report



Mean Area 33.59
Mean Conc. 10.25mg/L




**Sample**

Sample Name: LCSD-09062023
Sample ID:
Origin: 06.21.2023.cal
Status Completed
Chk. Result

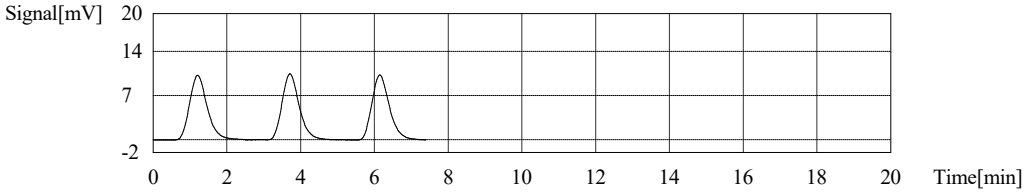
| Type | Anal. | Manual Dilution | Result |
|---|---|---|---|
| Unknown | NPOC | 1.000 | NPOC:10.28mg/L |

1. Det

Anal.: NPOC

| No. | Area | Conc. | Inj. Vol. | Aut. Dil. | Ex. | Cal. Curve | Date / Time |
|---|---|---|---|---|---|---|---|
| 1 | 33.69 | 10.28mg/L | 50uL | 1.000 | | 06.21.2023.2023_06_22_09_52_59.cal | 9/6/2023 3:42:24 PM |
| 2 | 33.57 | 10.25mg/L | 50uL | 1.000 | | 06.21.2023.2023_06_22_09_52_59.cal | 9/6/2023 3:45:07 PM |
| 3 | 33.75 | 10.30mg/L | 50uL | 1.000 | | 06.21.2023.2023_06_22_09_52_59.cal | 9/6/2023 3:47:46 PM |

Mean Area 33.67
Mean Conc. 10.28mg/L




**Sample**

Sample Name: HS23081428-04DF10
Sample ID: TOC_W 5310B
Origin: 06.21.2023.cal
Status Completed
Chk. Result

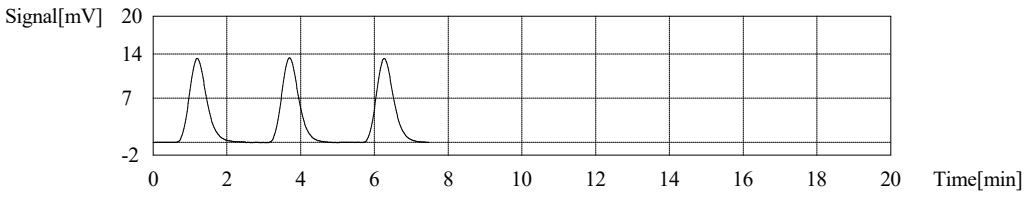
| Type | Anal. | Manual Dilution | Result |
|---|---|---|---|
| Unknown | NPOC | 1.000 | NPOC:13.20mg/L |

1. Det

Anal.: NPOC

| No. | Area | Conc. | Inj. Vol. | Aut. Dil. | Ex. | Cal. Curve | Date / Time |
|---|---|---|---|---|---|---|---|
| 1 | 43.08 | 13.15mg/L | 50uL | 1.000 | | 06.21.2023.2023_06_22_09_52_59.cal | 9/6/2023 4:51:24 PM |
| 2 | 43.51 | 13.28mg/L | 50uL | 1.000 | | 06.21.2023.2023_06_22_09_52_59.cal | 9/6/2023 4:54:12 PM |
| 3 | 43.18 | 13.18mg/L | 50uL | 1.000 | | 06.21.2023.2023_06_22_09_52_59.cal | 9/6/2023 4:56:50 PM |

Mean Area 43.26
Mean Conc. 13.20mg/L




**Sample**

Sample Name: HS23081428-04MS
Sample ID:
Origin: 06.21.2023.cal
Status Completed
Chk. Result

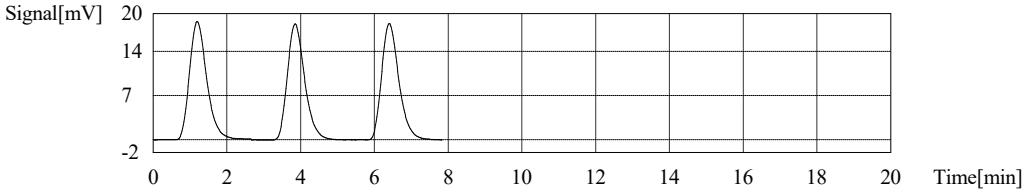
| Type | Anal. | Manual Dilution | Result |
|---|---|---|---|
| Unknown | NPOC | 1.000 | NPOC:18.36mg/L |

1. Det

Anal.: NPOC

| No. | Area | Conc. | Inj. Vol. | Aut. Dil. | Ex. | Cal. Curve | Date / Time |
|---|---|---|---|---|---|---|---|
| 1 | 60.69 | 18.52mg/L | 50uL | 1.000 | | 06.21.2023.2023_06_22_09_52_59.cal | 9/6/2023 5:05:20 PM |
| 2 | 59.97 | 18.30mg/L | 50uL | 1.000 | | 06.21.2023.2023_06_22_09_52_59.cal | 9/6/2023 5:08:08 PM |
| 3 | 59.81 | 18.26mg/L | 50uL | 1.000 | | 06.21.2023.2023_06_22_09_52_59.cal | 9/6/2023 5:10:58 PM |

Mean Area 60.16
Mean Conc. 18.36mg/L




**Sample**

Sample Name: HS23081965-01
Sample ID: TOC_W
Origin: 06.21.2023.cal
Status Completed
Chk. Result

| Type | Anal. | Manual Dilution | Result |
|---|---|---|---|
| Unknown | NPOC | 1.000 | NPOC:2.972mg/L |

1. Det

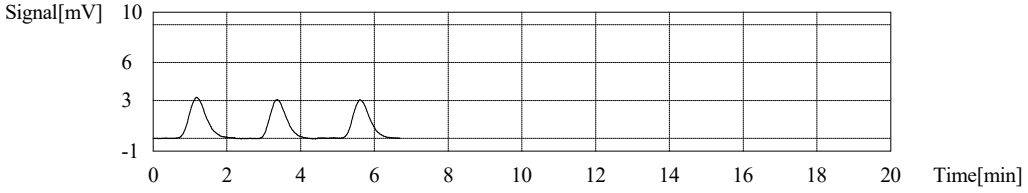
Anal.: NPOC

| No. | Area | Conc. | Inj. Vol. | Aut. Dil. | Ex. | Cal. Curve | Date / Time |
|---|---|---|---|---|---|---|---|
| 1 | 10.18 | 3.107mg/L | 50uL | 1.000 | | 06.21.2023.2023_06_22_09_52_59.cal | 9/6/2023 5:19:01 PM |
| 2 | 9.578 | 2.924mg/L | 50uL | 1.000 | | 06.21.2023.2023_06_22_09_52_59.cal | 9/6/2023 5:21:30 PM |
| 3 | 9.452 | 2.885mg/L | 50uL | 1.000 | | 06.21.2023.2023_06_22_09_52_59.cal | 9/6/2023 5:23:58 PM |

# TOC-Control L Report



Mean Area 9.737
Mean Conc. 2.972mg/L




**Sample**

Sample Name: CCV
Sample ID: 322146206
Origin: 06.21.2023.cal
Status Completed
Chk. Result

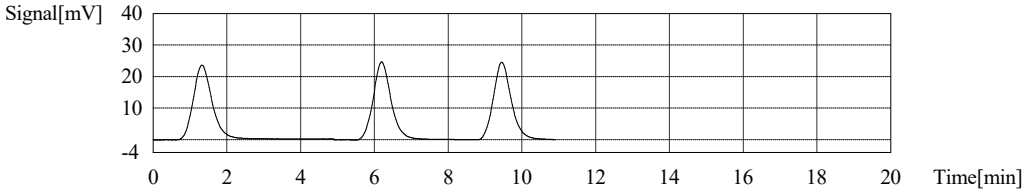
| Type | Anal. | Manual Dilution | Result |
|---|---|---|---|
| Unknown | NPOC | 1.000 | NPOC:25.50mg/L |

1. Det

Anal.: NPOC

| No. | Area | Conc. | Inj. Vol. | Aut. Dil. | Ex. | Cal. Curve | Date / Time |
|---|---|---|---|---|---|---|---|
| 1 | 84.65 | 25.84mg/L | 50uL | 1.000 | | 06.21.2023.2023_06_22_09_52_59.cal | 9/6/2023 6:16:06 PM |
| 2 | 83.32 | 25.43mg/L | 50uL | 1.000 | | 06.21.2023.2023_06_22_09_52_59.cal | 9/6/2023 6:19:38 PM |
| 3 | 82.70 | 25.24mg/L | 50uL | 1.000 | | 06.21.2023.2023_06_22_09_52_59.cal | 9/6/2023 6:22:37 PM |

Mean Area 83.56
Mean Conc. 25.50mg/L




**Sample**

Sample Name: CCB
Sample ID:
Origin: 06.21.2023.cal
Status Completed
Chk. Result

| Type | Anal. | Manual Dilution | Result |
|---|---|---|---|
| Unknown | NPOC | 1.000 | NPOC:0.2700mg/L |

1. Det

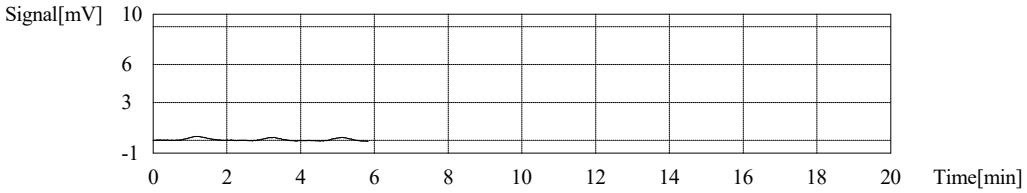
Anal.: NPOC

| No. | Area | Conc. | Inj. Vol. | Aut. Dil. | Ex. | Cal. Curve | Date / Time |
|---|---|---|---|---|---|---|---|
| 1 | 0.9765 | 0.2981mg/L | 50uL | 1.000 | | 06.21.2023.2023_06_22_09_52_59.cal | 9/6/2023 6:30:29 PM |
| 2 | 0.8332 | 0.2543mg/L | 50uL | 1.000 | | 06.21.2023.2023_06_22_09_52_59.cal | 9/6/2023 6:32:36 PM |
| 3 | 0.8442 | 0.2577mg/L | 50uL | 1.000 | | 06.21.2023.2023_06_22_09_52_59.cal | 9/6/2023 6:34:47 PM |

# TOC-Control L Report

2023_09_06_001.tlx

| | |
|---|---|
| Mean Area | 0.8846 |
| Mean Conc. | 0.2700mg/L |



# HS23081965 E2300782-LEVEL IV Final Report

ALS WO# HS23081965

August 31, 2023 Service Request No:E2300782

James Guin
ALS Environmental - US
10450 Stancliff Rd #210
Houston, TX 77099

**Laboratory Results for: HS23081965**

Dear James,

Enclosed are the results of the sample(s) submitted to our laboratory August 31, 2023
For your reference, these analyses have been assigned our service request number **E2300782.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current TNI standards, where applicable, and except as noted in the laboratory case narrative provided. All results are intended to be considered in their entirety and ALS Environmental is not responsible for use of less than the complete final report. Results apply only to the items submitted to the laboratory, as received for analysis. In accordance with the current TNI Standard, a statement on the estimated uncertainty of measurement of any quantitative analysis will be supplied upon request.

Please contact me if you have any questions. My extension is 2190. You may also contact me via email at hussam.kelany@alsglobal.com.

Respectfully submitted,

**ALS Group USA, Corp. dba ALS Environmental**

H Kelany

Hussam Kelany
Project Manager

ADDRESS 10450 Stancliff Rd., Suite 210, Houston, TX 77099
PHONE +1 281 530 5656 | FAX +1 281 530 5887
ALS Group USA, Corp.
dba ALS Environmental

# Certificate of Analysis

**ALS Environmental - Houston Specialties Laboratory**
10450 Stancliff Rd., Suite 210, Houston TX 77099
Phone (281)530-5656 Fax (281)530-5887
www.alsglobal.com

**ALS Environmental**

| | | | |
|---|---|---|---|
| **Client:** | ALS Environmental - US | **Service Request No.:** | E2300782 |
| **Project:** | HS23081965 | **Date Received:** | 08/31/23 |
| **Sample Matrix:** | Water | | |

## CASE NARRATIVE

All analyses were performed in adherence to the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier IV. When appropriate to the method, method blank results have been reported with each analytical test.

### Sample Receipt

Two samples were received for analysis at ALS Environmental in Houston on 08/31/23

The samples were received in good condition and are consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

### Data Validation Notes and Discussion

**Precision and Accuracy:**

EQ2300420: Laboratory Control Spike/Duplicate Laboratory Control Spike (LCS/DLCS) samples were analyzed and reported in lieu of a MS/MSD for this extraction batch.

*The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and ALS Environmental (ALS) is not responsible for utilization of less than the complete report.*

*Use of ALS group USA Corp dba ALS Environmental (ALS)'s Name. Client shall not use ALS's name or trademark in any marketing or reporting materials, press releases or in any other manner ("Materials") whatsoever and shall not attribute to ALS any test result, tolerance or specification derived from ALS's data ("Attribution") without ALS's prior written consent, which may be withheld by ALS for any reason in its sole discretion. To request ALS's consent, Client shall provide copies of the proposed Materials or Attribution and describe in writing Client's proposed use of such Materials or Attribution. If ALS has not provided written approval of the Materials or Attribution within ten (10) days of receipt from Client, Client's request to use ALS's name or trademark in any Materials or Attribution shall be deemed denied. ALS may, in its discretion, reasonably charge Client for its time in reviewing Materials or Attribution requests. Client acknowledges and agrees that the unauthorized use of ALS's name or trademark may cause ALS to incur irreparable harm for which the recovery of money damages will be inadequate. Accordingly, Client acknowledges and agrees that a violation shall justify preliminary injunctive relief. For questions contact the laboratory.*

**Client:** ALS Environmental - US **Service Request:**E2300782
**Project:** HS23081965

## SAMPLE CROSS-REFERENCE

| SAMPLE # | CLIENT SAMPLE ID | DATE | TIME |
|---|---|---|---|
| E2300782-001 | LH18/24-SP650_083023_BIX | 8/30/2023 | 1300 |
| E2300782-002 | LH18/24-SP650_083023_AIX | 8/30/2023 | 1300 |

# Service Request Summary

**Folder #:** **E2300782**
Client Name: ALS Environmental - US
Project Name: HS23081965
Project Number:

**Report To:** James Guin
ALS Environmental - US
10450 Stancliff Rd #210
Houston, TX 77099
USA
Phone Number: 281-530-5656
Cell Number:
Fax Number:
E-mail: james.guin@alsglobal.com

Project Chemist: Hussam Kelany
Originating Lab: HOUSTON
Logged By: CGRANDITS
Date Received: 08/31/23
Internal Due Date: 9/1/2023
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS23081965
EDD: BASIC_WQC_CASNo_LOD

2 120 mL-Plastic Bottle Natural WM Unpreserved
**Location:** EHRMS-AirArch 1
**Pressure Gas:**
**Rush**

| Lab Samp No. | Client Samp No | Matrix | Collected | HOUSTON<br>ClO4 DOD/6850 |
|---|---|---|---|---|
| E2300782-001 | LH18/24-SP650_083023_BIX | Water | 08/30/23 1300 | **IV** |
| E2300782-002 | LH18/24-SP650_083023_AIX | Water | 08/30/23 1300 | **IV** |

# Service Request Summary

**Folder #:** **E2300782**
Client Name: ALS Environmental - US
Project Name: HS23081965
Project Number:

**Report To:** James Guin
ALS Environmental - US
10450 Stancliff Rd #210
Houston, TX 77099
USA
Phone Number: 281-530-5656
Cell Number:
Fax Number:
E-mail: james.guin@alsglobal.com

Project Chemist: Hussam Kelany
Originating Lab: HOUSTON
Logged By: CGRANDITS
Date Received: 08/31/23
Internal Due Date: 9/1/2023
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS23081965
EDD: BASIC_WQC_CASNo_LOD

2 120 mL-Plastic Bottle Natural WM Unpreserved
**Location:** EHRMS-AirArch 1
**Pressure Gas:**
**Rush**

# Data Qualifiers

## Lab Standard

| | |
|---|---|
| + | Possible Tedlar bag artifact. |
| A | TIC is a suspected aldol-condensation product |
| B | Analyte found in the associated method blank as well as in the sample. |
| BC | Reported results are not blank corrected. |
| BH | The back section of the tube yielded higher results than the front. |
| BT | Results indicated possible breakthrough; back section >=10% front section. |
| C | Result identification confirmed. |
| D | Compound identified in an analysis at a secondary dilution factor |
| D | Spike was diluted out |
| DE | Reported results are corrected for desorption efficiency. |
| E | Estimated value. Concentration above calibration range |
| E | The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample. |
| F | The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard. |
| H | The chromatographic fingerprint of the sample resembles a petroleum product but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard. |
| H1 | Sample analysis performed past holding time. See case narrative. |
| H2 | Initial analysis within holding time. Reanalysis for the required dilution was past holding time. |
| H3 | Sample was received and analyzed past holding time. |
| H4 | Sample was extracted past required extraction holding time, but analyzed within analysis holding time. See case narrative. |
| I | (Auto) The reference ion ratio was outside acceptance criteria, which may indicate a potential bias to this result. |
| I | Internal standard not within the specified limits. See case narrative. |
| I | The reference ion ratio was outside acceptance criteria, which may indicate a potential bias to this result. |
| J | Estimated Value. Concentration found below MRL. |
| K | A deflection in the QC ion may indicate interference with the quantitation of this ion. The concentration of this analyte should be considered as an estimate. |
| K | Analyte was detected above the method reporting limit prior to normalization. |
| K | The reference ion ratio was outside acceptance criteria, which may indicate a potential bias to this result. |
| L | The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard. |
| L1 | Laboratory control sample recovery outside the specified limits; results may be biased high. |
| L2 | Laboratory control sample recovery outside the specified limits; results may be biased low. |
| L3 | Laboratory control sample recovery outside the specified limits. |
| M | Matrix interference; results may be biased high. |
| M | The duplicate injection precision not met. |

# Data Qualifiers

## Lab Standard

| | |
|---|---|
| M1 | Matrix interference due to coelution with a non-target compound; results may be biased high. |
| N | Presumptive evidence of a compound for TICs that have been identified based on a mass spectral library search. |
| N | The Matrix Spike sample recovery is not within control limits. See case narrative. |
| O | The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard. |
| P | Indicates chlorodiphenyl ether interference present at the retention time of the target compound. |
| P | Pesticide/Aroclor target analyte > 40% difference for detected concentrations between GC columns |
| Q | Indicates as estimated value because the P and P + 2 theoretical abundance ratio does not meet method criteria. |
| R | Duplicate Precision not met. |
| R1 | Duplicate precision not within the specified limits; however, the results are below the MRL and considered estimated. |
| S | Surrogate recovery not within specified limits. |
| S | The reported value was determined by the Method of Standard Additions (MSA). |
| T | Analyte is a tentatively identified compound, result is estimated. |
| U | Compound was analyzed for, but was not detected (ND). |
| V1 | The continuing calibration verification standard was outside (biased high) the specified limits for this compound. |
| V2 | The continuing calibration verification standard was outside (biased low) the specified limits for this compound. |
| W | Result quantified, but the corresponding peak was detected outside the generated retention time window. |
| W | The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance. |
| X | See case narrative. |
| Y | Recovery outside limits |
| Y | The chromatogram resembles a petroleum product but does not match the calibration standard. |
| Z | The chromatogram does not resemble a petroleum product. |
| i | The MRL/MDL has been elevated due to a matrix interference. |

# ALS Laboratory Group

**Acronyms**

| | |
|---|---|
| Cal | Calibration |
| Conc | CONCentration |
| Dioxin(s) | Polychlorinated dibenzo-p-dioxin(s) |
| EDL | Estimated Detection Limit |
| EMPC | Estimated Maximum Possible Concentration |
| Flags | Data qualifiers |
| Furan(s) | Polychlorinated dibenzofuran(s) |
| g | Grams |
| ICAL | Initial CALibration |
| ID | IDentifier |
| Ions | Masses monitored for the analyte during data acquisition |
| L | Liter (s) |
| LCS | Laboratory Control Sample |
| DLCS | Duplicate Laboratory Control Sample |
| MB | Method Blank |
| MCL | Method Calibration Limit |
| MDL | Method Detection Limit |
| mL | Milliliters |
| MS | Matrix Spiked sample |
| DMS | Duplicate Matrix Spiked sample |
| NO | Number of peaks meeting all identification criteria |
| PCDD(s) | Polychlorinated dibenzo-p-dioxin(s) |
| PCDF(s) | Polychlorinated dibenzofuran(s) |
| ppb | Parts per billion |
| ppm | Parts per million |
| ppq | Parts per quadrillion |
| ppt | Parts per trillion |
| QA | Quality Assurance |
| QC | Quality Control |
| Ratio | Ratio of areas from monitored ions for an analyte |
| % Rec. | Percent recovery |
| RPD | Relative Percent Difference |
| RRF | Relative Response Factor |
| RT | Retention Time |
| SDG | Sample Delivery Group |
| S/N | Signal-to-noise ratio |
| TEF | Toxicity Equivalence Factor |
| TEQ | Toxicity Equivalence Quotient |

10450 Stancliff Rd, Houston, TX 77099 | 281-530-5656 | www.alsglobal.com

## State Certifications, Accreditations, and Licenses

| Agency | Number | Expire Date |
|---|---|---|
| Arizona Department of Health Services | AZ0793_2024 | 5/27/2024 |
| Arkansas Department of Environmental Quality | 88-00356 | 3/27/2024 |
| California State Environmental Laboratory Accreditation Program | 2919 | 4/30/2024 |
| Department of Defense | L23-358 | 5/31/2025 |
| Department of Defense | L22-90 | 3/31/2024 |
| Florida Department of Health | E87611-38 | 6/30/2024 |
| Illinois Environmental Protection Agency | 2000322023-11 | 6/30/2024 |
| Kansas Department of Health and Environment | E-10352 2023-2024 | 7/31/2024 |
| Louisiana Department of Environmental Quality | 03087-2023 | 6/30/2024 |
| Louisiana Department of Health and Hospitals | LA028-2023 | 12/31/2023 |
| Maine Department of Health and Human Services | 2022017 | 6/5/2024 |
| Maryland Department of the Environment | 343-2023 | 6/30/2024 |
| Michigan Depratment of Environmental Quality | 9971-2023 | 4/30/2024 |
| Minnesota Department of Health | 2368363 | 12/31/2023 |
| Nebraska Department of Health and Human Services | NE-OS-25-13 | 4/30/2024 |
| Nevada Division of Environmental Protection | TX026932024-1 | 7/31/2024 |
| New Hampshire Environmental Laboratory Accreditation Program | 209423 | 4/24/2024 |
| New Jersey Department of Environmental Protection | TX008-2024 | 6/30/2024 |
| New York Department of Health | 11707 | 3/31/2024 |
| Oregon Environmental Laboratory Accreditation Program | TX200002-011 | 5/15/2024 |
| Pennsylvania Department of Environmental Protection | 68-03441-017 | 6/30/2024 |
| Perry Johnson Laboratory Accreditation | L22-91 | 3/31/2024 |
| Tennessee Department of Environment and Concervation | TN04016-2023 | 4/30/2024 |
| Texas Commision on Environmental Quality | T104704231-23-30 | 4/30/2024 |
| Utah Department of Health Environmental Laboratory Certification | TX026932023-14 | 7/31/2024 |
| Washington Department of Ecology | C819-22 | 11/14/2023 |

# Chain of Custody

**ALS Environmental - Houston Specialties Laboratory**
10450 Stancliff Rd., Suite 210, Houston TX 77099
Phone (281)530-5656 Fax (281)530-5887
www.alsglobal.com

RUSH

10450 Stancliff Rd, Ste 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887
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# Subcontract Chain of Custody

**SAMPLING STATE:** Dept of Defense **COC ID:** 22908

**SUBCONTRACT TO:**

ALS Environmental
10450 Stancliff RoadSuite 210
Houston, TX 77084

**Phone:** +1 281 530 5656

**CUSTOMER INFORMATION:**

| | |
|---|---|
| **Company:** | ALS Houston |
| **Contact:** | James Guin |
| **Address:** | 10450 Stancliff Rd, Ste 210 |
| **Phone:** | +1 281 530 5656 |
| **Email:** | James.Guin@alsglobal.com |
| **Alternate Contact:** | Jumoke M. Lawal |
| **Email:** | jumoke.lawal@alsglobal.com |

**INVOICE INFORMATION:**

| | |
|---|---|
| **Company:** | ALS Houston |
| **Contact:** | Accounts Payable |
| **Address:** | 10450 Stancliff Rd, Ste 210 |
| **Phone:** | +1 281 530 5656 |
| **Reference:** | HS23081965 |
| **TSR:** | Holly Tignac |

| | LAB SAMPLE ID | CLIENT SAMPLE ID | MATRIX | COLLECT DATE |
|---|---|---|---|---|
| | ANALYSIS REQUESTED | | | DUE DATE |
| 1. | **HS23081965-02** | **LH18/24-SP650_083023_BIX** | **Water** | **30 Aug 2023 13:00** |
| | 6850-Perch. DOD Level II & Level IV In separate pdf | | | 01 Sep 2023 |
| 2. | **HS23081965-03** | **LH18/24-SP650_083023_AIX** | **Water** | **30 Aug 2023 13:00** |
| | 6850-Perch. DOD Level II & Level IV In separate pdf | | | 01 Sep 2023 |

**Comments:** Please analyze for the analysis listed above.
Send report to the emails shown above.
RUSH 24Hr,TAT

**QC Level:** DOD IV (DoD Data Package)

E2300782 5
ALS Environmental - US
HS23081965

Relinquished By: _____ Date/Time: _____

Received By: _____ Date/Time: 8-31-23 1018

Cooler ID(s): _____ Temperature(s): _____

# Cooler Receipt Form

ALS Environmental

Project Chemist JG

Client/Project ALS

Thermometer ID 1231

Date/Time Received: 8-31-23 Initials: JG

Date/Time Logged in: 8-31-23 Initials JG

1. Method of delivery: ○ US Mail ○ Fed Ex ○ UPS ○ DHL ☒ ALS Courier ○ Client

2. Samples received in: ☒ Cooler ○ Box ○ Envelope ○ Other

3. Were custody seals on coolers? ○ Yes ☒ No
   Were they intact? ○ Yes ○ No ☒ N/A
   Were they signed and dated? ○ Yes ○ No ☒ N/A
   If yes, how many and where?

4. Packing Material: ○ Inserts ☒ Baggies ○ Bubble Wrap ○ Gel Packs ☒ Wet Ice ○ Sleeves ○ Other

5. Foreign or Regulated Soil? ○ Yes ○ No Location of Sampling:

| Cooler Tracking Number | COC ID | Date Opened | Time Opened | Opened By | Temp. °C | Temp Blank? |
|---|---|---|---|---|---|---|
| ~ | | 8-31-23 | 1218 | JG | 3.1 | ☒ |
| | | | | | | ☐ |
| | | | | | | ☐ |
| | | | | | | ☐ |

6. Were custody papers properly filled out (ink, signed, dated, etc)? ☒ Yes ○ No
7. Did all bottles arrive in good condition (not broken, no signs of leakage)? ☒ Yes ○ No
8. Were all sample labels complete (i.e., sample ID, analysis, preservation, etc)? ☒ Yes ○ No
9. Were appropriate bottles/containers and volumes received for the requested tests? ☒ Yes ○ No
10. Did sample labels and tags agree with custody documents? ☒ Yes ○ No

Notes, Discrepancies, & Resolutions:

E2300782 5
ALS Environmental - US
HS23081965

Service request Label:

HS-HRMSCoolerReceipt R1.0

ALS Environmental - Houston HRMS

10450 Stancliff Rd., Suite 210
Houston, TX 77099
**T:** +1 281 530 5656
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**www.alsglobal.com**

# SAMPLE ACCEPTANCE POLICY

This policy outlines the criteria samples must meet to be accepted by ALS Environmental – Houston HRMS.

**Cooler Custody Seals (desirable, mandatory if specified in SAP):**

- ✓ Intact on outside of cooler, signed and dated

**Chain-of-Custody (COC) documentation (mandatory):**

The following is required on each COC:

- ✓ Sample ID, the location, date and time of collection, collector's name, preservation type, sample type, and any other special remarks concerning the sampleThe COC must be completed in ink.
- ✓ Signature and date of relinquishing party.

In the absence of a COC at sample receipt, the COC will be requested from the client.

**Sample Integrity (mandatory):**

Samples are inspected upon arrival to ensure that sample integrity was not compromised during transfer to the laboratory.

- ✓ Sample containers must arrive in good condition (not broken or leaking).
- ✓ Samples must be labeled appropriately, including Sample IDs, and requested test using durable labels and indelible ink.
- ✓ The correct type of sample bottle must be used for the method requested.
- ✓ An appropriate sample volume, or weight, must be received.
- ✓ Sample IDs and number of containers must reconcile with the COC.
- ✓ Samples must be received within the method defined holding time.

**Temperature Requirement (varies by sample matrix):**

- ✓ Aqueous and Non-aqueous samples must be shipped and stored cold, at 0 to 6ºC.
- ✓ Tissue samples must be shipped and stored frozen, at -20 to -10ºC.
- ✓ Air samples are shipped and stored cold, at 0 to 6ºC
- ✓ The sample temperature must be recorded on the COC

All cooler inspections are documented on the Cooler Receipt Form (CRF). A separate CRF is completed for each service request. Any samples not meeting the above criteria are noted on the CRF and the Project Manager notified. The Project Manager must resolve any sample integrity issues with the client prior to proceeding with the analysis. Such resolutions are documented in writing and filed with the project folder. Data associated with samples received outside of this acceptance policy will be qualified on the case narrative of the final report

# Preparation Information Benchsheets

**ALS Environmental - Houston Specialties Laboratory**
10450 Stancliff Rd., Suite 210, Houston TX 77099
Phone (281)530-5656 Fax (281)530-5887
www.alsglobal.com

# *Preparation Information Benchsheet*

**Prep Run#:** 425548 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
**Team:** Semivoa GCMS/XMI **Prep Method:** Method **Prep Date/Time:** 8/31/23 08:00

| # | Lab Code | Client ID | B# | Method /Test | pH | Cl | Matrix | Amt. Ext. | Sample Description |
|---|---|---|---|---|---|---|---|---|---|
| 1 | E2300771-001 | GW-MW-34-20230824-01 | .01 | 6850/ClO4 | | | Ground Water | 10mL | |
| 2 | E2300771-002 | GW-359-20230824-01 | .01 | 6850/ClO4 | | | Ground Water | 10mL | |
| 3 | E2300771-003 | GW-MW-73D3-20230825-01 | .01 | 6850/ClO4 | | | Ground Water | 10mL | |
| 4 | E2300771-004 | Lysimeter-01-20230825-01 | .01 | 6850/ClO4 | | | Water | 10mL | |
| 5 | E2300771-005 | GW-MW-98D-20230825-01 | .01 | 6850/ClO4 | | | Ground Water | 10mL | |
| 6 | E2300774-001 | GW-MW-15-20230823-01 | .01 | 6850/ClO4 | | | Ground Water | 10mL | |
| 7 | E2300774-002 | GW-MW-90-20230823-01 | .01 | 6850/ClO4 | | | Ground Water | 10mL | |
| 8 | E2300774-003 | GW-MW-70D-20230823-01 | .01 | 6850/ClO4 | | | Ground Water | 10mL | |
| 9 | E2300774-004 | GW-MW-39D-20230823-01 | .01 | 6850/ClO4 | | | Ground Water | 10mL | |
| 10 | E2300774-005 | HSP-105-20230823-01 | .01 | 6850/ClO4 | | | Ground Water | 10mL | |
| 11 | E2300774-006 | HSP-104-20230823-01 | .01 | 6850/ClO4 | | | Ground Water | 10mL | |
| 12 | E2300774-007 | SE-EW-20230823-01 | .01 | 6850/ClO4 | | | Ground Water | 10mL | |
| 13 | E2300782-001 | LH18/24-SP650_083023_BIX | .01 | 6850/ClO4 DOD | | | Water | 10mL | |
| 14 | E2300782-002 | LH18/24-SP650_083023_AIX | .01 | 6850/ClO4 DOD | | | Water | 10mL | |
| 15 | EQ2300420-01 | MB | | 6850/ClO4 DOD | | | Liquid | 10mL | |
| 16 | EQ2300420-02 | LCS | | 6850/ClO4 DOD | | | Liquid | 10mL | |
| 17 | EQ2300420-03 | DLCS | | 6850/ClO4 DOD | | | Liquid | 10mL | |
| 18 | K2309585-001 | LGAC-INF-082823 | .01 | 6850/ClO4 | | | Water | 10mL | |
| 19 | K2309585-002 | LGAC-INT1-082823 | .01 | 6850/ClO4 | | | Water | 10mL | |
| 20 | K2309585-003 | LGAC-INT2-082823 | .01 | 6850/ClO4 | | | Water | 10mL | |
| 21 | R2307502-004 | 2308140932A NASA 3 | .01 | 6850/ClO4 | | | Water | 10mL | |
| 22 | R2307599-005 | 2308170836X ST-5-815 | .01 | 6850/ClO4 | | | Water | 10mL | |
| 23 | R2307599-010 | 2308180832X ST-5-1175 | .01 | 6850/ClO4 | | | Water | 10mL | |

**Spiking Solutions**

Name: Perchlorate Intermediate Stock1 Inventory ID 230342 Logbook Ref: Perchlorate (1st Source) Expires On: 03/07/2024

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| EQ2300420-02 | 1.00µL | EQ2300420-02 | 1.00µL | EQ2300420-03 | 1.00µL | EQ2300420-03 | 1.00µL |

Name: Perchlorate Internal Standard 1ug/mL Inventory ID 230372 Logbook Ref: Perchlorate Internal Standard Expires On: 04/30/2024

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| E2300771-001 | 100.00µL | E2300771-002 | 100.00µL | E2300771-003 | 100.00µL | E2300771-004 | 100.00µL | E2300771-005 | 100.00µL | E2300774-001 | 100.00µL |
| E2300774-002 | 100.00µL | E2300774-003 | 100.00µL | E2300774-004 | 100.00µL | E2300774-005 | 100.00µL | E2300774-006 | 100.00µL | E2300774-007 | 100.00µL |
| E2300782-001 | 100.00µL | E2300782-002 | 100.00µL | EQ2300420-01 | 100.00µL | EQ2300420-01 | 100.00µL | EQ2300420-02 | 100.00µL | EQ2300420-02 | 100.00µL |
| EQ2300420-03 | 100.00µL | EQ2300420-03 | 100.00µL | K2309585-001 | 100.00µL | K2309585-002 | 100.00µL | K2309585-003 | 100.00µL | R2307502-004 | 100.00µL |
| R2307599-005 | 100.00µL | R2307599-010 | 100.00µL | | | | | | | | |

# *Preparation Information Benchsheet*

**Prep Run#:** 425548
**Team:** Semivoa GCMS/XMI

**Prep WorkFlow:** GenExt28Day
**Prep Method:** Method

**Status:** Prepped
**Prep Date/Time:** 8/31/23 08:00

## Preparation Steps

Step: Preparation
Started: 8/31/23 08:00
Finished: 8/31/23 09:21
By: XMI
Comments

Comments: _____

Reviewed By: _____ Date: _____

Chain of Custody

Relinquished By: _____ Date: _____

Received By: _____ Date: _____

Extracts Examined
Yes No

# Analytical Results

**ALS Environmental - Houston Specialties Laboratory**
10450 Stancliff Rd., Suite 210, Houston TX 77099
Phone (281)530-5656 Fax (281)530-5887
www.alsglobal.com

**ALS Group USA, Corp. dba ALS Environmental**

Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | ALS Environmental - US | **Service Request:** | E2300782 |
| **Project:** | HS23081965 | **Date Collected:** | 8/30/23 1300 |
| **Sample Matrix:** | Water | **Date Received:** | 8/31/23 |
| **Sample Name:** | LH18/24-SP650_083023_BIX | **Units:** | µg/L |
| **Lab Code:** | E2300782-001 | **Basis:** | NA |

**Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry**

**Analytical Method:** 6850

| Analyte Name | Result | Q | LOQ | LOD | MDL | Dilution Factor | Date Extracted | Date Analyzed | Extraction Lot | Analysis Lot | Note |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | **154** | | 1.00 | 0.500 | 0.250 | 10 | 8/31/23 | 8/31/23 14:27 | 425548 | 815864 | |

**ALS Group USA, Corp. dba ALS Environmental**

Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | ALS Environmental - US | **Service Request:** | E2300782 |
| **Project:** | HS23081965 | **Date Collected:** | 8/30/23 1300 |
| **Sample Matrix:** | Water | **Date Received:** | 8/31/23 |
| **Sample Name:** | LH18/24-SP650_083023_AIX | **Units:** | µg/L |
| **Lab Code:** | E2300782-002 | **Basis:** | NA |

**Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry**

**Analytical Method:** 6850

| Analyte Name | Result | Q | LOQ | LOD | MDL | Dilution Factor | Date Extracted | Date Analyzed | Extraction Lot | Analysis Lot | Note |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | **5.29** | | 0.100 | 0.0500 | 0.0250 | 1 | 8/31/23 | 8/31/23 14:33 | 425548 | 815864 | |

**ALS Group USA, Corp. dba ALS Environmental**

Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | ALS Environmental - US | **Service Request:** | E2300782 |
| **Project:** | HS23081965 | **Date Collected:** | NA |
| **Sample Matrix:** | Water | **Date Received:** | NA |
| **Sample Name:** | Method Blank | **Units:** | µg/L |
| **Lab Code:** | EQ2300420-01 | **Basis:** | NA |

**Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry**

**Analytical Method:** 6850
**Prep Method:** Method

| Analyte Name | Result | Q | LOQ | LOD | MDL | Dilution Factor | Date Extracted | Date Analyzed | Extraction Lot | Analysis Lot | Note |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | ND | U | 0.100 | 0.0500 | 0.0250 | 1 | 8/31/23 | 8/31/23 11:43 | 425548 | 815864 | |

# Accuracy & Precision

**ALS Environmental - Houston Specialties Laboratory**
10450 Stancliff Rd., Suite 210, Houston TX 77099
Phone (281)530-5656 Fax (281)530-5887
www.alsglobal.com

**ALS Group USA, Corp. dba ALS Environmental**

QA/QC Report

**Client:** ALS Environmental - US
**Project:** HS23081965
**Sample Matrix:** Water

**Service Request:** E2300782
**Date Analyzed:** 8/31/23

## Lab Control Sample Summary
## Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

**Analytical Method:** 6850
**Prep Method:** Method

**Units:** µg/L
**Basis:** NA

**Extraction Lot:** 425548

| | Lab Control Sample EQ2300420-02 | | | Duplicate Lab Control Sample EQ2300420-03 | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Analyte Name** | **Result** | **Spike Amount** | **% Rec** | **Result** | **Spike Amount** | **% Rec** | **% Rec Limits** | **RPD** | **RPD Limit** |
| Perchlorate | 0.103 | 0.100 | 103 | 0.0941 | 0.100 | 94 | 84 - 119 | 9 | 15 |

**Results flagged with an asterisk (*) indicate values outside control criteria.**

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

**ALS Group USA, Corp. dba ALS Environmental**

Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | ALS Environmental - US | **Service Request:** | E2300782 |
| **Project:** | HS23081965 | **Date Collected:** | NA |
| **Sample Matrix:** | Water | **Date Received:** | NA |
| **Sample Name:** | Lab Control Sample | **Units:** | µg/L |
| **Lab Code:** | EQ2300420-02 | **Basis:** | NA |

**Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry**

**Analytical Method:** 6850
**Prep Method:** Method

| Analyte Name | Result | Q | LOQ | LOD | MDL | Dilution Factor | Date Extracted | Date Analyzed | Extraction Lot | Analysis Lot | Note |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | **0.103** | | 0.100 | 0.0500 | 0.0250 | 1 | 8/31/23 | 8/31/23 11:53 | 425548 | 815864 | |

**ALS Group USA, Corp. dba ALS Environmental**

Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | ALS Environmental - US | **Service Request:** | E2300782 |
| **Project:** | HS23081965 | **Date Collected:** | NA |
| **Sample Matrix:** | Water | **Date Received:** | NA |
| **Sample Name:** | Duplicate Lab Control Sample | **Units:** | µg/L |
| **Lab Code:** | EQ2300420-03 | **Basis:** | NA |

**Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry**

**Analytical Method:** 6850
**Prep Method:** Method

| Analyte Name | Result | Q | LOQ | LOD | MDL | Dilution Factor | Date Extracted | Date Analyzed | Extraction Lot | Analysis Lot | Note |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | **0.0941** | J | 0.100 | 0.0500 | 0.0250 | 1 | 8/31/23 | 8/31/23 11:58 | 425548 | 815864 | |

# Initial Calibration

**ALS Environmental - Houston HRMS**
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

**20230802**

# Injection Log

LCMS01 -Shimadzu 8050

**1st Review: XM**
**2nd Review: KN**

**ICAL Date:** 8/2/2023
**Cal. Std. xp:** 03/07/2024
**ICAL ID:** EC2300012

**Mobile Phases :** **A:**20mM ammonium acetate in water 230388 **B:**Acetonitrile 229152

| | Sample Name | | File Name | Acquisition Method | Dilution | Comments | Date/Time |
|---|---|---|---|---|---|---|---|
| 1 | IB | | 2230802-001 | Perchlorate6850c.lcm | 1x | | 8/2/2023 13:05 |
| 2 | IB | | 2230802-002 | Perchlorate6850c.lcm | 1x | | 8/2/2023 13:11 |
| 3 | Perchlorate ICAL 1 | | 2230802-003 | Perchlorate6850c.lcm | 1x | 230373 | 8/2/2023 13:17 |
| 4 | Perchlorate ICAL 2 | | 2230802-004 | Perchlorate6850c.lcm | 1x | 230375 | 8/2/2023 13:23 |
| 5 | Perchlorate ICAL 3 | | 2230802-005 | Perchlorate6850c.lcm | 1x | 230376 | 8/2/2023 13:28 |
| 6 | Perchlorate ICAL 4 | | 2230802-006 | Perchlorate6850c.lcm | 1x | 230377 | 8/2/2023 13:34 |
| 7 | Perchlorate ICAL 5 | | 2230802-007 | Perchlorate6850c.lcm | 1x | 230378 | 8/2/2023 13:39 |
| 8 | Perchlorate ICAL 6 | | 2230802-008 | Perchlorate6850c.lcm | 1x | 230379 | 8/2/2023 13:45 |
| 9 | Perchlorate ICAL 7 | | 2230802-009 | Perchlorate6850c.lcm | 1x | 230380 | 8/2/2023 13:50 |
| 10 | Perchlorate ICAL 8 | | 2230802-010 | Perchlorate6850c.lcm | 1x | 230381 | 8/2/2023 13:56 |
| 11 | Perchlorate ICAL 9 | | 2230802-011 | Perchlorate6850c.lcm | 1x | 230382 | 8/2/2023 14:02 |
| 12 | Perchlorate ICAL 10 | | 2230802-012 | Perchlorate6850c.lcm | 1x | 230383 | 8/2/2023 14:07 |
| 13 | PerchlorateICV | | 2230802-013 | Perchlorate6850c.lcm | 1x | 230385 | 8/2/2023 14:19 |

# *Initial Calibration - Detailed Report*

**Calibration ID:** EC2300012 **Instrument ID:** E-LCMS-01
**Column Name:** 1

| # | Lab Code | Sample Name | File Location | Aquisition Date |
|---|---|---|---|---|
| 01 | EC2300012-01 | Perchlorate ICAL 1 | 2230802-003 | 08/02/2023 13:17 |
| 02 | EC2300012-02 | Perchlorate ICAL 2 | 2230802-004 | 08/02/2023 13:23 |
| 03 | EC2300012-03 | Perchlorate ICAL 3 | 2230802-005 | 08/02/2023 13:28 |
| 04 | EC2300012-04 | Perchlorate ICAL 4 | 2230802-006 | 08/02/2023 13:34 |
| 05 | EC2300012-05 | Perchlorate ICAL 5 | 2230802-007 | 08/02/2023 13:39 |
| 06 | EC2300012-06 | Perchlorate ICAL 6 | 2230802-008 | 08/02/2023 13:45 |
| 07 | EC2300012-07 | Perchlorate ICAL 7 | 2230802-009 | 08/02/2023 13:50 |
| 08 | EC2300012-08 | Perchlorate ICAL 8 | 2230802-010 | 08/02/2023 13:56 |
| 09 | EC2300012-09 | Perchlorate ICAL 9 | 2230802-011 | 08/02/2023 14:02 |
| 10 | EC2300012-10 | Perchlorate ICAL 10 | 2230802-012 | 08/02/2023 14:07 |

**Analyte** **Curve Fit** **Weighting**

**Perchlorate** **Average RF** **RSD = 2.086** **Average RF = 0.1475**

| # | Amount | RF | # | Amount | RF | # | Amount | RF | # | Amount | RF |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 01 | 0.1000 | 0.1428 | 02 | 0.5000 | 0.1421 | 03 | 0.7000 | 0.1457 | 04 | 1.0000 | 0.149 |
| 05 | 2.0000 | 0.1515 | 06 | 5.0000 | 0.1475 | 07 | 10.0000 | 0.1503 | 08 | 20.0000 | 0.1477 |
| 09 | 30.0000 | 0.1485 | 10 | 50.0000 | 0.1496 | | | | | | |

**Analyte**

**Perchlorate** RSE = 2.09

| # | Amount | Calculated Conc | %D | # | Amount | Calculated Conc | %D | # | Amount | Calculated Conc | %D |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 01 | 0.1000 | 0.0968 | -3.2 | 02 | 0.5000 | 0.482 | -3.6 | 03 | 0.7000 | 0.692 | -1.2 |
| 04 | 1.0000 | 1.01 | 1.0 | 05 | 2.0000 | 2.05 | 2.7 | 06 | 5.0000 | 5.00 | -0.0 |
| 07 | 10.0000 | 10.2 | 1.9 | 08 | 20.0000 | 20.0 | 0.2 | 09 | 30.0000 | 30.2 | 0.7 |
| 10 | 50.0000 | 50.7 | 1.4 | | | | | | | | |

# *Initial Calibration Verification Summary Report*

| | | | |
|---|---|---|---|
| **Calibration ID:** | EC2300012 | **Instrument ID:** | E-LCMS-01 |
| **Datafile ID:** | 2230802-013 | **Column Name:** | 1 |

| Analyte | Lab Code | Type | Curve Fit | True Value | Calc Conc | Units | Result | Criteria |
|---|---|---|---|---|---|---|---|---|
| Perchlorate | EC2300012-11 | T | Average RF | 10 | 10.670 | ng/mL | 6.7 | <= 15 |

# Insight Report

Printed at 8/3/2023 9:30:46 AM

Method File: I:\LCMS01\DATA\20230802\20230802ICAL.lcm
Project File: I:\LCMS01\DATA\20230802\no use\20230802ICAL.damlp

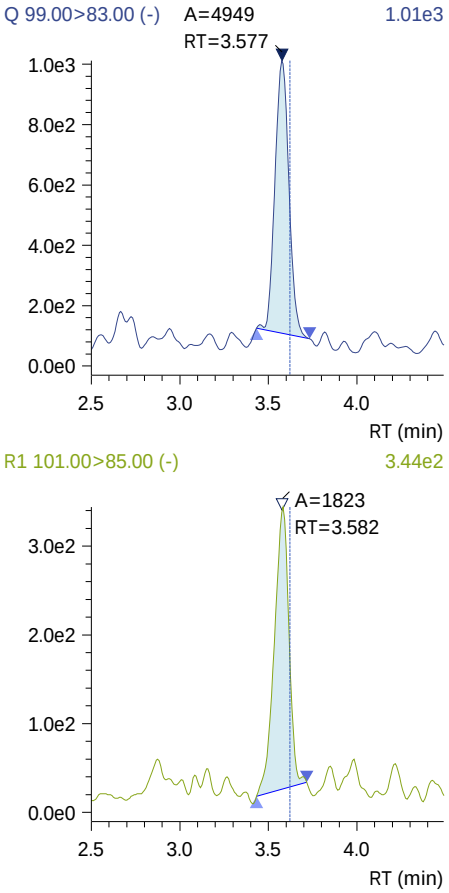
## Perchlorate ICAL 1

Sample ID: Perchlorate ICAL 1
Date Acquired: 8/2/2023 1:17:39 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230802\2230802-003.lcd
Vial: 1 | Inj. Volume: 10.0000uL | Tray: 1

| Name | Mode ID | Found RT | Area | ISTD Area | Conc. | Unit | Ref 1 m/z | Ref 1 Actual Ratio | Comment 1 |
|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | Auto | 3.577 | 4949 | 346538 | 0.0968 | ng/mL | 101.00 >85.00 | 36.83 | 21.29-39.54 |
| Sodium Perchlorate-18O4 _IS | Auto | 3.572 | 346538 | 346538 | 1.0000 | ng/mL | ---- | ---- | |

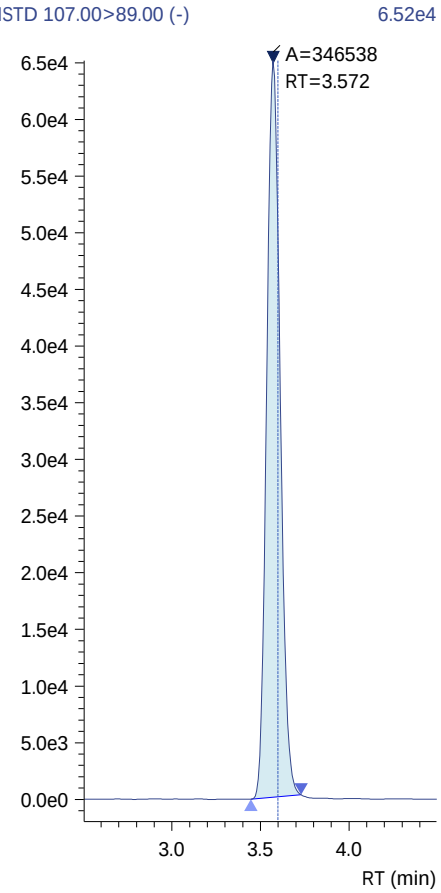
### Perchlorate

Conc 0.0968
R#1 36.83 (30.41)




### Sodium Perchlorate-18O4_IS

Conc 1.0000



# Insight Report

Printed at 8/3/2023 9:30:46 AM

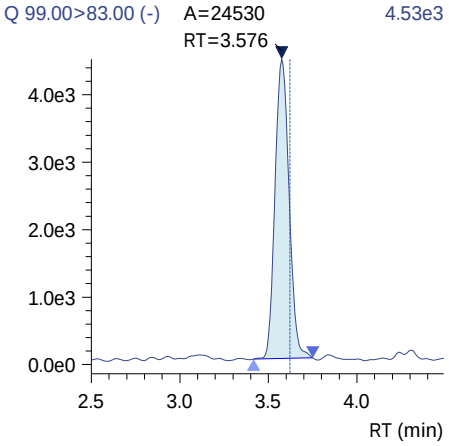
## Perchlorate ICAL 2

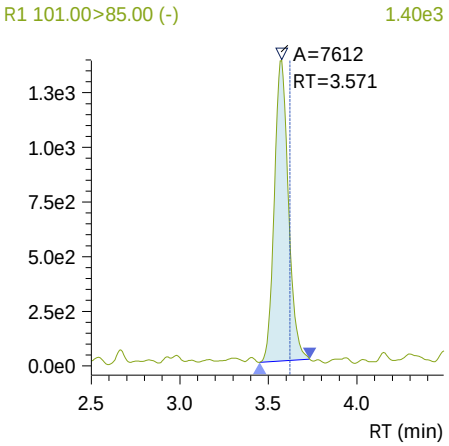
Sample ID: Perchlorate ICAL 2
Date Acquired: 8/2/2023 1:23:13 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230802\2230802-004.lcd
Vial: 2 | Inj. Volume: 10.0000uL | Tray: 1

| Name | Mode ID | Found RT | Area | ISTD Area | Conc. | Unit | Ref 1 m/z | Ref 1 Actual Ratio | Comment 1 |
|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | Auto | 3.576 | 24530 | 345149 | 0.4820 | ng/mL | 101.00 >85.00 | 31.03 | 21.29-39.54 |
| Sodium Perchlorate-18O4 _IS | Auto | 3.571 | 345149 | 345149 | 1.0000 | ng/mL | ---- | ---- | |

### Perchlorate

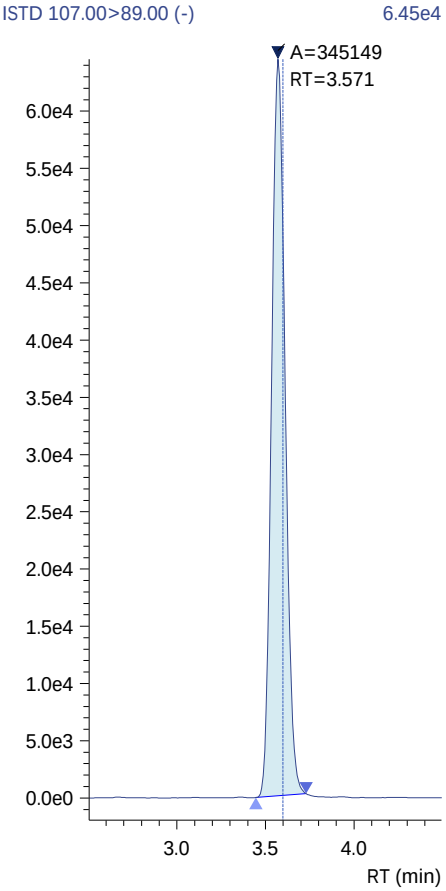
Conc 0.4820
R#1 31.03 (30.41)




### Sodium Perchlorate-18O4_IS

Conc 1.0000



# Insight Report

Printed at 8/3/2023 9:30:46 AM

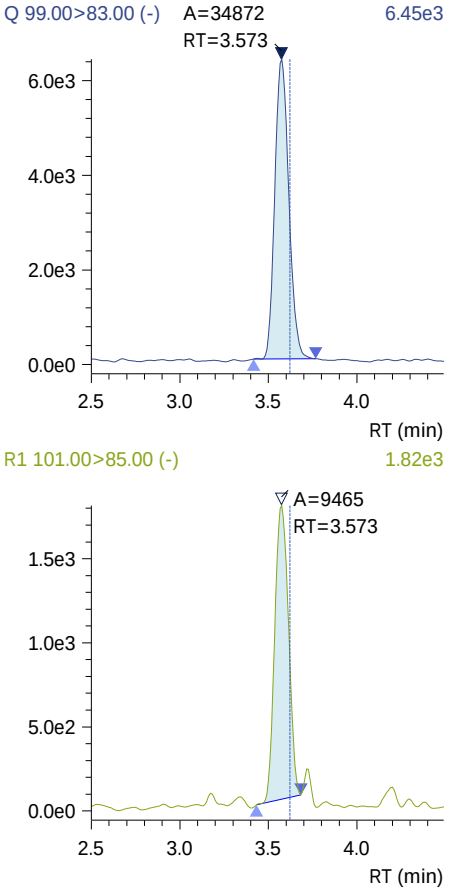
## Perchlorate ICAL 3

Sample ID: Perchlorate ICAL 3
Date Acquired: 8/2/2023 1:28:44 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230802\2230802-005.lcd
Vial: 3 | Inj. Volume: 10.0000uL | Tray: 1

| Name | Mode ID | Found RT | Area | ISTD Area | Conc. | Unit | Ref 1 m/z | Ref 1 Actual Ratio | Comment 1 |
|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | Auto | 3.573 | 34872 | 341974 | 0.6915 | ng/mL | 101.00 >85.00 | 27.14 | 21.29-39.54 |
| Sodium Perchlorate-18O4 _IS | Auto | 3.570 | 341974 | 341974 | 1.0000 | ng/mL | ---- | ---- | |

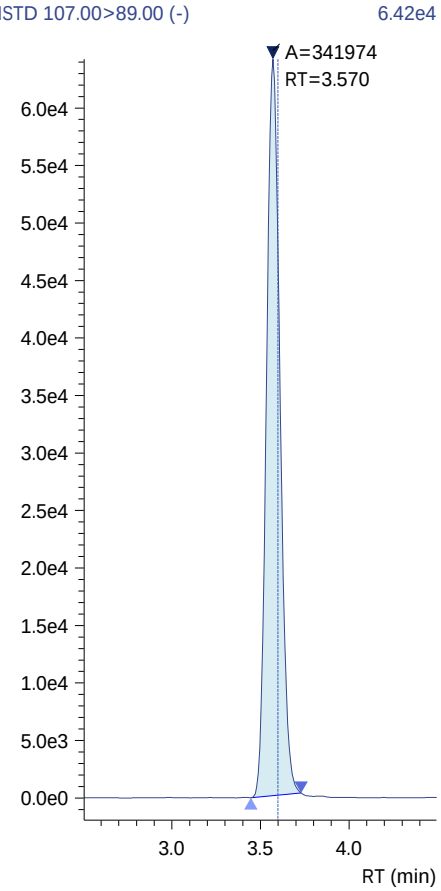
### Perchlorate

Conc 0.6915
R#1 27.14 (30.41)




### Sodium Perchlorate-18O4_IS

Conc 1.0000



# Insight Report

Printed at 8/3/2023 9:30:46 AM

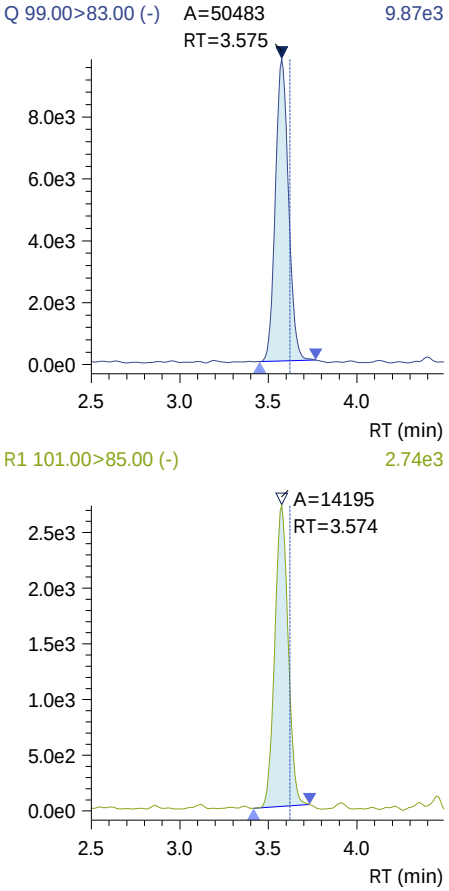
## Perchlorate ICAL 4

Sample ID: Perchlorate ICAL 4
Date Acquired: 8/2/2023 1:34:20 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230802\2230802-006.lcd
Vial: 4 | Inj. Volume: 10.0000uL | Tray: 1

| Name | Mode ID | Found RT | Area | ISTD Area | Conc. | Unit | Ref 1 m/z | Ref 1 Actual Ratio | Comment 1 |
|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | Auto | 3.575 | 50483 | 338838 | 1.0104 | ng/mL | 101.00 >85.00 | 28.12 | 21.29-39.54 |
| Sodium Perchlorate-18O4 _IS | Auto | 3.570 | 338838 | 338838 | 1.0000 | ng/mL | ---- | ---- | |

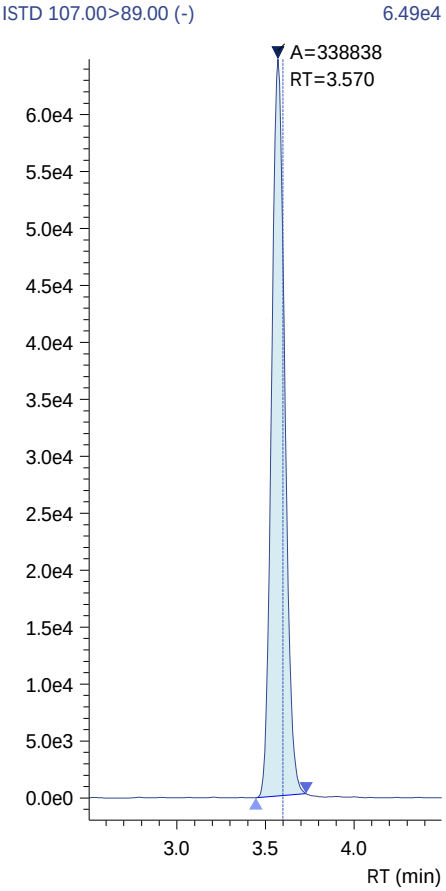
### Perchlorate

Conc 1.0104
R#1 28.12 (30.41)




### Sodium Perchlorate-18O4_IS

Conc 1.0000



# Insight Report

Printed at 8/3/2023 9:30:46 AM

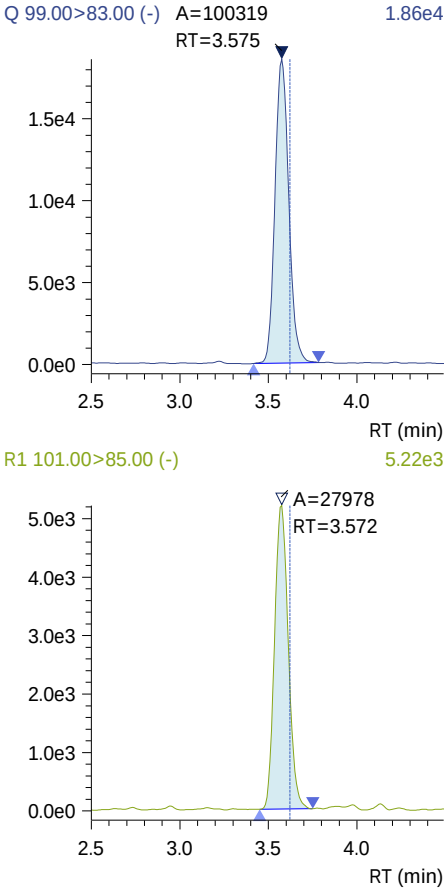
## Perchlorate ICAL 5

Sample ID: Perchlorate ICAL 5
Date Acquired: 8/2/2023 1:39:51 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230802\2230802-007.lcd
Vial: 5 | Inj. Volume: 10.0000uL | Tray: 1

| Name | Mode ID | Found RT | Area | ISTD Area | Conc. | Unit | Ref 1 m/z | Ref 1 Actual Ratio | Comment 1 |
|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | Auto | 3.575 | 100319 | 331124 | 2.0545 | ng/mL | 101.00 >85.00 | 27.89 | 21.29-39.54 |
| Sodium Perchlorate-18O4 _IS | Auto | 3.570 | 331124 | 331124 | 1.0000 | ng/mL | ---- | ---- | |

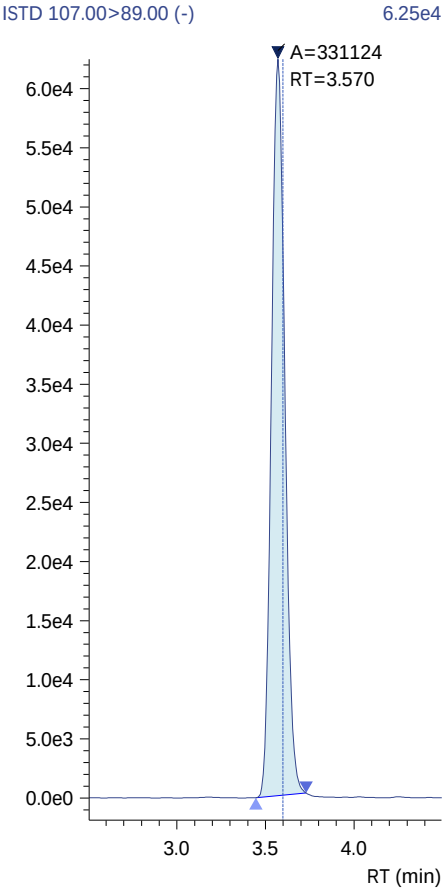
### Perchlorate

Conc 2.0545
R#1 27.89 (30.41)




### Sodium Perchlorate-18O4_IS

Conc 1.0000



# Insight Report

Printed at 8/3/2023 9:30:46 AM

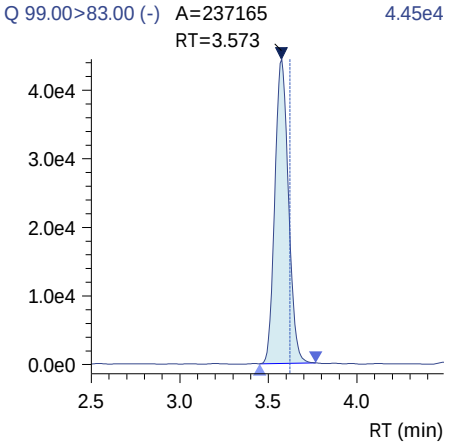
## Perchlorate ICAL 6

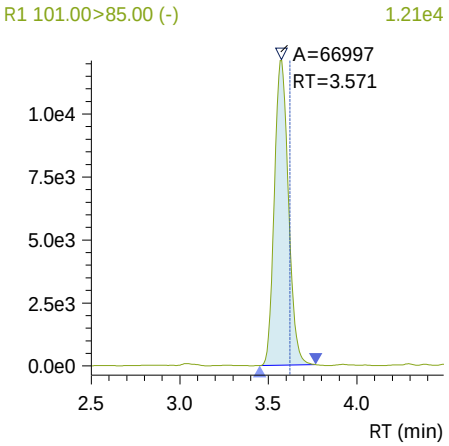
Sample ID: Perchlorate ICAL 6
Date Acquired: 8/2/2023 1:45:24 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230802\2230802-008.lcd
Vial: 6 | Inj. Volume: 10.0000uL | Tray: 1

| Name | Mode ID | Found RT | Area | ISTD Area | Conc. | Unit | Ref 1 m/z | Ref 1 Actual Ratio | Comment 1 |
|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | Auto | 3.573 | 237165 | 321666 | 5.0000 | ng/mL | 101.00 >85.00 | 28.25 | 21.29-39.54 |
| Sodium Perchlorate-18O4 _IS | Auto | 3.570 | 321666 | 321666 | 1.0000 | ng/mL | ---- | ---- | |

### Perchlorate

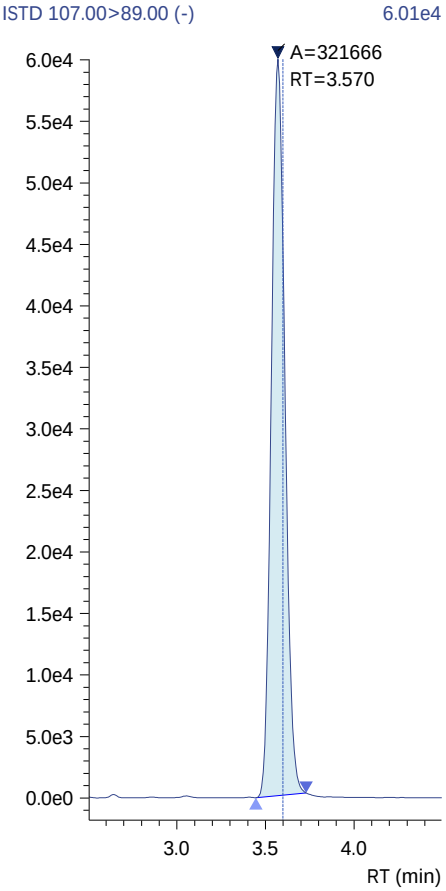
Conc 5.0000
R#1 28.25 (30.41)




### Sodium Perchlorate-18O4_IS

Conc 1.0000



# Insight Report

Printed at 8/3/2023 9:30:46 AM

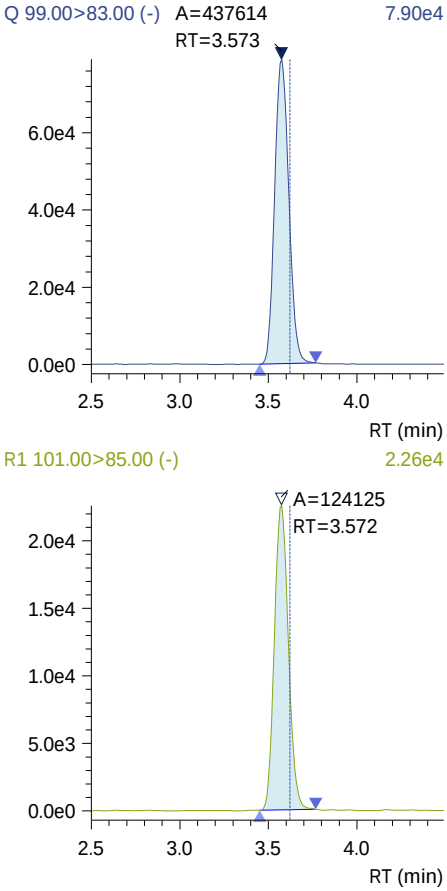
## Perchlorate ICAL 7

Sample ID: Perchlorate ICAL 7
Date Acquired: 8/2/2023 1:50:57 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230802\2230802-009.lcd
Vial: 7 | Inj. Volume: 10.0000uL | Tray: 1

| Name | Mode ID | Found RT | Area | ISTD Area | Conc. | Unit | Ref 1 m/z | Ref 1 Actual Ratio | Comment 1 |
|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | Auto | 3.573 | 437614 | 291215 | 10.1905 | ng/mL | 101.00 >85.00 | 28.36 | 21.29-39.54 |
| Sodium Perchlorate-18O4_IS | Auto | 3.570 | 291215 | 291215 | 1.0000 | ng/mL | ---- | ---- | |

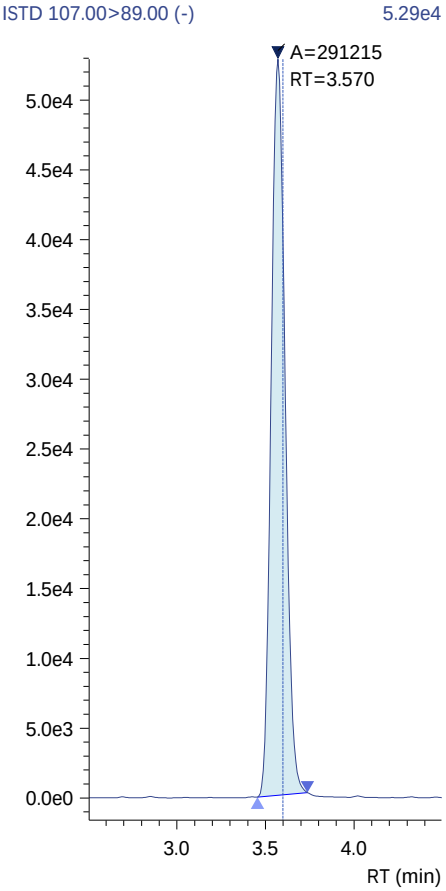
### Perchlorate

Conc 10.1905
R#1 28.36 (30.41)




### Sodium Perchlorate-18O4_IS

Conc 1.0000



# Insight Report

Printed at 8/3/2023 9:30:46 AM

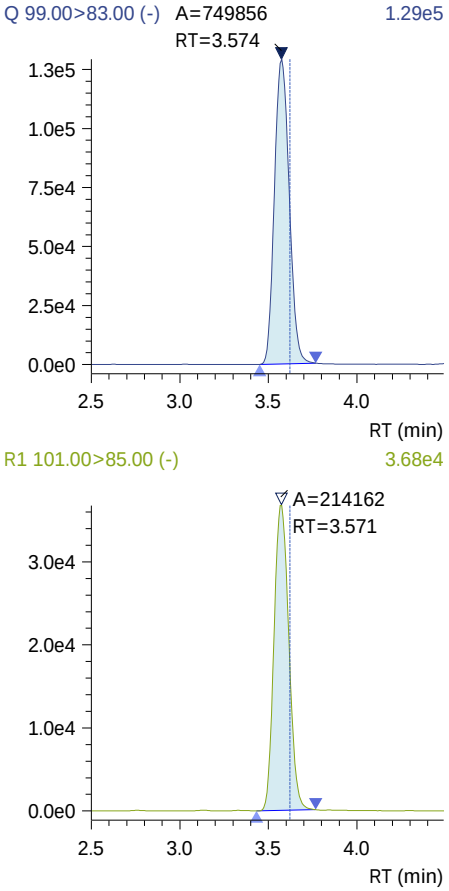
## Perchlorate ICAL 8

Sample ID: Perchlorate ICAL 8
Date Acquired: 8/2/2023 1:56:33 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230802\2230802-010.lcd
Vial: 8 | Inj. Volume: 10.0000uL | Tray: 1

| Name | Mode ID | Found RT | Area | ISTD Area | Conc. | Unit | Ref 1 m/z | Ref 1 Actual Ratio | Comment 1 |
|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | Auto | 3.574 | 749856 | 253829 | 20.03 36 | ng/mL | 101.00 >85.00 | 28.56 | 21.29-39.54 |
| Sodium Perchlorate-18O4 _IS | Auto | 3.569 | 253829 | 253829 | 1.0000 | ng/mL | ---- | ---- | |

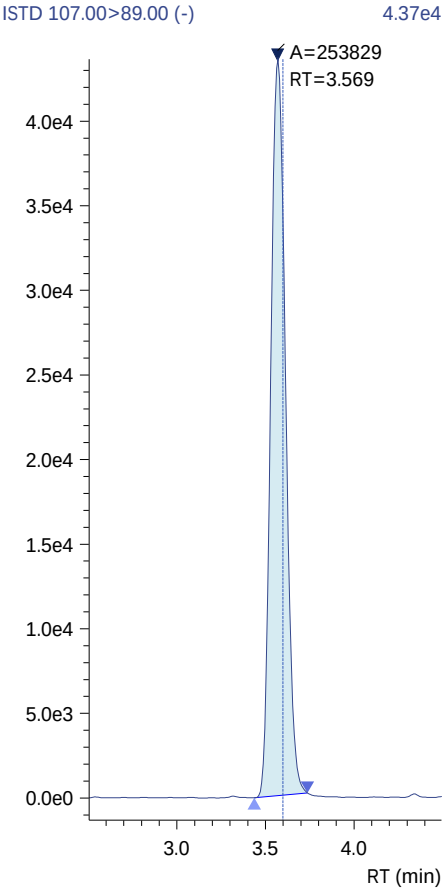
### Perchlorate

Conc 20.0336
R#1 28.56 (30.41)




### Sodium Perchlorate-18O4_IS

Conc 1.0000



# Insight Report



## Perchlorate ICAL 9

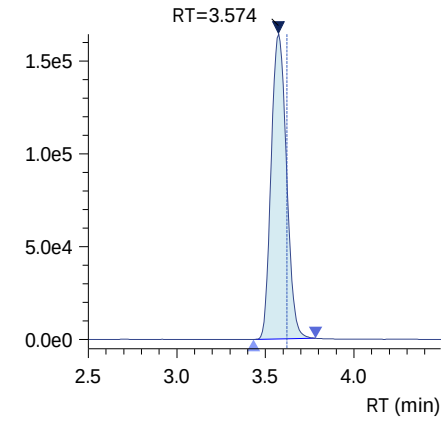
Sample ID: Perchlorate ICAL 9
Date Acquired: 8/2/2023 2:02:07 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230802\2230802-011.lcd
Vial: 9 | Inj. Volume: 10.0000uL | Tray: 1

| Name | Mode ID | Found RT | Area | ISTD Area | Conc. | Unit | Ref 1 m/z | Ref 1 Actual Ratio | Comment 1 |
|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | Auto | 3.574 | 990671 | 222379 | 30.2105 | ng/mL | 101.00 >85.00 | 27.95 | 21.29-39.54 |
| Sodium Perchlorate-18O4_IS | Auto | 3.568 | 222379 | 222379 | 1.0000 | ng/mL | ---- | ---- | |

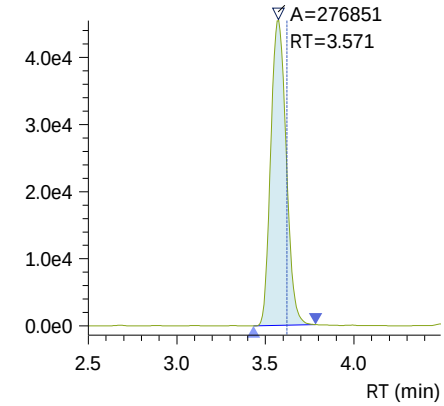
### Perchlorate

Conc 30.2105
R#1 27.95 (30.41)

Q 99.00>83.00 (-) A=990671 1.64e5



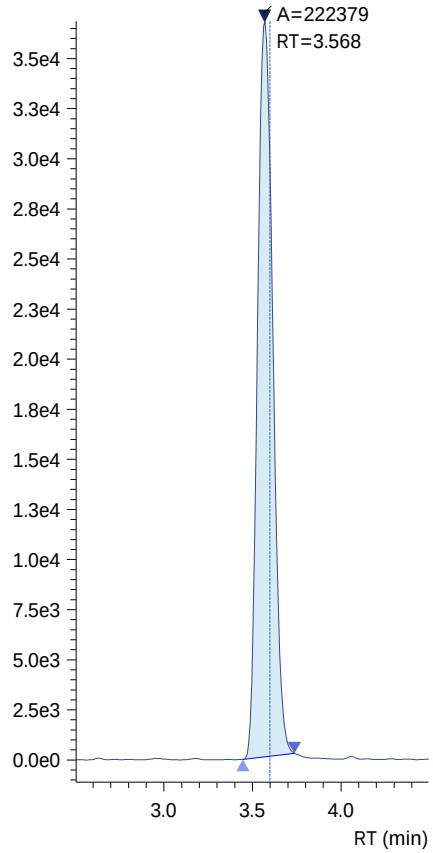

R1 101.00>85.00 (-) 4.55e4




### Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 3.69e4



# Insight Report

Printed at 8/3/2023 9:30:46 AM

## Perchlorate ICAL 10

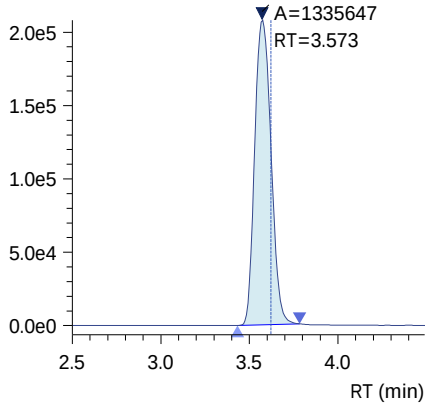
Sample ID: Perchlorate ICAL 10
Date Acquired: 8/2/2023 2:07:39 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230802\2230802-012.lcd
Vial: 10 | Inj. Volume: 10.0000uL | Tray: 1

| Name | Mode ID | Found RT | Area | ISTD Area | Conc. | Unit | Ref 1 m/z | Ref 1 Actual Ratio | Comment 1 |
|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | Auto | 3.573 | 1335647 | 178573 | 50.72<br>20 | ng/mL | 101.00<br>>85.00 | 28.04 | 21.29-39.54 |
| Sodium Perchlorate-18O4_IS | Auto | 3.567 | 178573 | 178573 | 1.0000 | ng/mL | ---- | ---- | |

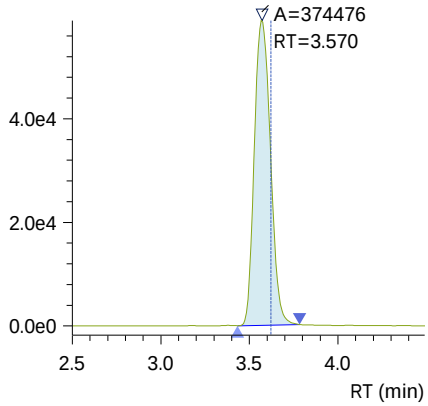
### Perchlorate

Conc 50.7220
R#1 28.04 (30.41)

Q 99.00>83.00 (-) 2.08e5



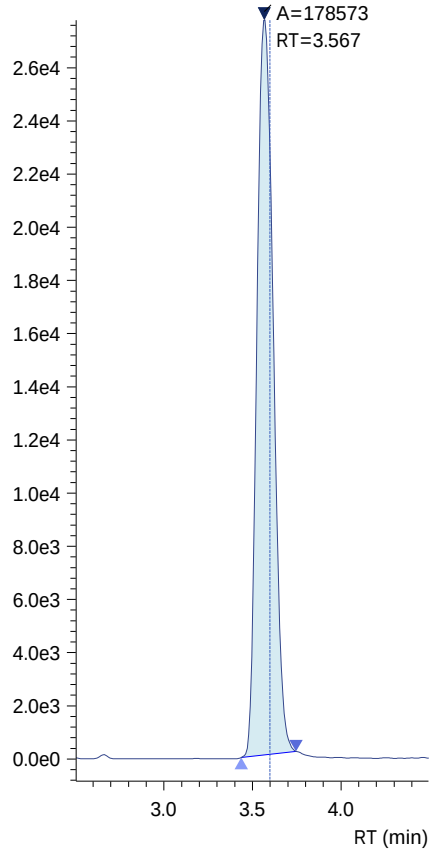

R1 101.00>85.00 (-) 5.90e4




### Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 2.78e4



# Insight Report

Printed at 8/3/2023 9:30:46 AM

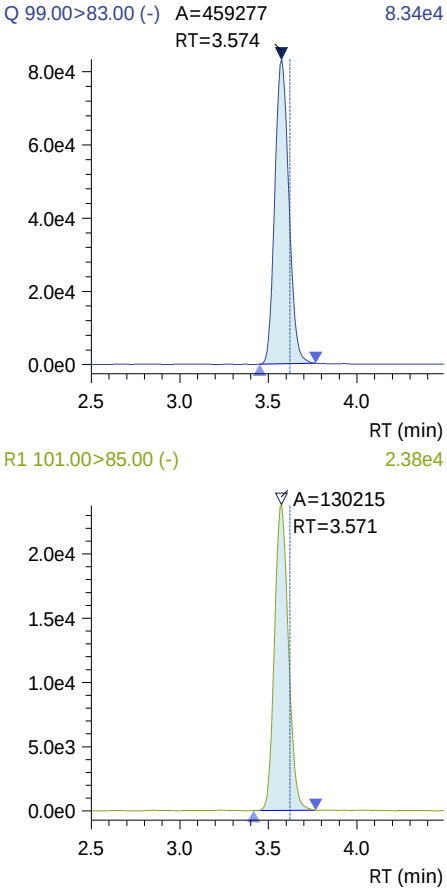
## PerchlorateICV

Sample ID: PerchlorateICV
Date Acquired: 8/2/2023 2:19:46 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230802\2230802-013.lcd
Vial: 11 | Inj. Volume: 10.0000uL | Tray: 1

| Name | Mode ID | Found RT | Area | ISTD Area | Conc. | Unit | Ref 1 m/z | Ref 1 Actual Ratio | Comment 1 |
|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | Auto | 3.574 | 459277 | 291890 | 10.6703 | ng/mL | 101.00 >85.00 | 28.35 | 21.29-39.54 |
| Sodium Perchlorate-18O4_IS | Auto | 3.570 | 291890 | 291890 | 1.0000 | ng/mL | ---- | ---- | |

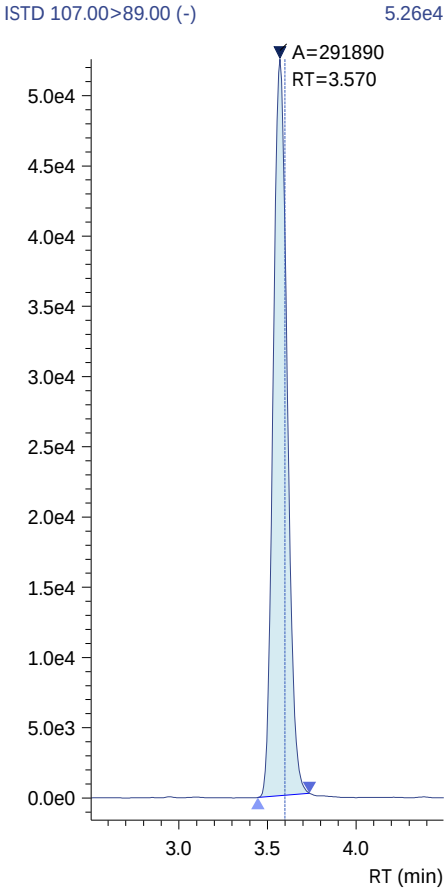
### Perchlorate

Conc 10.6703
R#1 28.35 (30.41)




### Sodium Perchlorate-18O4_IS

Conc 1.0000



# Chromatograms and Selected Ion Monitoring

**ALS Environmental - Houston HRMS**
10450 Stancliff Rd., Suite 320, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

**20230831-815864**

# Injection Log

LCMS01 -Shimadzu 8050

**1st Review: XM**
**2nd Review: GC**

**ICAL Date:** 8/2/2023
**Cal. Std. xp:** 02/02/2024
**ICAL ID:** EC2300012

**Mobile Phases : A:**20mM ammonium acetate in water 230388 **B:**Acetonitrile 229152

| | Sample Name | | File Name | Acquisition Method | Dilution | Comments | Date/Time |
|---|---|---|---|---|---|---|---|
| 1 | IB | | 2230831-001 | Perchlorate6850c.lcm | 1x | | 8/31/2023 10:27 |
| 2 | LODV | | 2230831-002 | Perchlorate6850c.lcm | 1x | 230386 | 8/31/2023 11:08 |
| 3 | ICS | | 2230831-003 | Perchlorate6850c.lcm | 1x | 32103051 | 8/31/2023 11:31 |
| 4 | CCV | | 2230831-004 | Perchlorate6850c.lcm | 1x | 230380 | 8/31/2023 11:37 |
| 5 | EQ2300420-01 | | 2230831-005 | Perchlorate6850c.lcm | 1x | | 8/31/2023 11:43 |
| 6 | EQ2300420-02 | | 2230831-006 | Perchlorate6850c.lcm | 1x | | 8/31/2023 11:53 |
| 7 | EQ2300420-03 | | 2230831-007 | Perchlorate6850c.lcm | 1x | | 8/31/2023 11:58 |
| 8 | E2300771-001 | | 2230831-008 | Perchlorate6850c.lcm | 1x | | 8/31/2023 12:12 |
| 9 | E2300771-002 | | 2230831-009 | Perchlorate6850c.lcm | 500x | | 8/31/2023 12:05 |
| 10 | E2300771-003 | | 2230831-010 | Perchlorate6850c.lcm | 10000x | | 8/31/2023 12:18 |
| 11 | E2300771-004 | | 2230831-011 | Perchlorate6850c.lcm | 1x | DNU-RR | 8/31/2023 12:23 |
| 12 | E2300771-005 | | 2230831-012 | Perchlorate6850c.lcm | 10000x | | 8/31/2023 12:29 |
| 13 | E2300774-001 | | 2230831-013 | Perchlorate6850c.lcm | 10000x | | 8/31/2023 12:34 |
| 14 | E2300774-002 | | 2230831-014 | Perchlorate6850c.lcm | 10000x | | 8/31/2023 12:40 |
| 15 | CCV | | 2230831-015 | Perchlorate6850c.lcm | 1x | 230380 | 8/31/2023 12:45 |
| 16 | E2300774-003 | | 2230831-016 | Perchlorate6850c.lcm | 500x | | 8/31/2023 12:52 |
| 17 | E2300774-004 | | 2230831-017 | Perchlorate6850c.lcm | 10000x | | 8/31/2023 12:57 |
| 18 | E2300774-005 | | 2230831-018 | Perchlorate6850c.lcm | 1000x | | 8/31/2023 13:03 |
| 19 | E2300774-006 | | 2230831-019 | Perchlorate6850c.lcm | 1x | | 8/31/2023 13:08 |
| 20 | E2300774-007 | | 2230831-020 | Perchlorate6850c.lcm | 50x | | 8/31/2023 13:14 |
| 21 | R2307502-004 | | 2230831-021 | Perchlorate6850c.lcm | 1x | | 8/31/2023 13:20 |
| 22 | R2307599-005 | | 2230831-022 | Perchlorate6850c.lcm | 1x | | 8/31/2023 13:25 |
| 23 | R2307599-010 | | 2230831-023 | Perchlorate6850c.lcm | 1x | | 8/31/2023 13:31 |
| 24 | CCV | | 2230831-024 | Perchlorate6850c.lcm | 1x | 230380 | 8/31/2023 13:36 |
| 25 | K2309585-001 | | 2230831-025 | Perchlorate6850c.lcm | 1x | | 8/31/2023 13:42 |
| 26 | K2309585-002 | | 2230831-026 | Perchlorate6850c.lcm | 1x | | 8/31/2023 13:47 |
| 27 | K2309585-003 | | 2230831-027 | Perchlorate6850c.lcm | 1x | | 8/31/2023 13:53 |
| 28 | E2300782-001 | | 2230831-028 | Perchlorate6850c.lcm | 10x | | 8/31/2023 14:27 |
| 29 | E2300782-002 | | 2230831-029 | Perchlorate6850c.lcm | 1x | | 8/31/2023 14:33 |
| 30 | E2300771-004 | | 2230831-030 | Perchlorate6850c.lcm | 5x | | 8/31/2023 14:38 |
| 31 | CCV | | 2230831-031 | Perchlorate6850c.lcm | 1x | 230380 | 8/31/2023 14:45 |

**ALS Group USA, Corp. dba ALS Environmental**

QA/QC Report

| | | | |
|---|---|---|---|
| **Client:** | ALS Environmental - US | **Service Request:** | E2300782 |
| **Project:** | HS23081965 | **Date Analyzed:** | 8/31/23 11:37 |

**Internal Standard Area and RT Summary**

**Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry**

| | | | |
|---|---|---|---|
| **File ID:** | I:\LCMS01\DATA\20230831\2230831-004 | **Lab Code:** | EQ2300424-01 |
| **Instrument ID:** | E-LCMS-01 | **Analysis Lot:** | 815864 |
| **Analytical Method:** | 6850 | **Signal ID:** | 1 |

| | | Sodium Perchlorate-18O4 | |
|---|---|---|---|
| | | **Area** | **RT** |
| | **ICAL Average ==>** | 297,129 | 3.57 |
| | **Upper Limit ==>** | 445,694 | 5.57 |
| | **Lower Limit ==>** | 148,565 | 1.57 |
| ***Associated Analyses*** | | | |
| Continuing Calibration Verification | EQ2300424-01 | 275,571 | 3.58 |
| Method Blank | EQ2300420-01 | 312,457 | 3.57 |
| Lab Control Sample | EQ2300420-02 | 352,379 | 3.58 |
| Duplicate Lab Control Sample | EQ2300420-03 | 346,409 | 3.58 |

**Results flagged with an asterisk (*) indicate values outside control criteria.**

**ALS Group USA, Corp. dba ALS Environmental**

QA/QC Report

| | | | |
|---|---|---|---|
| **Client:** | ALS Environmental - US | **Service Request:** | E2300782 |
| **Project:** | HS23081965 | **Date Analyzed:** | 8/31/23 12:45 |

**Internal Standard Area and RT Summary**

**Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry**

| | | | |
|---|---|---|---|
| **File ID:** | I:\LCMS01\DATA\20230831\2230831-015 | **Lab Code:** | EQ2300424-02 |
| **Instrument ID:** | E-LCMS-01 | **Analysis Lot:** | 815864 |
| **Analytical Method:** | 6850 | **Signal ID:** | 1 |

| | | Sodium Perchlorate-18O4 | |
|---|---|---|---|
| | | **Area** | **RT** |
| | **ICAL Average ==>** | 297,129 | 3.57 |
| | **Upper Limit ==>** | 445,694 | 5.57 |
| | **Lower Limit ==>** | 148,565 | 1.57 |
| ***Associated Analyses*** | | | |
| Continuing Calibration Verification | EQ2300424-02 | 308,836 | 3.57 |

**Results flagged with an asterisk (*) indicate values outside control criteria.**

**ALS Group USA, Corp. dba ALS Environmental**

QA/QC Report

| | | | |
|---|---|---|---|
| **Client:** | ALS Environmental - US | **Service Request:** | E2300782 |
| **Project:** | HS23081965 | **Date Analyzed:** | 8/31/23 13:36 |

**Internal Standard Area and RT Summary**

**Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry**

| | | | |
|---|---|---|---|
| **File ID:** | I:\LCMS01\DATA\20230831\2230831-024 | **Lab Code:** | EQ2300424-03 |
| **Instrument ID:** | E-LCMS-01 | **Analysis Lot:** | 815864 |
| **Analytical Method:** | 6850 | **Signal ID:** | 1 |

| | | Sodium Perchlorate-18O4 | |
|---|---|---|---|
| | | **Area** | **RT** |
| | **ICAL Average ==>** | 297,129 | 3.57 |
| | **Upper Limit ==>** | 445,694 | 5.57 |
| | **Lower Limit ==>** | 148,565 | 1.57 |
| ***Associated Analyses*** | | | |
| Continuing Calibration Verification | EQ2300424-03 | 305,838 | 3.57 |
| LH18/24-SP650_083023_BIX | E2300782-001 | 294,004 | 3.57 |
| LH18/24-SP650_083023_AIX | E2300782-002 | 341,104 | 3.57 |

**Results flagged with an asterisk (*) indicate values outside control criteria.**

**ALS Group USA, Corp. dba ALS Environmental**

QA/QC Report

| | | | |
|---|---|---|---|
| **Client:** | ALS Environmental - US | **Service Request:** | E2300782 |
| **Project:** | HS23081965 | **Date Analyzed:** | 8/31/23 14:45 |

**Internal Standard Area and RT Summary**

**Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry**

| | | | |
|---|---|---|---|
| **File ID:** | I:\LCMS01\DATA\20230831\2230831-031 | **Lab Code:** | EQ2300424-04 |
| **Instrument ID:** | E-LCMS-01 | **Analysis Lot:** | 815864 |
| **Analytical Method:** | 6850 | **Signal ID:** | 1 |

| | | Sodium Perchlorate-18O4 | |
|---|---|---|---|
| | | **Area** | **RT** |
| | **ICAL Average ==>** | 297,129 | 3.57 |
| | **Upper Limit ==>** | 445,694 | 5.57 |
| | **Lower Limit ==>** | 148,565 | 1.57 |
| ***Associated Analyses*** | | | |
| Continuing Calibration Verification | EQ2300424-04 | 309,218 | 3.57 |

**Results flagged with an asterisk (*) indicate values outside control criteria.**

**ALS Group USA, Corp. dba ALS Environmental**

QA/QC Report

**Client:** ALS Environmental - US
**Project:** HS23081965

**Service Request:** E2300782
**Date Analyzed:** 8/31/23

## Continuing Calibration Verification Summary
## Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

**Analytical Method:** 6850
**File ID:** I:\LCMS01\DATA\20230831\2230831-004

**Calibration Date:** 8/2/23
**Calibration ID:** EC2300012
**Analysis Lot:** 815864
**Units:** ng/mL

| Analyte Name | Expected | Result | Average RF | CCV RF | %D | %Drift | Criteria | Curve Fit |
|---|---|---|---|---|---|---|---|---|
| Perchlorate | 10.0 | 9.85 | 0.1475 | 0.1453 | -1.5 | NA | ± 15 % | Average RF |

**ALS Group USA, Corp. dba ALS Environmental**

QA/QC Report

**Client:** ALS Environmental - US
**Project:** HS23081965

**Service Request:** E2300782
**Date Analyzed:** 8/31/23

## Continuing Calibration Verification Summary
## Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

**Analytical Method:** 6850
**File ID:** I:\LCMS01\DATA\20230831\2230831-015

**Calibration Date:** 8/2/23
**Calibration ID:** EC2300012
**Analysis Lot:** 815864
**Units:** ng/mL

| Analyte Name | Expected | Result | Average RF | CCV RF | %D | %Drift | Criteria | Curve Fit |
|---|---|---|---|---|---|---|---|---|
| Perchlorate | 10.0 | 10.0 | 0.1475 | 0.1475 | 0.0 | NA | ± 15 % | Average RF |

**ALS Group USA, Corp. dba ALS Environmental**

QA/QC Report

**Client:** ALS Environmental - US
**Project:** HS23081965

**Service Request:** E2300782
**Date Analyzed:** 8/31/23

## Continuing Calibration Verification Summary
## Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

**Analytical Method:** 6850
**File ID:** I:\LCMS01\DATA\20230831\2230831-024

**Calibration Date:** 8/2/23
**Calibration ID:** EC2300012
**Analysis Lot:** 815864
**Units:** ng/mL

| Analyte Name | Expected | Result | Average RF | CCV RF | %D | %Drift | Criteria | Curve Fit |
|---|---|---|---|---|---|---|---|---|
| Perchlorate | 10.0 | 9.73 | 0.1475 | 0.1435 | -2.7 | NA | ± 15 % | Average RF |

**ALS Group USA, Corp. dba ALS Environmental**

QA/QC Report

**Client:** ALS Environmental - US
**Project:** HS23081965

**Service Request:** E2300782
**Date Analyzed:** 8/31/23

## Continuing Calibration Verification Summary
## Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

**Analytical Method:** 6850
**File ID:** I:\LCMS01\DATA\20230831\2230831-031

**Calibration Date:** 8/2/23
**Calibration ID:** EC2300012
**Analysis Lot:** 815864
**Units:** ng/mL

| Analyte Name | Expected | Result | Average RF | CCV RF | %D | %Drift | Criteria | Curve Fit |
|---|---|---|---|---|---|---|---|---|
| Perchlorate | 10.0 | 9.81 | 0.1475 | 0.1446 | -1.9 | NA | ± 15 % | Average RF |

# Insight Report

Printed at 8/31/2023 3:03:11 PM

Method File: I:\LCMS01\DATA\20230831\20230831.lcm
Project File: I:\LCMS01\DATA\20230831\20230831.damlp

## IB

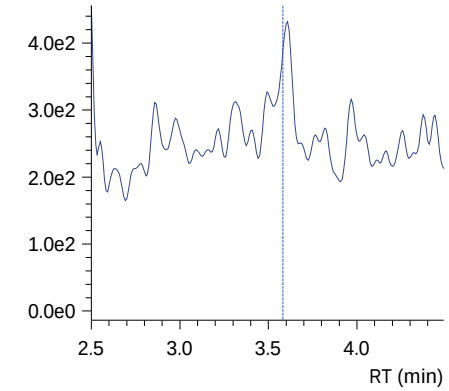
Sample ID: IB
Date Acquired: 8/31/2023 10:27:55 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230831\2230831-001.lcd
Vial: 4 | Inj. Volume: 10.0000uL | Tray: 0

| Name | Mode ID | Found RT | Area | ISTD Area | Conc. | Unit | Ref 1 m/z | Ref 1 Actual Ratio | Comment 1 |
|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | ND(W/B) | ---- | ---- | 437977 | ---- | ng/mL | 101.00 >85.00 | 0.00 | 19.37-35.97 |
| Sodium Perchlorate-18O4_IS | Auto | 3.577 | 437977 | 437977 | 1.0000 | ng/mL | ---- | ---- | |

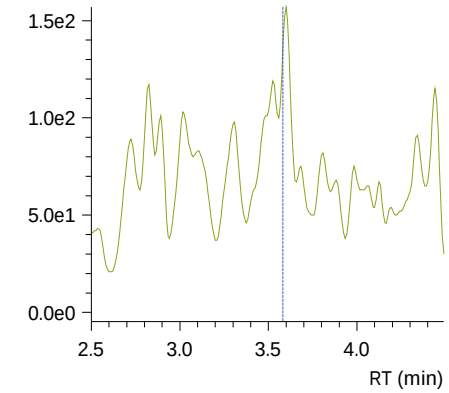
### Perchlorate

Conc ----
R#1 0.00 (27.67)

Q 99.00>83.00 (-) 4.56e2



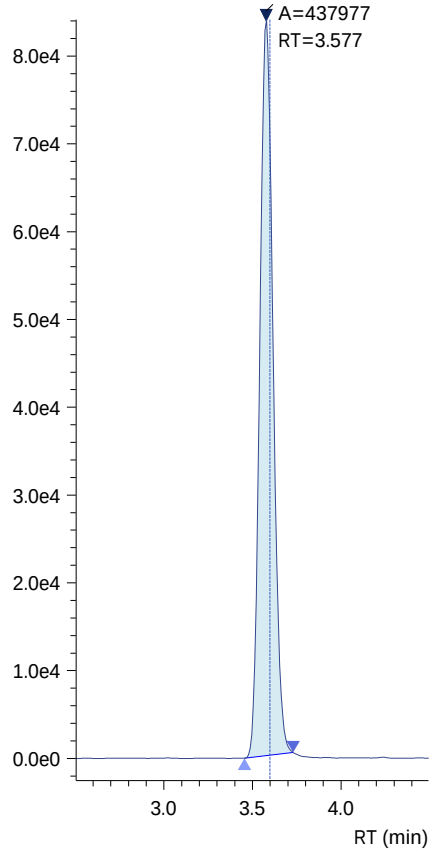

R1 101.00>85.00 (-) 1.57e2




### Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 8.42e4



# Insight Report

Printed at 8/31/2023 3:03:11 PM

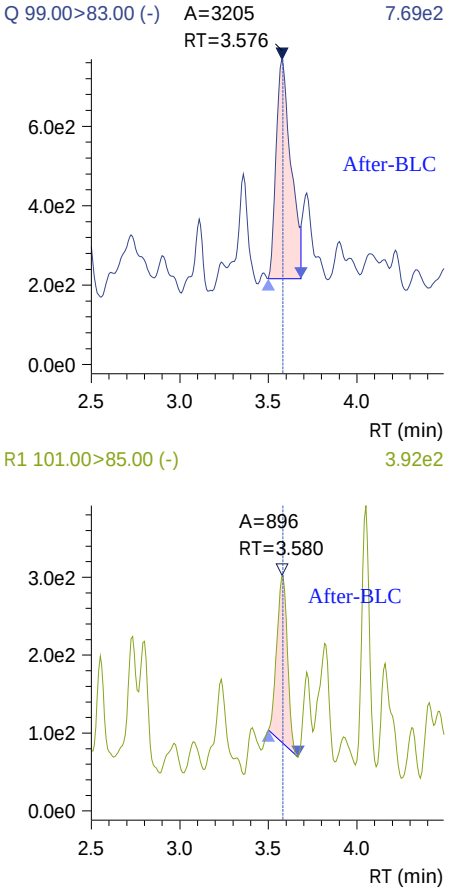
## LODV

Sample ID: LODV
Date Acquired: 8/31/2023 11:08:04 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230831\2230831-002.lcd
Vial: 12 | Inj. Volume: 10.0000uL | Tray: 1

| Name | Mode ID | Found RT | Area | ISTD Area | Conc. | Unit | Ref 1 m/z | Ref 1 Actual Ratio | Comment 1 |
|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | M | 3.576 | 3205 | 375177 | 0.0579 | ng/mL | 101.00 >85.00 | 27.95 | 19.37-35.97 |
| Sodium Perchlorate-18O4 _IS | Auto | 3.575 | 3751 77 | 375177 | 1.0000 | ng/mL | ---- | ---- | |

### Perchlorate

Conc 0.0579
R#1 27.95 (27.67)

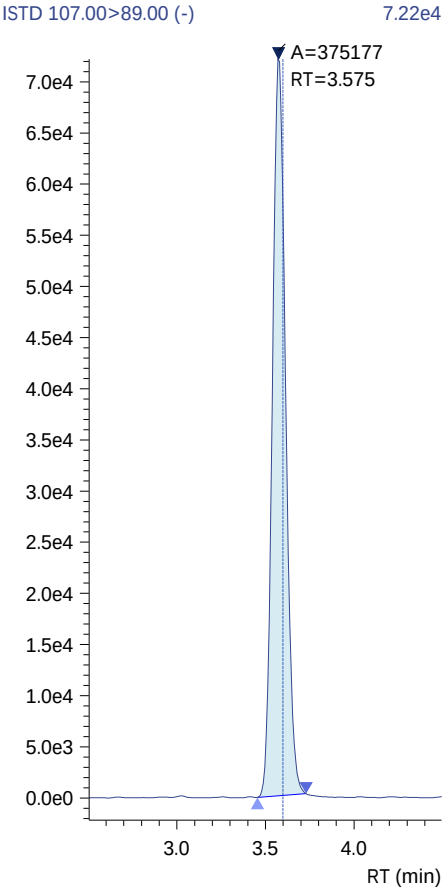






### Sodium Perchlorate-18O4_IS

Conc 1.0000



# Insight Report

Printed at 8/31/2023 3:09:30 PM

Method File: I:\LCMS01\DATA\20230831\20230831.lcm
Project File: I:\LCMS01\DATA\20230831\20230831.damlp

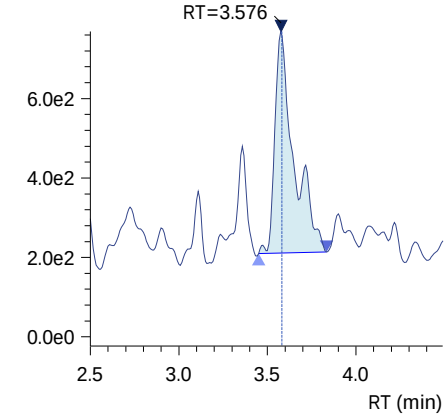
## LODV

Sample ID: LODV
Date Acquired: 8/31/2023 11:08:04 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230831\2230831-002.lcd
Vial: 12 | Inj. Volume: 10.0000uL | Tray: 1

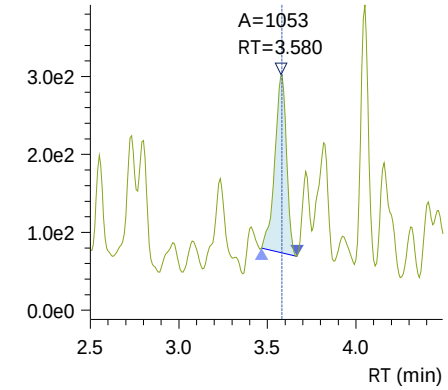
### Perchlorate

Conc 0.0758
R#1 25.13 (27.67)

Q 99.00>83.00 (-) A=4192 RT=3.576 7.69e2



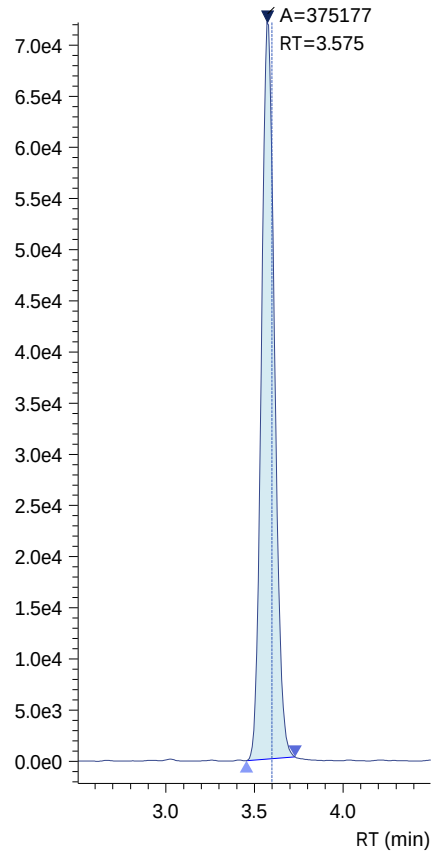

R1 101.00>85.00 (-) 3.92e2




### Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 7.22e4



# Insight Report

Printed at 8/31/2023 3:03:11 PM

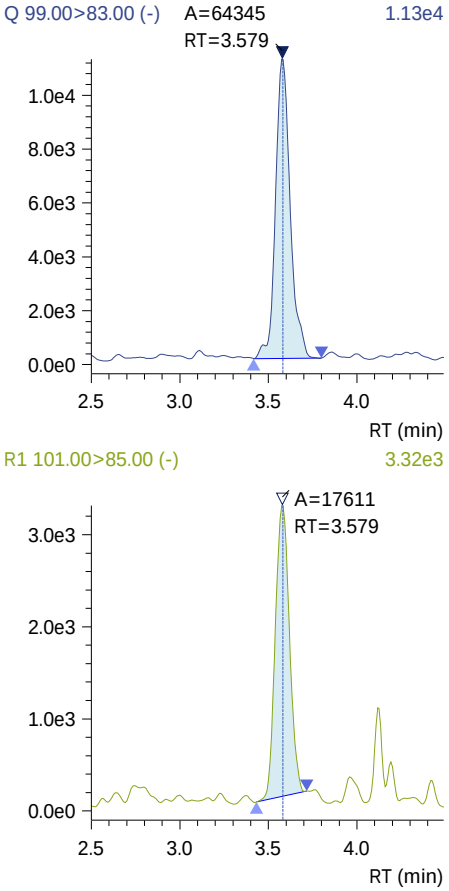
## ICS

Sample ID: ICS
Date Acquired: 8/31/2023 11:31:31 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230831\2230831-003.lcd
Vial: 2 | Inj. Volume: 10.0000uL | Tray: 0

| Name | Mode ID | Found RT | Area | ISTD Area | Conc. | Unit | Ref 1 m/z | Ref 1 Actual Ratio | Comment 1 |
|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | Auto | 3.579 | 64345 | 392211 | 1.1125 | ng/mL | 101.00 >85.00 | 27.37 | 19.37-35.97 |
| Sodium Perchlorate-18O4 _IS | Auto | 3.576 | 3922 11 | 392211 | 1.0000 | ng/mL | ---- | ---- | |

### Perchlorate

Conc 1.1125
R#1 27.37 (27.67)

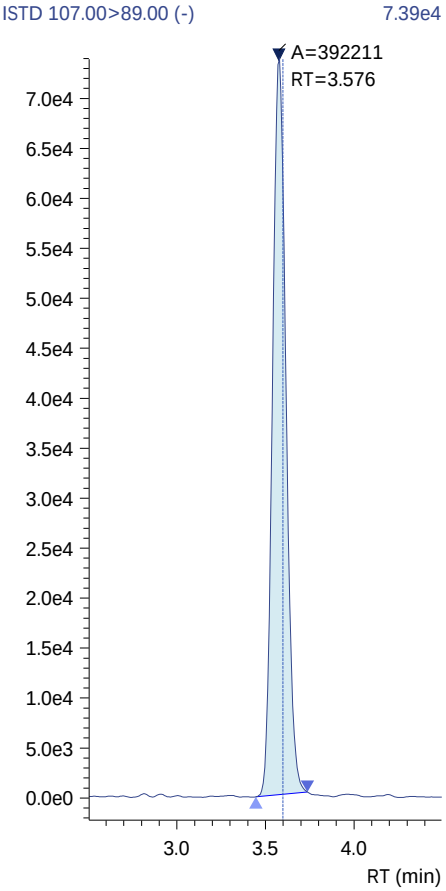






### Sodium Perchlorate-18O4_IS

Conc 1.0000



# Insight Report

Printed at 8/31/2023 3:03:11 PM

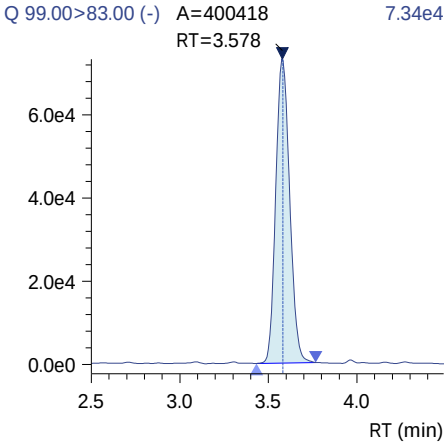
## CCV

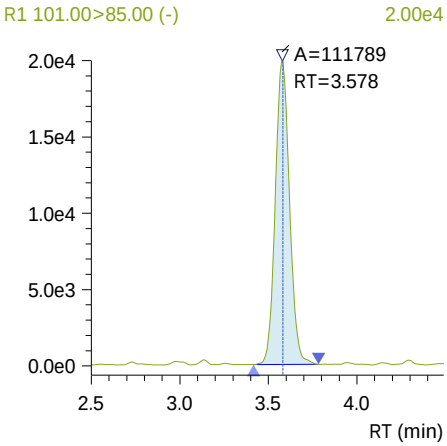
Sample ID: CCV
Date Acquired: 8/31/2023 11:37:39 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230831\2230831-004.lcd
Vial: 7 | Inj. Volume: 10.0000uL | Tray: 1

| Name | Mode ID | Found RT | Area | ISTD Area | Conc. | Unit | Ref 1 m/z | Ref 1 Actual Ratio | Comment 1 |
|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | Auto | 3.578 | 400418 | 275571 | 9.8537 | ng/mL | 101.00 >85.00 | 27.92 | 19.37-35.97 |
| Sodium Perchlorate-18O4_IS | Auto | 3.576 | 275571 | 275571 | 1.0000 | ng/mL | ---- | ---- | |

### Perchlorate

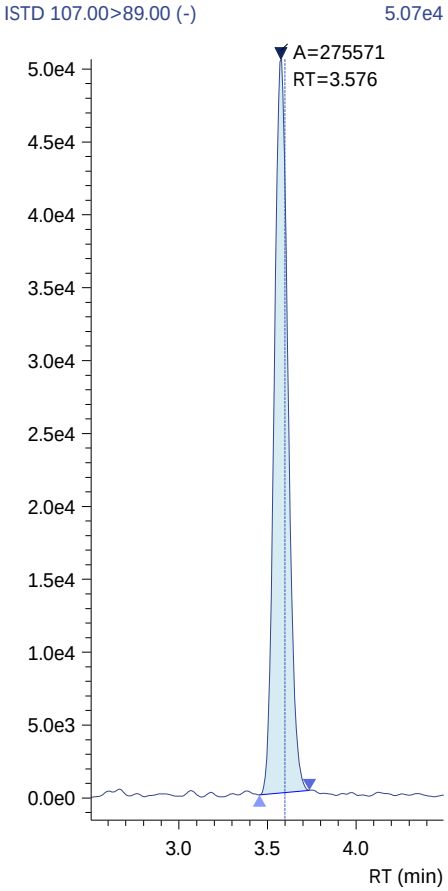
Conc 9.8537
R#1 27.92 (27.67)




### Sodium Perchlorate-18O4_IS

Conc 1.0000



# Insight Report

Printed at 8/31/2023 3:03:11 PM

## EQ2300420-01

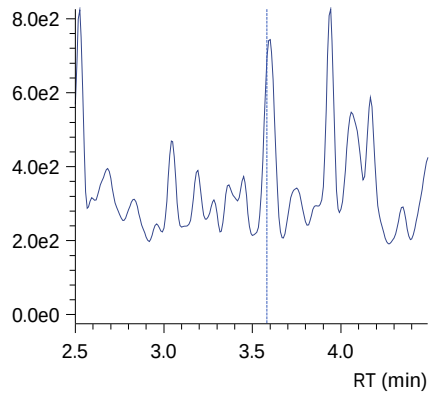
Sample ID: EQ2300420-01
Date Acquired: 8/31/2023 11:43:10 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230831\2230831-005.lcd
Vial: 37 | Inj. Volume: 10.0000uL | Tray: 4

| Name | Mode ID | Found RT | Area | ISTD Area | Conc. | Unit | Ref 1 m/z | Ref 1 Actual Ratio | Comment 1 |
|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | ND(W/B) | ---- | ---- | 312457 | ---- | ng/mL | 101.00 >85.00 | 0.00 | 19.37-35.97 |
| Sodium Perchlorate-18O4_IS | Auto | 3.574 | 312457 | 312457 | 1.0000 | ng/mL | ---- | ---- | |

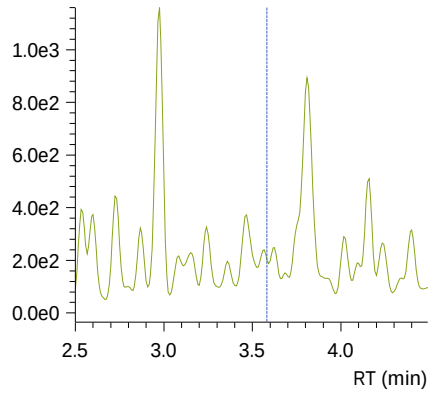
### Perchlorate

Conc ----
R#1 0.00 (27.67)

Q 99.00>83.00 (-) 8.26e2



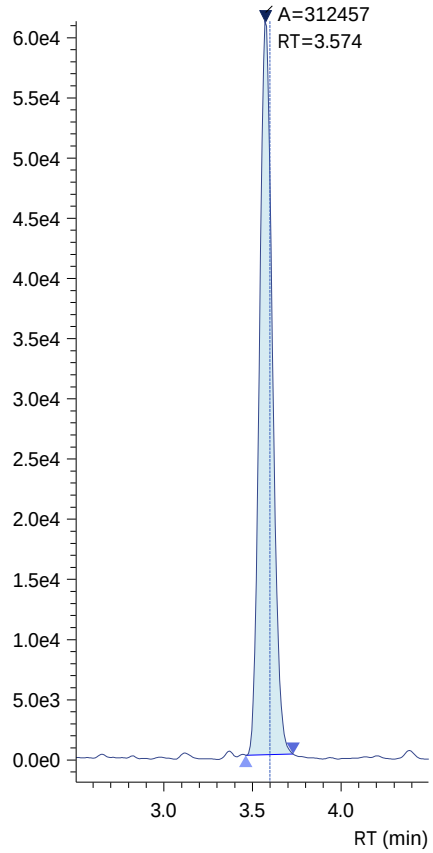

R1 101.00>85.00 (-) 1.16e3




### Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 6.14e4



# Insight Report

Printed at 8/31/2023 3:03:11 PM

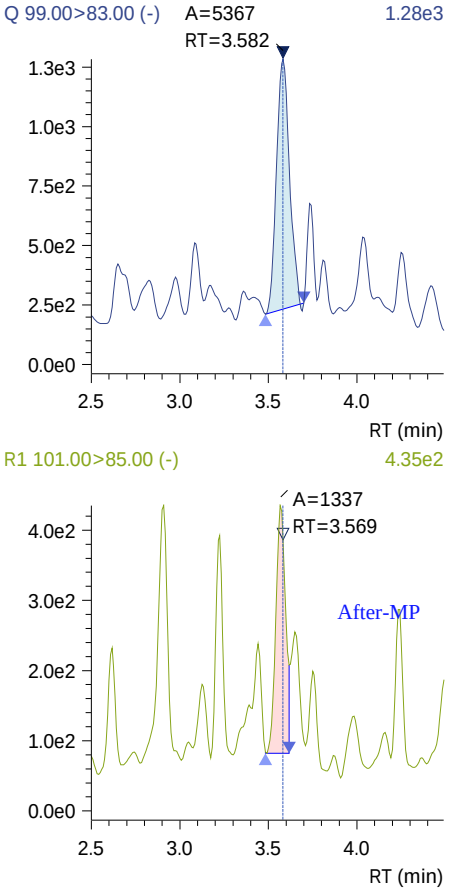
## EQ2300420-02

Sample ID: EQ2300420-02
Date Acquired: 8/31/2023 11:53:24 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230831\2230831-006.lcd
Vial: 38 | Inj. Volume: 10.0000uL | Tray: 4

| Name | Mode ID | Found RT | Area | ISTD Area | Conc. | Unit | Ref 1 m/z | Ref 1 Actual Ratio | Comment 1 |
|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | MI R1 | 3.582 | 5367 | 352379 | 0.1033 | ng/mL | 101.00 >85.00 | 24.90 | 19.37-35.97 |
| Sodium Perchlorate-18O4 _IS | Auto | 3.576 | 3523 79 | 352379 | 1.0000 | ng/mL | ---- | ---- | |

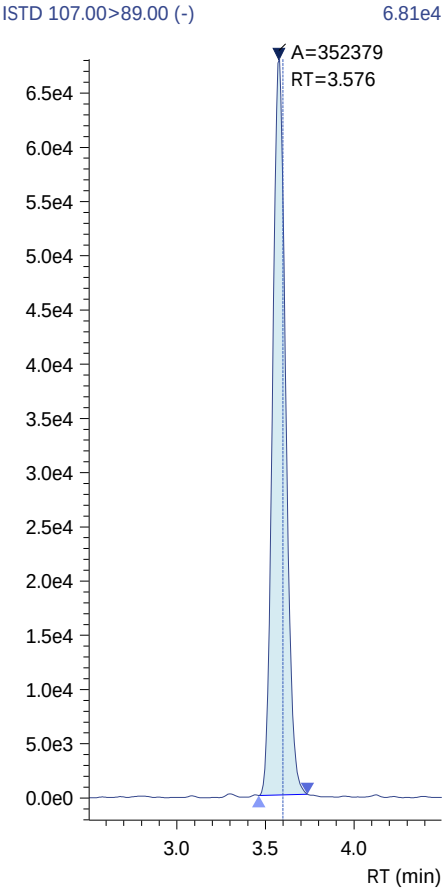
### Perchlorate

Conc 0.1033
R#1 24.90 (27.67)




### Sodium Perchlorate-18O4_IS

Conc 1.0000



# Insight Report

Printed at 8/31/2023 3:06:25 PM

Method File: I:\LCMS01\DATA\20230831\20230831.lcm
Project File: I:\LCMS01\DATA\20230831\20230831.damlp

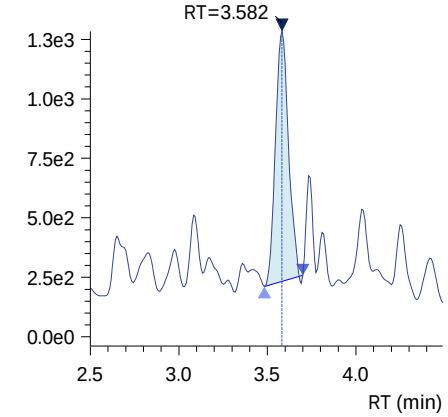
## EQ2300420-02

Sample ID: EQ2300420-02
Date Acquired: 8/31/2023 11:53:24 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230831\2230831-006.lcd
Vial: 38 | Inj. Volume: 10.0000uL | Tray: 4

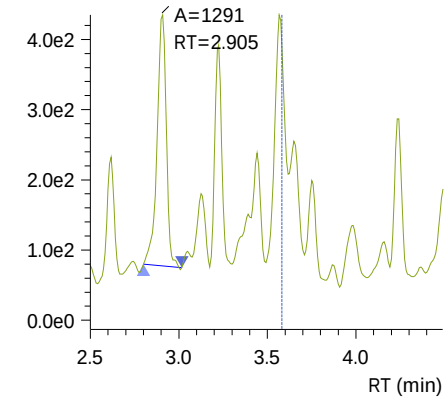
### Perchlorate

Conc 0.1033
R#1 0.00 (27.67)

Q 99.00>83.00 (-) A=5367 1.28e3



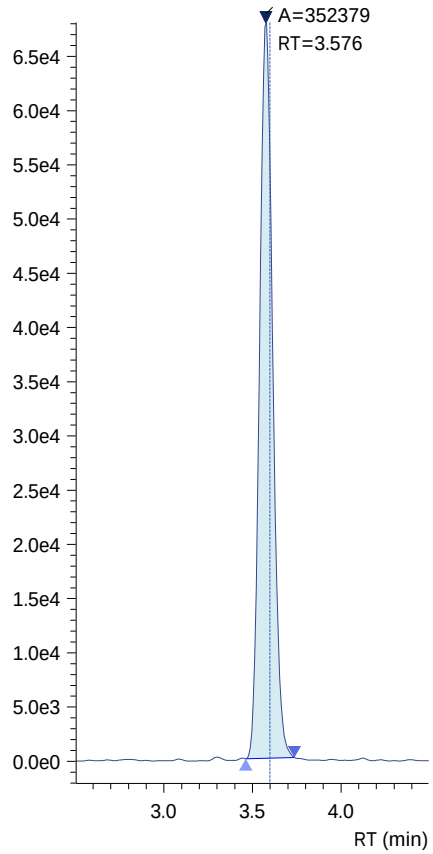

R1 101.00>85.00 (-) 4.35e2




### Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 6.81e4



# Insight Report

Printed at 8/31/2023 3:03:11 PM

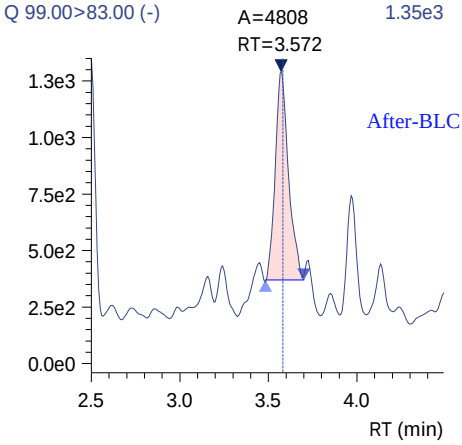
## EQ2300420-03

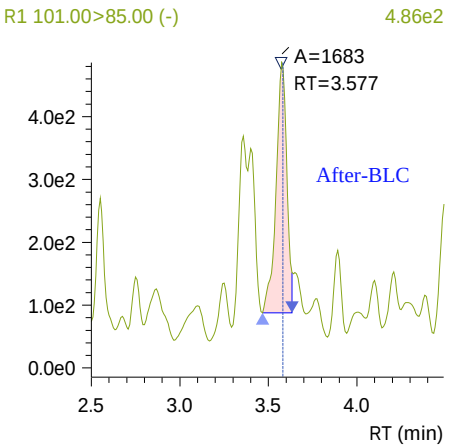
Sample ID: EQ2300420-03
Date Acquired: 8/31/2023 11:58:54 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230831\2230831-007.lcd
Vial: 39 | Inj. Volume: 10.0000uL | Tray: 4

| Name | Mode ID | Found RT | Area | ISTD Area | Conc. | Unit | Ref 1 m/z | Ref 1 Actual Ratio | Comment 1 |
|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | M | 3.572 | 4808 | 346409 | 0.0941 | ng/mL | 101.00 >85.00 | 35.00 | 19.37-35.97 |
| Sodium Perchlorate-18O4 _IS | Auto | 3.575 | 346409 | 346409 | 1.0000 | ng/mL | ---- | ---- | |

### Perchlorate

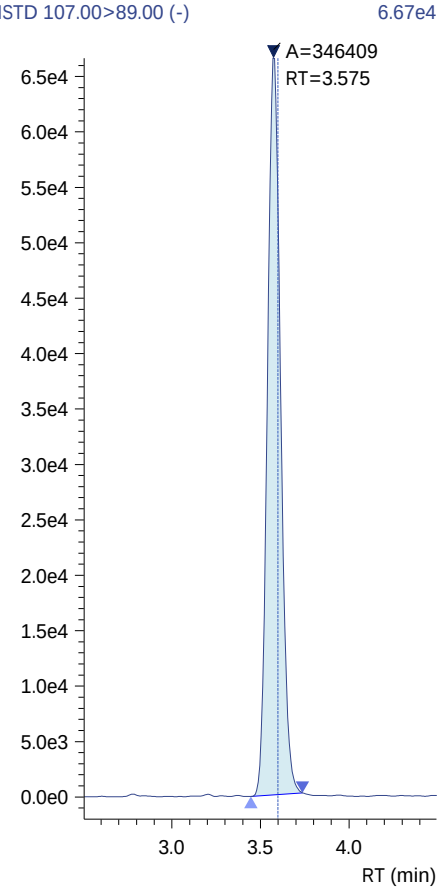
Conc 0.0941
R#1 35.00 (27.67)




### Sodium Perchlorate-18O4_IS

Conc 1.0000



# Insight Report

Printed at 8/31/2023 3:06:25 PM

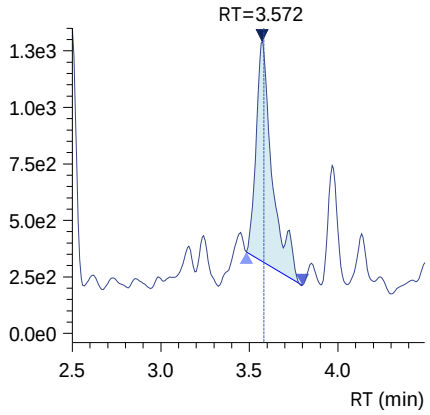
## EQ2300420-03

Sample ID: EQ2300420-03
Date Acquired: 8/31/2023 11:58:54 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230831\2230831-007.lcd
Vial: 39 | Inj. Volume: 10.0000uL | Tray: 4

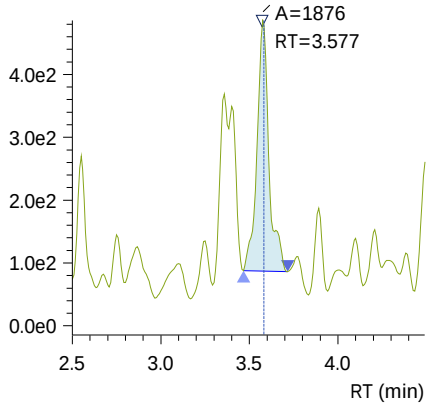
### Perchlorate

Conc 0.1204
R#1 30.49 (27.67)

Q 99.00>83.00 (-) 1.35e3



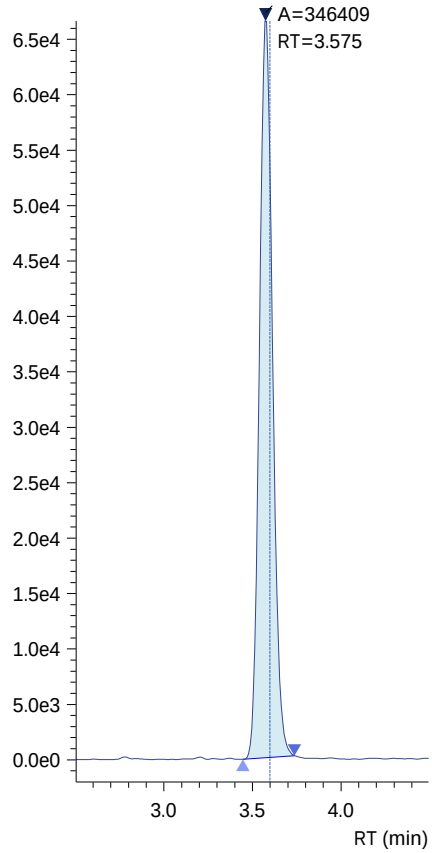

R1 101.00>85.00 (-) 4.86e2




### Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 6.67e4



# Insight Report

Printed at 8/31/2023 3:03:11 PM

## CCV

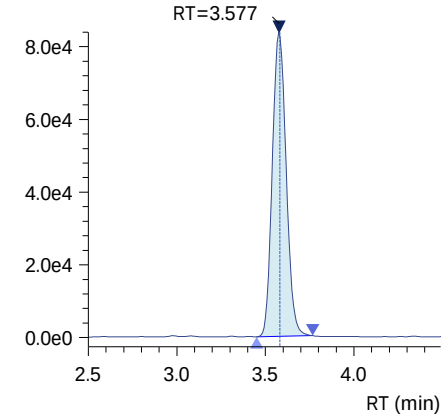
Sample ID: CCV
Date Acquired: 8/31/2023 12:45:40 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230831\2230831-015.lcd
Vial: 7 | Inj. Volume: 10.0000uL | Tray: 1

| Name | Mode ID | Found RT | Area | ISTD Area | Conc. | Unit | Ref 1 m/z | Ref 1 Actual Ratio | Comment 1 |
|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | Auto | 3.577 | 4556 33 | 308836 | 10.00 48 | ng/mL | 101.00 >85.00 | 27.02 | 19.37-35.97 |
| Sodium Perchlorate-18O4 _IS | Auto | 3.572 | 3088 36 | 308836 | 1.0000 | ng/mL | ---- | ---- | |

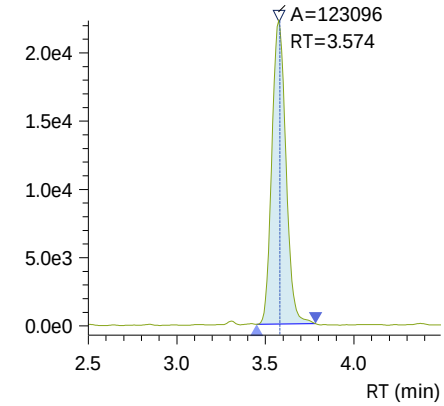
### Perchlorate

Conc 10.0048
R#1 27.02 (27.67)

Q 99.00>83.00 (-) A=455633 8.40e4



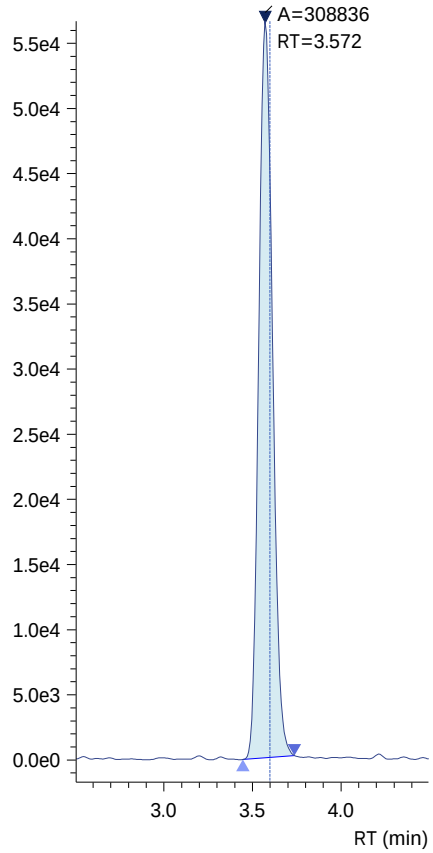

R1 101.00>85.00 (-) 2.24e4




### Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 5.67e4



# Insight Report

Printed at 8/31/2023 3:03:11 PM

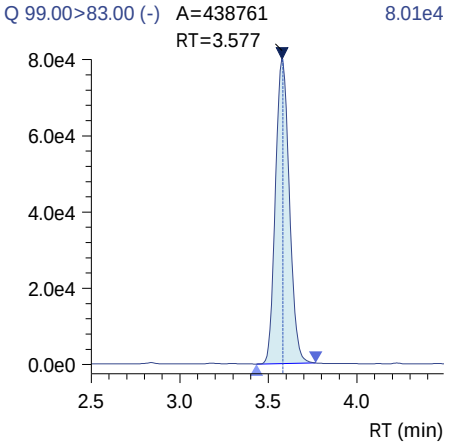
## CCV

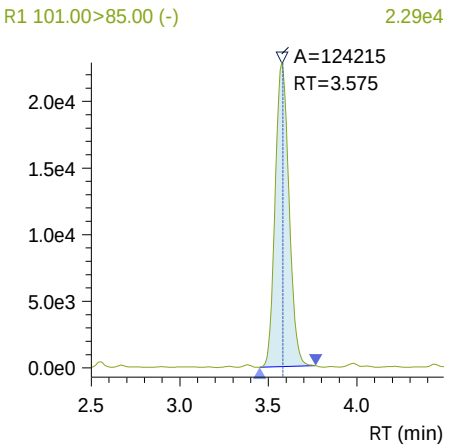
Sample ID: CCV
Date Acquired: 8/31/2023 1:36:43 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230831\2230831-024.lcd
Vial: 7 | Inj. Volume: 10.0000uL | Tray: 1

| Name | Mode ID | Found RT | Area | ISTD Area | Conc. | Unit | Ref 1 m/z | Ref 1 Actual Ratio | Comment 1 |
|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | Auto | 3.577 | 438761 | 305838 | 9.7288 | ng/mL | 101.00 >85.00 | 28.31 | 19.37-35.97 |
| Sodium Perchlorate-18O4_IS | Auto | 3.573 | 305838 | 305838 | 1.0000 | ng/mL | ---- | ---- | |

### Perchlorate

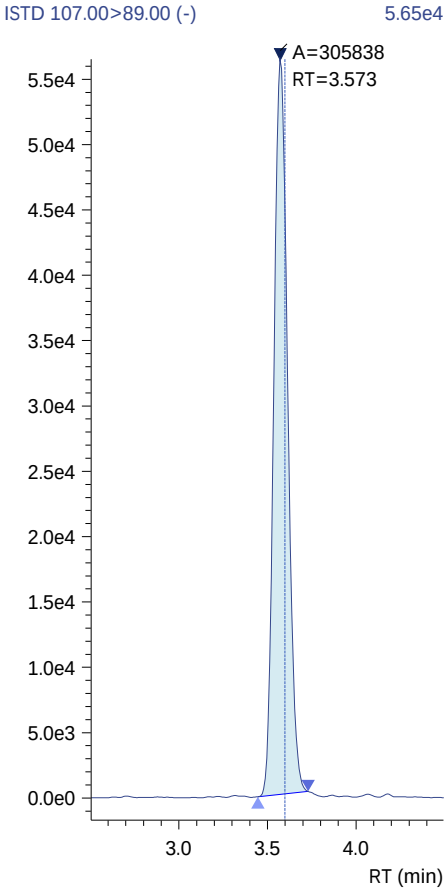
Conc 9.7288
R#1 28.31 (27.67)




### Sodium Perchlorate-18O4_IS

Conc 1.0000



# Insight Report

Printed at 8/31/2023 3:03:11 PM

## E2300782-001x10

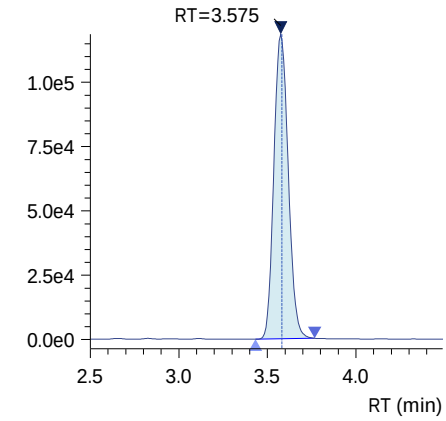
Sample ID: E2300782-001
Date Acquired: 8/31/2023 2:27:37 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230831\2230831-028.lcd
Vial: 5 | Inj. Volume: 10.0000uL | Tray: 5

| Name | Mode ID | Found RT | Area | ISTD Area | Conc. | Unit | Ref 1 m/z | Ref 1 Actual Ratio | Comment 1 |
|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | Auto | 3.575 | 668388 | 294004 | 15.41 69 | ng/mL | 101.00 >85.00 | 28.29 | 19.37-35.97 |
| Sodium Perchlorate-18O4_IS | Auto | 3.571 | 294004 | 294004 | 1.0000 | ng/mL | ---- | ---- | |

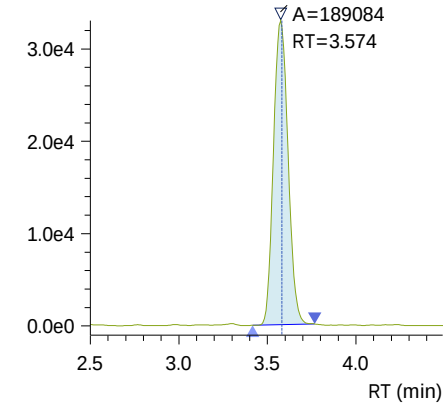
### Perchlorate

Conc 15.4169
R#1 28.29 (27.67)

Q 99.00>83.00 (-) A=668388 1.19e5



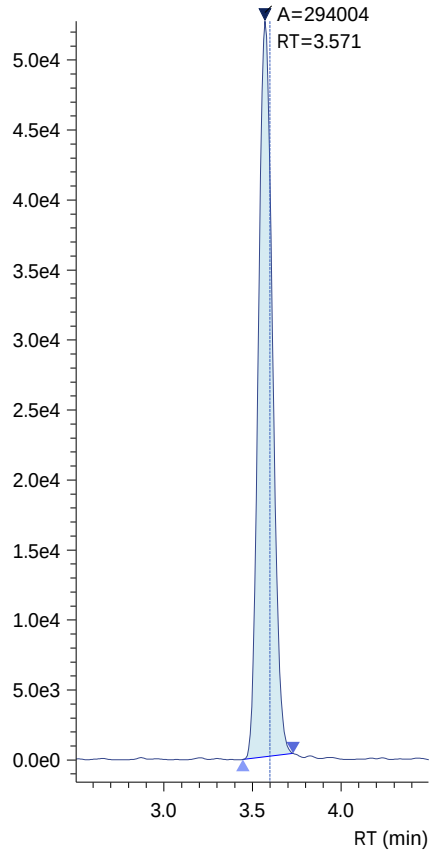

R1 101.00>85.00 (-) 3.31e4




### Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 5.28e4



# Insight Report

Printed at 8/31/2023 3:03:11 PM

## E2300782-002

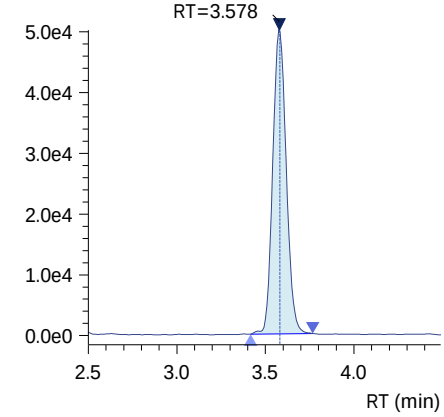
Sample ID: E2300782-002
Date Acquired: 8/31/2023 2:33:10 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230831\2230831-029.lcd
Vial: 6 | Inj. Volume: 10.0000uL | Tray: 5

| Name | Mode ID | Found RT | Area | ISTD Area | Conc. | Unit | Ref 1 m/z | Ref 1 Actual Ratio | Comment 1 |
|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | Auto | 3.578 | 266054 | 341104 | 5.2894 | ng/mL | 101.00 >85.00 | 27.89 | 19.37-35.97 |
| Sodium Perchlorate-18O4_IS | Auto | 3.574 | 341104 | 341104 | 1.0000 | ng/mL | ---- | ---- | |

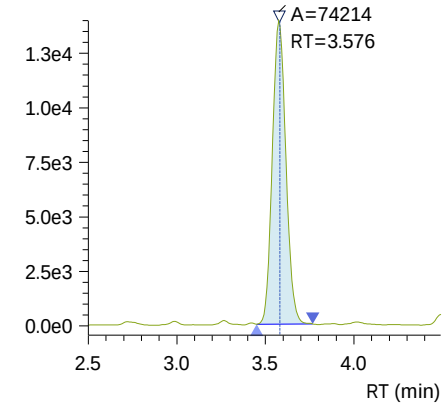
### Perchlorate

Conc 5.2894
R#1 27.89 (27.67)

Q 99.00>83.00 (-) A=266054 RT=3.578 5.03e4



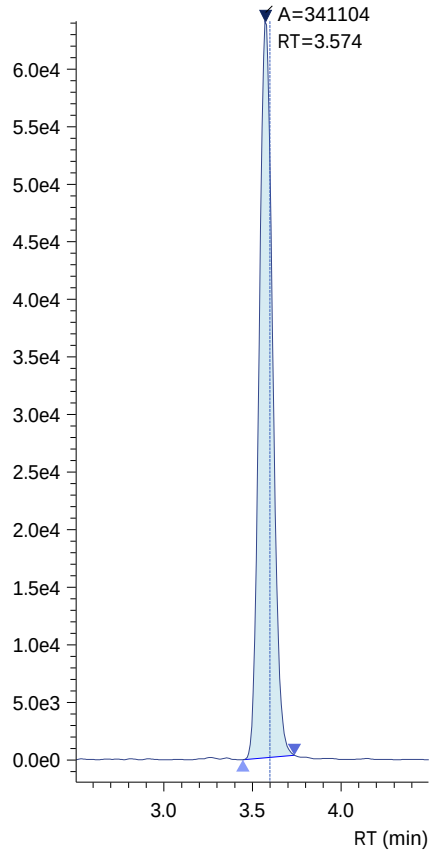

R1 101.00>85.00 (-) 1.40e4




### Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 6.42e4



# Insight Report

Printed at 8/31/2023 3:03:11 PM

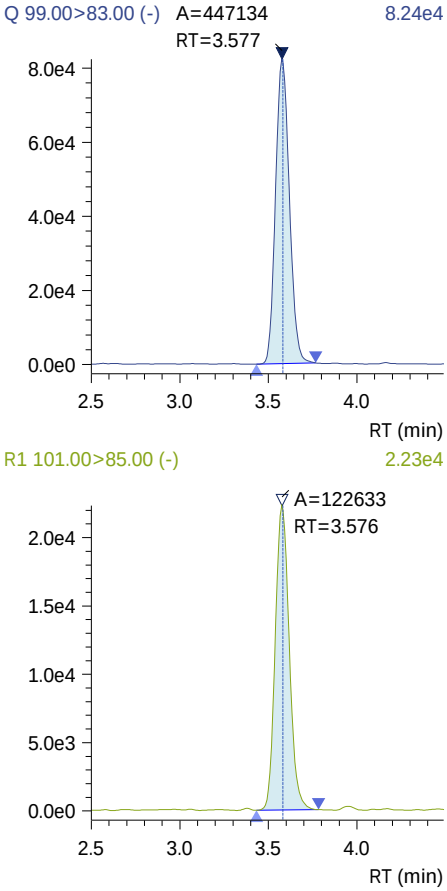
## CCV

Sample ID: CCV
Date Acquired: 8/31/2023 2:45:32 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230831\2230831-031.lcd
Vial: 7 | Inj. Volume: 10.0000uL | Tray: 1

| Name | Mode ID | Found RT | Area | ISTD Area | Conc. | Unit | Ref 1 m/z | Ref 1 Actual Ratio | Comment 1 |
|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | Auto | 3.577 | 447134 | 309218 | 9.8060 | ng/mL | 101.00 >85.00 | 27.43 | 19.37-35.97 |
| Sodium Perchlorate-18O4_IS | Auto | 3.573 | 309218 | 309218 | 1.0000 | ng/mL | ---- | ---- | |

### Perchlorate

Conc 9.8060
R#1 27.43 (27.67)

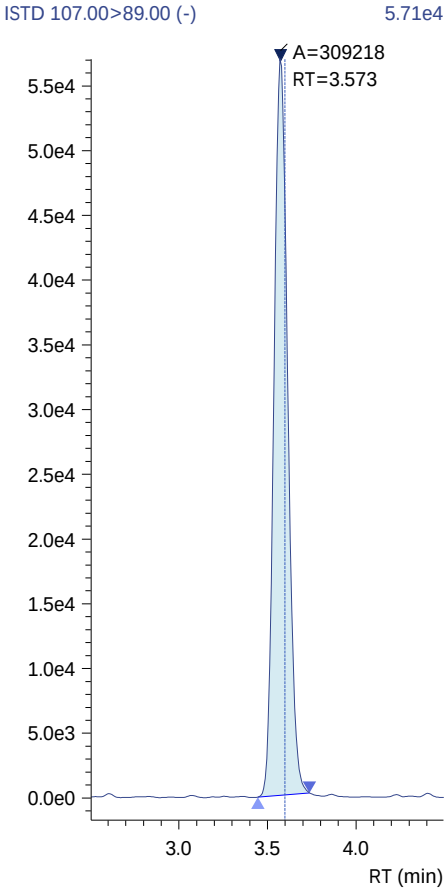






### Sodium Perchlorate-18O4_IS

Conc 1.0000



# HS23091823 GROUNDWATER TREATMENT PLANT WEEKLY SAMPLES Cover Page

ALS WO# HS23091823

ALS Environmental
ALS Group USA, Corp
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Houston, TX 77099
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**F :** +1 281 530 5887
**www.alsglobal.com**

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Houston, TX 77099
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F: +1 281 530 5887
alsglobal.com

# WorkOrder: HS23091823

## GROUNDWATER TREATMENT PLANT WEEKLY SAMPLES

## Bhate Environmental Associates, Inc.

Marcia Olive
445 Union Blvd Ste 129
Lakewood CO 80228

**04-Oct-2023**

# HS23091823 GROUNDWATER TREATMENT PLANT WEEKLY SAMPLES Final

ALS WO# HS23091823

10450 Stancliff Rd. Suite 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887

October 04, 2023

Marcia Olive
Bhate Environmental Associates, Inc.
445 Union Blvd Ste 129
Lakewood, CO 80228

Work Order: **HS23091823**

Laboratory Results for: **GROUNDWATER TREATMENT PLANT WEEKLY SAMPLES**

Dear Marcia Olive,

ALS Environmental received 3 sample(s) on Sep 29, 2023 for the analysis presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

**Generated By: JUMOKE.LAWAL**
James Guin

**ALS Houston, US** Date: 04-Oct-23

**Client:** Bhate Environmental Associates, Inc.
**Project:** GROUNDWATER TREATMENT PLANT WEEKLY SAMPLES
**Work Order:** HS23091823

## SAMPLE SUMMARY

| Lab Samp ID | Client Sample ID | Matrix | TagNo | Collection Date | Date Received | Hold |
|---|---|---|---|---|---|---|
| HS23091823-01 | LH18/24-SP650_092823 | Water | | 28-Sep-2023 13:00 | 29-Sep-2023 09:20 | ☐ |
| HS23091823-02 | LH18/24-SP650_092823_BIX | Water | | 28-Sep-2023 13:00 | 29-Sep-2023 09:20 | ☐ |
| HS23091823-03 | LH18/24-SP650_092823_AIX | Water | | 28-Sep-2023 13:00 | 29-Sep-2023 09:20 | ☐ |

**ALS Houston, US** Date: 04-Oct-23

**Client:** Bhate Environmental Associates, Inc. **CASE NARRATIVE**
**Project:** GROUNDWATER TREATMENT PLANT WEEKLY SAMPLES
**Work Order:** HS23091823

## Work Order Comments

- The analysis for Perchlorate was subcontracted to ALS Houston High-Res Lab. Final report attached

## WetChemistry by Method E350.3

### Batch ID: R448115

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

## WetChemistry by Method E415.1

### Batch ID: R448001

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

## WetChemistry by Method E365.3

### Batch ID: R447881

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

**ALS Houston, US** Date: 04-Oct-23

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**

Project: GROUNDWATER TREATMENT PLANT WEEKLY SAMPLES WorkOrder:HS23091823

Sample ID: LH18/24-SP650_092823 Lab ID:HS23091823-01

Collection Date: 28-Sep-2023 13:00 Matrix:Water

| ANALYSES | RESULT | QUAL | DL | LOD | LOQ | UNITS | DILUTION FACTOR | DATE ANALYZED |
|---|---|---|---|---|---|---|---|---|
| **AMMONIA AS N BY E350.3(ISE)** | | **Method:E350.3** | | | | | | Analyst: AB |
| **Nitrogen, Ammonia (As N)** | **17** | a | **0.10** | **0.20** | **0.20** | **mg/L** | 1 | 04-Oct-2023 12:00 |
| **ORTHO PHOSPHATE (PO4) AS P BY E365.3-1978** | | **Method:E365.3** | | | | | | Analyst: MZD |
| **Phosphorus, Total Orthophosphate (As P)** | **3.21** | a | **0.100** | **0.250** | **0.250** | **mg/L** | 10 | 29-Sep-2023 17:00 |
| **TOTAL ORGANIC CARBON BY E415.1** | | **Method:E415.1** | | | | | | Analyst: DW |
| **Organic Carbon, Total** | **6.38** | a | **0.500** | **1.00** | **1.00** | **mg/L** | 1 | 02-Oct-2023 13:03 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

**ALS Houston, US** Date: 04-Oct-23

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**

Project: GROUNDWATER TREATMENT PLANT WEEKLY SAMPLES WorkOrder:HS23091823

Sample ID: LH18/24-SP650_092823_BIX Lab ID:HS23091823-02

Collection Date: 28-Sep-2023 13:00 Matrix:Water

| ANALYSES | RESULT | QUAL | DL | LOD | LOQ | UNITS | DILUTION FACTOR | DATE ANALYZED |
|---|---|---|---|---|---|---|---|---|
| **SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)** | | **Method:NA** | | | | | | Analyst: SUB |
| Subcontract Analysis | See Attached | | 0 | 0 | | NA | 1 | 02-Oct-2023 15:19 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

**ALS Houston, US** Date: 04-Oct-23

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**
Project: GROUNDWATER TREATMENT PLANT WEEKLY SAMPLES WorkOrder:HS23091823
Sample ID: LH18/24-SP650_092823_AIX Lab ID:HS23091823-03
Collection Date: 28-Sep-2023 13:00 Matrix:Water

| ANALYSES | RESULT | QUAL | DL | LOD | LOQ | UNITS | DILUTION FACTOR | DATE ANALYZED |
|---|---|---|---|---|---|---|---|---|
| **SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)** | | **Method:NA** | | | | | | Analyst: SUB |
| Subcontract Analysis | See Attached | | 0 | 0 | | NA | 1 | 02-Oct-2023 15:19 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

**ALS Houston, US** Date: 04-Oct-23

**Client:** Bhate Environmental Associates, Inc.
**Project:** GROUNDWATER TREATMENT PLANT WEEKLY SAMPLES
**WorkOrder:** HS23091823

## DATES REPORT

| Sample ID | Client Samp ID | Collection Date | Leachate Date | Prep Date | Analysis Date | DF |
|---|---|---|---|---|---|---|
| **Batch ID:** R447881 ( 0 ) | **Test Name :** ORTHO PHOSPHATE (PO4) AS P BY E365.3-1978 | | | | **Matrix:** Water | |
| HS23091823-01 | LH18/24-SP650_092823 | 28 Sep 2023 13:00 | | | 29 Sep 2023 17:00 | 10 |
| **Batch ID:** R447920 ( 0 ) | **Test Name :** SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850) | | | | **Matrix:** Water | |
| HS23091823-02 | LH18/24-SP650_092823_BIX | 28 Sep 2023 13:00 | | | 02 Oct 2023 15:19 | 1 |
| HS23091823-03 | LH18/24-SP650_092823_AIX | 28 Sep 2023 13:00 | | | 02 Oct 2023 15:19 | 1 |
| **Batch ID:** R448001 ( 0 ) | **Test Name :** TOTAL ORGANIC CARBON BY E415.1 | | | | **Matrix:** Water | |
| HS23091823-01 | LH18/24-SP650_092823 | 28 Sep 2023 13:00 | | | 02 Oct 2023 13:03 | 1 |
| **Batch ID:** R448115 ( 0 ) | **Test Name :** AMMONIA AS N BY E350.3(ISE) | | | | **Matrix:** Water | |
| HS23091823-01 | LH18/24-SP650_092823 | 28 Sep 2023 13:00 | | | 04 Oct 2023 12:00 | 1 |

**ALS Houston, US** Date: 04-Oct-23

**Client:** Bhate Environmental Associates, Inc.
**Project:** GROUNDWATER TREATMENT PLANT WEEKLY SAMPLES
**WorkOrder:** HS23091823

**QC BATCH REPORT**

**Batch ID:** R447881 ( 0 ) **Instrument:** UV-2450 **Method:** ORTHO PHOSPHATE (PO4) AS P BY E365.3-1978

**MBLK** Sample ID: **MBLK-R447881** Units: **mg/L** Analysis Date: **29-Sep-2023 17:00**
Client ID: Run ID: **UV-2450_447881** SeqNo: **7578463** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Phosphorus, Total Orthophosphate (As P) | 0.0250 | 0.0250 | | | | | | | | U |

**LCS** Sample ID: **LCS-R447881** Units: **mg/L** Analysis Date: **29-Sep-2023 17:00**
Client ID: Run ID: **UV-2450_447881** SeqNo: **7578462** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Phosphorus, Total Orthophosphate (As P) | 0.225 | 0.0250 | 0.25 | 0 | 90.0 | 85 - 115 | | | | |

**MS** Sample ID: **HS23091823-01MS** Units: **mg/L** Analysis Date: **29-Sep-2023 17:00**
Client ID: **LH18/24-SP650_092823** Run ID: **UV-2450_447881** SeqNo: **7578465** PrepDate: DF: **10**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Phosphorus, Total Orthophosphate (As P) | 5.5 | 0.250 | 2.5 | 3.21 | 91.6 | 80 - 120 | | | | |

**MSD** Sample ID: **HS23091823-01MSD** Units: **mg/L** Analysis Date: **29-Sep-2023 17:00**
Client ID: **LH18/24-SP650_092823** Run ID: **UV-2450_447881** SeqNo: **7578464** PrepDate: DF: **10**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Phosphorus, Total Orthophosphate (As P) | 5.52 | 0.250 | 2.5 | 3.21 | 92.4 | 80 - 120 | 5.5 | 0.363 | 20 | |

**The following samples were analyzed in this batch:** HS23091823-01

**ALS Houston, US** Date: 04-Oct-23

**Client:** Bhate Environmental Associates, Inc.
**Project:** GROUNDWATER TREATMENT PLANT WEEKLY SAMPLES
**WorkOrder:** HS23091823

**QC BATCH REPORT**

**Batch ID: R448001 ( 0 )** **Instrument: TOC_05** **Method: TOTAL ORGANIC CARBON BY E415.1**

**MBLK** Sample ID: **MBLK-10022023** Units: **mg/L** Analysis Date: **02-Oct-2023 12:11**
Client ID: Run ID: **TOC_05_448001** SeqNo: **7581235** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Organic Carbon, Total | 1.00 | 1.00 | | | | | | | | U |

**LCS** Sample ID: **LCS-10022023** Units: **mg/L** Analysis Date: **02-Oct-2023 12:28**
Client ID: Run ID: **TOC_05_448001** SeqNo: **7581236** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Organic Carbon, Total | 9.772 | 1.00 | 10 | 0 | 97.7 | 85 - 115 | | | | |

**LCSD** Sample ID: **LCSD-10022023** Units: **mg/L** Analysis Date: **02-Oct-2023 12:45**
Client ID: Run ID: **TOC_05_448001** SeqNo: **7581237** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Organic Carbon, Total | 9.925 | 1.00 | 10 | 0 | 99.2 | 85 - 115 | 9.772 | 1.55 | 20 | |

**MS** Sample ID: **HS23091239-01MS** Units: **mg/L** Analysis Date: **02-Oct-2023 16:14**
Client ID: Run ID: **TOC_05_448001** SeqNo: **7581249** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Organic Carbon, Total | 25.06 | 1.00 | 10 | 15.44 | 96.2 | 80 - 120 | | | | |

**The following samples were analyzed in this batch:** HS23091823-01

**ALS Houston, US** Date: 04-Oct-23

**Client:** Bhate Environmental Associates, Inc.
**Project:** GROUNDWATER TREATMENT PLANT WEEKLY SAMPLES
**WorkOrder:** HS23091823

**QC BATCH REPORT**

**Batch ID: R448115 ( 0 )** **Instrument: WetChem_HS** **Method: AMMONIA AS N BY E350.3(ISE)**

**MBLK** Sample ID: **MBLK-R448115** Units: **mg/L** Analysis Date: **04-Oct-2023 12:00**
Client ID: Run ID: **WetChem_HS_448115** SeqNo: **7584220** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Nitrogen, Ammonia (As N) | 0.20 | 0.20 | | | | | | | | U |

**MS** Sample ID: **HS23091452-01MS** Units: **mg/L** Analysis Date: **04-Oct-2023 12:00**
Client ID: Run ID: **WetChem_HS_448115** SeqNo: **7584222** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Nitrogen, Ammonia (As N) | 12.57 | 0.20 | 10 | 3.132 | 94.4 | 80 - 120 | | | | |

**MSD** Sample ID: **HS23091452-01MSD** Units: **mg/L** Analysis Date: **04-Oct-2023 12:00**
Client ID: Run ID: **WetChem_HS_448115** SeqNo: **7584221** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Nitrogen, Ammonia (As N) | 12.62 | 0.20 | 10 | 3.132 | 94.9 | 80 - 120 | 12.57 | 0.437 | 20 | |

**The following samples were analyzed in this batch:** HS23091823-01

**ALS Houston, US** Date: 04-Oct-23

**Client:** Bhate Environmental Associates, Inc.
**Project:** GROUNDWATER TREATMENT PLANT WEEKLY SAMPLES
**WorkOrder:** **HS23091823**

**QUALIFIERS, ACRONYMS, UNITS**

| Qualifier | Description |
|---|---|
| * | Value exceeds Regulatory Limit |
| a | Not accredited |
| B | Analyte detected in the associated Method Blank above the Reporting Limit |
| E | Value above quantitation range |
| H | Analyzed outside of Holding Time |
| J | Analyte detected below quantitation limit |
| M | Manually integrated, see raw data for justification |
| n | Not offered for accreditation |
| ND | Not Detected at the Reporting Limit |
| O | Sample amount is > 4 times amount spiked |
| P | Dual Column results percent difference > 40% |
| R | RPD above laboratory control limit |
| S | Spike Recovery outside laboratory control limits |
| U | Analyzed but not detected above the MDL/SDL |

| Acronym | Description |
|---|---|
| DCS | Detectability Check Study |
| DUP | Method Duplicate |
| LCS | Laboratory Control Sample |
| LCSD | Laboratory Control Sample Duplicate |
| MBLK | Method Blank |
| MDL | Method Detection Limit |
| MQL | Method Quantitation Limit |
| MS | Matrix Spike |
| MSD | Matrix Spike Duplicate |
| PDS | Post Digestion Spike |
| PQL | Practical Quantitaion Limit |
| SD | Serial Dilution |
| SDL | Sample Detection Limit |
| TRRP | Texas Risk Reduction Program |

## CERTIFICATIONS,ACCREDITATIONS & LICENSES

| Agency | Number | Expire Date |
|---|---|---|
| Arkansas | 88-00356 | 27-Mar-2024 |
| California | 2919; 2024 | 30-Apr-2024 |
| Dept of Defense | L23-358 | 31-May-2025 |
| Florida | E87611-38 | 30-Jun-2024 |
| Illinois | 2000322023-11 | 30-Jun-2024 |
| Kansas | E-10352 2023-2024 | 31-Jul-2024 |
| Louisiana | 03087 2023-2024 | 30-Jun-2024 |
| Maryland | 343; 2023-2024 | 30-Jun-2024 |
| North Carolina | 624-2023 | 31-Dec-2023 |
| North Dakota | R-193 2023-2024 | 30-Apr-2024 |
| Texas | T104704231-23-31 | 30-Apr-2024 |
| Utah | TX026932023-14 | 31-Jul-2024 |

**ALS Houston, US** Date: 04-Oct-23

## Sample Receipt Checklist

**Work Order ID:** HS23091823 **Date/Time Received:** **29-Sep-2023 09:20**

**Client Name:** Bhate Environmental **Received by:** **Corey Grandits**

**Completed By:** /S/ Malcolm Burleson (eSignature) 29-Sep-2023 11:07 (Date/Time) **Reviewed by:** /S/ James Guin (eSignature) 29-Sep-2023 15:44 (Date/Time)

Matrices: **water** Carrier name: **FedEx**

| | | | |
|---|---|---|---|
| Shipping container/cooler in good condition? | Yes ☑ | No ☐ | Not Present ☐ |
| Custody seals intact on shipping container/cooler? | Yes ☑ | No ☐ | Not Present ☐ |
| Custody seals intact on sample bottles? | Yes ☐ | No ☐ | Not Present ☑ |
| VOA/TX1005/TX1006 Solids in hermetically sealed vials? | Yes ☐ | No ☐ | Not Present ☑ |
| Chain of custody present? | Yes ☑ | No ☐ | 1 Page(s) |
| Chain of custody signed when relinquished and received? | Yes ☑ | No ☐ | |
| Samplers name present on COC? | Yes ☑ | No ☐ | |
| Chain of custody agrees with sample labels? | Yes ☑ | No ☐ | |
| Samples in proper container/bottle? | Yes ☑ | No ☐ | |
| Sample containers intact? | Yes ☑ | No ☐ | |
| Sufficient sample volume for indicated test? | Yes ☑ | No ☐ | |
| All samples received within holding time? | Yes ☑ | No ☐ | |
| Container/Temp Blank temperature in compliance? | Yes ☑ | No ☐ | |

| | | |
|---|---|---|
| Temperature(s)/Thermometer(s): | 2.7uc 2.6c | ir31 |
| Cooler(s)/Kit(s): | 51083 | |
| Date/Time sample(s) sent to storage: | 09292023 | |

| | | | |
|---|---|---|---|
| Water - VOA vials have zero headspace? | Yes ☑ | No ☐ | No VOA vials submitted ☐ |
| Water - pH acceptable upon receipt? | Yes ☑ | No ☐ | N/A ☐ |
| pH adjusted? | Yes ☐ | No ☑ | N/A ☐ |
| pH adjusted by: | | | |

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

Corrective Action:

# CHAIN OF CUSTODY

Name Of Lab Shipping To: ALS 10450 Stancliff Rd. Suite 210 Houston, TX. 77099 (281) 530-5656 ATTN: James Guin

Page 1 of 1

**Project:** BHATE
LONGHORN ARMY AMMN. PLANT (LHAAP)
GROUNDWATER TREATMENT PLANT (GWTP)
KARNACK, TEXAS

**Project No.** JVPCIBH.0001

**Job:** GROUNDWATER TREATMENT PLANT WEEKLY SAMPLES

**Prepared By:** Scott Beesinger

**P.O. Number**

**HS23091823**

Bhate Environmental Associates, Inc.
GROUNDWATER TREATMENT PLANT WEEKLY SA

| Field Sample I.D. | Sample Matrix | Date / Time | MS / MSD | No. OF CONTAINERS | Analyses: AMMONIA-N | TOTAL ORGANIC CARBON | ORTHO-PHOSPHATE | PERCHLORATE | Remarks (Preservatives, etc.) | Lab I.D.# |
|---|---|---|---|---|---|---|---|---|---|---|
| LH18/24-SP650_092823 | Water | 09/28/23 / 13:00 | | 3 | X | X | | | H2SO4 | |
| LH18/24-SP650_092823 | Water | 09/28/23 / 13:00 | | 1 | | | X | | NONE | |
| LH18/24–SP650_092823_BIX | Water | 09/28/23 / 13:00 | | 1 | | | | X | NONE | |
| LH18/24-SP650_092823_AIX | Water | 09/28/23 / 13:00 | | 1 | | | | X | NONE | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

Additional Remarks: **24 HR. TAT on Perchlorate Samples. Standard TAT on all other parameters**

| Relinquished By: | Date | Time | Received By: | Date | Time | Relinquished By: | Date | Time | Received By: | Date | Time |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Scott Beesinger | 09/28/23 | 13:30 | CH | 9-29-23 | 0920 | | | | | | |

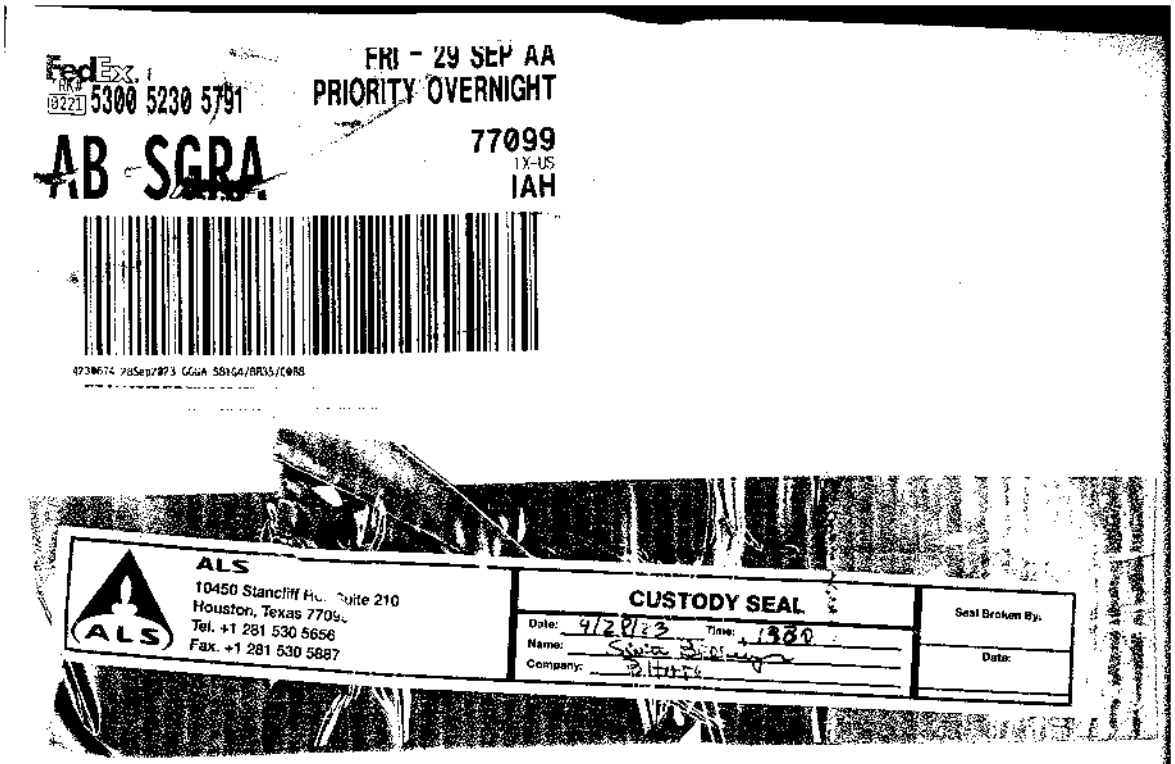
**For Lab Use Only**

| Received At Lab By: | Date | Time | Airbill No. | Opened By: | Date | Time | Temp of Container | Seal No. | Condition |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |

Remarks:

Sio83 1231 2.7°

(Word) S:\1-ees\Forms\Chain of Custody - BiWeekly


FedEx
5300 5230 5791
FRI - 29 SEP AA
PRIORITY OVERNIGHT
77099
IX-US
IAH
AB SGRA
ALS
10450 Stancliff Rd. Suite 210
Houston, Texas 7709
Tel. +1 281 530 5656
Fax. +1 281 530 5887
CUSTODY SEAL
Date: 9/28/23
Time: 1330
Name:
Company:
Seal Broken By:
Date:

October 02, 2023 Service Request No:E2300884

James Guin
ALS Environmental - US
10450 Stancliff Rd #210
Houston, TX 77099

**Laboratory Results for: HS23091823**

Dear James,

Enclosed are the results of the sample(s) submitted to our laboratory September 29, 2023
For your reference, these analyses have been assigned our service request number **E2300884.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current TNI standards, where applicable, and except as noted in the laboratory case narrative provided. All results are intended to be considered in their entirety and ALS Environmental is not responsible for use of less than the complete final report. Results apply only to the items submitted to the laboratory, as received for analysis. In accordance with the current TNI Standard, a statement on the estimated uncertainty of measurement of any quantitative analysis will be supplied upon request.

Please contact me if you have any questions. My extension is 2190. You may also contact me via email at hussam.kelany@alsglobal.com.

Respectfully submitted,

**ALS Group USA, Corp. dba ALS Environmental**

H Kelany

Hussam Kelany
Project Manager

ADDRESS 10450 Stancliff Rd., Suite 210, Houston, TX 77099
PHONE +1 281 530 5656 | FAX +1 281 530 5887
ALS Group USA, Corp.
dba ALS Environmental

# Certificate of Analysis

**ALS Environmental - Houston Specialties Laboratory**
10450 Stancliff Rd., Suite 210, Houston TX 77099
Phone (281)530-5656 Fax (281)530-5887
www.alsglobal.com

| | | | |
|---|---|---|---|
| **Client:** | ALS Environmental - US | **Service Request No.:** | E2300884 |
| **Project:** | HS23091823 | **Date Received:** | 09/29/23 |
| **Sample Matrix:** | Water | | |

## CASE NARRATIVE

All analyses were performed in adherence to the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier IV. When appropriate to the method, method blank results have been reported with each analytical test.

### Sample Receipt

Two samples were received for analysis at ALS Environmental in Houston on 09/29/23.

The samples were received in good condition and are consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

### Data Validation Notes and Discussion

**Precision and Accuracy:**

EQ2300472: Laboratory Control Spike/Duplicate Laboratory Control Spike (LCS/DLCS) samples were analyzed and reported in lieu of a MS/MSD for this extraction batch.

*The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and ALS Environmental (ALS) is not responsible for utilization of less than the complete report.*

*Use of ALS group USA Corp dba ALS Environmental (ALS)'s Name. Client shall not use ALS's name or trademark in any marketing or reporting materials, press releases or in any other manner ("Materials") whatsoever and shall not attribute to ALS any test result, tolerance or specification derived from ALS's data ("Attribution") without ALS's prior written consent, which may be withheld by ALS for any reason in its sole discretion. To request ALS's consent, Client shall provide copies of the proposed Materials or Attribution and describe in writing Client's proposed use of such Materials or Attribution. If ALS has not provided written approval of the Materials or Attribution within ten (10) days of receipt from Client, Client's request to use ALS's name or trademark in any Materials or Attribution shall be deemed denied. ALS may, in its discretion, reasonably charge Client for its time in reviewing Materials or Attribution requests. Client acknowledges and agrees that the unauthorized use of ALS's name or trademark may cause ALS to incur irreparable harm for which the recovery of money damages will be inadequate. Accordingly, Client acknowledges and agrees that a violation shall justify preliminary injunctive relief. For questions contact the laboratory.*

**Client:** ALS Environmental - US **Service Request:**E2300884
**Project:** HS23091823

## SAMPLE CROSS-REFERENCE

| SAMPLE # | CLIENT SAMPLE ID | DATE | TIME |
|---|---|---|---|
| E2300884-001 | LH18/24-SP650_092823_BIX | 9/28/2023 | 1300 |
| E2300884-002 | LH18/24-SP650_092823_AIX | 9/28/2023 | 1300 |

# Service Request Summary

**Folder #:** **E2300884**
Client Name: ALS Environmental - US
Project Name: HS23091823
Project Number:

**Report To:** James Guin
ALS Environmental - US
10450 Stancliff Rd #210
Houston, TX 77099
USA
Phone Number: 281-530-5656
Cell Number:
Fax Number:
E-mail: james.guin@alsglobal.com

Project Chemist: Hussam Kelany
Originating Lab: HOUSTON
Logged By: CGRANDITS
Date Received: 09/29/23
Internal Due Date: 10/2/2023
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS23091823
EDD: BASIC_WQC_CASNo, EQUIS EFWEDD_LHAAP

2 120 mL-Plastic Bottle Natural WM Unpreserved
**Location:** EHRMS-AirArch 1
**Pressure Gas:**
**Rush**

| Lab Samp No. | Client Samp No | Matrix | Collected | HOUSTON<br>ClO4 DOD/6850 |
|---|---|---|---|---|
| E2300884-001 | LH18/24-SP650_092823_BIX | Water | 09/28/23 1300 | **IV** |
| E2300884-002 | LH18/24-SP650_092823_AIX | Water | 09/28/23 1300 | **IV** |

# Service Request Summary

**Folder #:** **E2300884**
Client Name: ALS Environmental - US
Project Name: HS23091823
Project Number:

**Report To:** James Guin
ALS Environmental - US
10450 Stancliff Rd #210
Houston, TX 77099
USA
Phone Number: 281-530-5656
Cell Number:
Fax Number:
E-mail: james.guin@alsglobal.com

Project Chemist: Hussam Kelany
Originating Lab: HOUSTON
Logged By: CGRANDITS
Date Received: 09/29/23
Internal Due Date: 10/2/2023
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS23091823
EDD: BASIC_WQC_CASNo, EQUIS EFWEDD_LHAAP

2 120 mL-Plastic Bottle Natural WM Unpreserved
**Location:** EHRMS-AirArch 1
**Pressure Gas:**
**Rush**

## Test Comments:

| Group | Test/Method | Samples | Comments |
|---|---|---|---|
| Semivoa GCMS | ClO4 DOD/6850 | 2 | Level IV due 9/27 |

# Data Qualifiers

## Lab Standard

| | |
|---|---|
| + | Possible Tedlar bag artifact. |
| A | TIC is a suspected aldol-condensation product |
| B | Analyte found in the associated method blank as well as in the sample. |
| BC | Reported results are not blank corrected. |
| BH | The back section of the tube yielded higher results than the front. |
| BT | Results indicated possible breakthrough; back section >=10% front section. |
| C | Result identification confirmed. |
| D | Compound identified in an analysis at a secondary dilution factor |
| D | Spike was diluted out |
| DE | Reported results are corrected for desorption efficiency. |
| E | Estimated value. Concentration above calibration range |
| E | The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample. |
| F | The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard. |
| H | The chromatographic fingerprint of the sample resembles a petroleum product but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard. |
| H1 | Sample analysis performed past holding time. See case narrative. |
| H2 | Initial analysis within holding time. Reanalysis for the required dilution was past holding time. |
| H3 | Sample was received and analyzed past holding time. |
| H4 | Sample was extracted past required extraction holding time, but analyzed within analysis holding time. See case narrative. |
| I | (Auto) The reference ion ratio was outside acceptance criteria, which may indicate a potential bias to this result. |
| I | Internal standard not within the specified limits. See case narrative. |
| I | The reference ion ratio was outside acceptance criteria, which may indicate a potential bias to this result. |
| J | Estimated Value. Concentration found below MRL. |
| K | A deflection in the QC ion may indicate interference with the quantitation of this ion. The concentration of this analyte should be considered as an estimate. |
| K | Analyte was detected above the method reporting limit prior to normalization. |
| K | The reference ion ratio was outside acceptance criteria, which may indicate a potential bias to this result. |
| L | The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard. |
| L1 | Laboratory control sample recovery outside the specified limits; results may be biased high. |
| L2 | Laboratory control sample recovery outside the specified limits; results may be biased low. |
| L3 | Laboratory control sample recovery outside the specified limits. |
| M | Matrix interference; results may be biased high. |
| M | The duplicate injection precision not met. |

# Data Qualifiers

## Lab Standard

| | |
|---|---|
| M1 | Matrix interference due to coelution with a non-target compound; results may be biased high. |
| N | Presumptive evidence of a compound for TICs that have been identified based on a mass spectral library search. |
| N | The Matrix Spike sample recovery is not within control limits. See case narrative. |
| O | The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard. |
| P | Indicates chlorodiphenyl ether interference present at the retention time of the target compound. |
| P | Pesticide/Aroclor target analyte > 40% difference for detected concentrations between GC columns |
| Q | Indicates as estimated value because the P and P + 2 theoretical abundance ratio does not meet method criteria. |
| R | Duplicate Precision not met. |
| R1 | Duplicate precision not within the specified limits; however, the results are below the MRL and considered estimated. |
| S | Surrogate recovery not within specified limits. |
| S | The reported value was determined by the Method of Standard Additions (MSA). |
| T | Analyte is a tentatively identified compound, result is estimated. |
| U | Compound was analyzed for, but was not detected (ND). |
| V1 | The continuing calibration verification standard was outside (biased high) the specified limits for this compound. |
| V2 | The continuing calibration verification standard was outside (biased low) the specified limits for this compound. |
| W | Result quantified, but the corresponding peak was detected outside the generated retention time window. |
| W | The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance. |
| X | See case narrative. |
| Y | Recovery outside limits |
| Y | The chromatogram resembles a petroleum product but does not match the calibration standard. |
| Z | The chromatogram does not resemble a petroleum product. |
| i | The MRL/MDL has been elevated due to a matrix interference. |

# ALS Laboratory Group

**Acronyms**

| | |
|---|---|
| Cal | Calibration |
| Conc | CONCentration |
| Dioxin(s) | Polychlorinated dibenzo-p-dioxin(s) |
| EDL | Estimated Detection Limit |
| EMPC | Estimated Maximum Possible Concentration |
| Flags | Data qualifiers |
| Furan(s) | Polychlorinated dibenzofuran(s) |
| g | Grams |
| ICAL | Initial CALibration |
| ID | IDentifier |
| Ions | Masses monitored for the analyte during data acquisition |
| L | Liter (s) |
| LCS | Laboratory Control Sample |
| DLCS | Duplicate Laboratory Control Sample |
| MB | Method Blank |
| MCL | Method Calibration Limit |
| MDL | Method Detection Limit |
| mL | Milliliters |
| MS | Matrix Spiked sample |
| DMS | Duplicate Matrix Spiked sample |
| NO | Number of peaks meeting all identification criteria |
| PCDD(s) | Polychlorinated dibenzo-p-dioxin(s) |
| PCDF(s) | Polychlorinated dibenzofuran(s) |
| ppb | Parts per billion |
| ppm | Parts per million |
| ppq | Parts per quadrillion |
| ppt | Parts per trillion |
| QA | Quality Assurance |
| QC | Quality Control |
| Ratio | Ratio of areas from monitored ions for an analyte |
| % Rec. | Percent recovery |
| RPD | Relative Percent Difference |
| RRF | Relative Response Factor |
| RT | Retention Time |
| SDG | Sample Delivery Group |
| S/N | Signal-to-noise ratio |
| TEF | Toxicity Equivalence Factor |
| TEQ | Toxicity Equivalence Quotient |

10450 Stancliff Rd, Houston, TX 77099 | 281-530-5656 | www.alsglobal.com

## State Certifications, Accreditations, and Licenses

| Agency | Number | Expire Date |
|---|---|---|
| Arizona Department of Health Services | AZ0793_2024 | 5/27/2024 |
| Arkansas Department of Environmental Quality | 88-00356 | 3/27/2024 |
| California State Environmental Laboratory Accreditation Program | 2919 | 4/30/2024 |
| Department of Defense | L23-358 | 5/31/2025 |
| Department of Defense | L22-90 | 3/31/2024 |
| Florida Department of Health | E87611-38 | 6/30/2024 |
| Illinois Environmental Protection Agency | 2000322023-11 | 6/30/2024 |
| Kansas Department of Health and Environment | E-10352 2023-2024 | 7/31/2024 |
| Louisiana Department of Environmental Quality | 03087-2023 | 6/30/2024 |
| Louisiana Department of Health and Hospitals | LA028-2023 | 12/31/2023 |
| Maine Department of Health and Human Services | 2022017 | 6/5/2024 |
| Maryland Department of the Environment | 343-2023 | 6/30/2024 |
| Michigan Depratment of Environmental Quality | 9971-2023 | 4/30/2024 |
| Minnesota Department of Health | 2368363 | 12/31/2023 |
| Nebraska Department of Health and Human Services | NE-OS-25-13 | 4/30/2024 |
| Nevada Division of Environmental Protection | TX026932024-1 | 7/31/2024 |
| New Hampshire Environmental Laboratory Accreditation Program | 209423 | 4/24/2024 |
| New Jersey Department of Environmental Protection | TX008-2024 | 6/30/2024 |
| New York Department of Health | 11707 | 3/31/2024 |
| Oregon Environmental Laboratory Accreditation Program | TX200002-011 | 5/15/2024 |
| Pennsylvania Department of Environmental Protection | 68-03441-017 | 6/30/2024 |
| Perry Johnson Laboratory Accreditation | L22-91 | 3/31/2024 |
| Tennessee Department of Environment and Concervation | TN04016-2023 | 4/30/2024 |
| Texas Commision on Environmental Quality | T104704231-23-30 | 4/30/2024 |
| Utah Department of Health Environmental Laboratory Certification | TX026932023-14 | 7/31/2024 |
| Washington Department of Ecology | C819-22 | 11/14/2023 |

# Chain of Custody

**ALS Environmental - Houston Specialties Laboratory**
10450 Stancliff Rd., Suite 210, Houston TX 77099
Phone (281)530-5656 Fax (281)530-5887
www.alsglobal.com

10450 Stancliff Rd, Ste 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887
www.alsglobal.com

# Subcontract Chain of Custody

**SAMPLING STATE:** Dept of Defense **COC ID:** 23359

**SUBCONTRACT TO:**

ALS Environmental
10450 Stancliff RoadSuite 210
Houston, TX 77084

**Phone:** +1 281 530 5656

**CUSTOMER INFORMATION:**

| | |
|---|---|
| **Company:** | ALS Houston |
| **Contact:** | James Guin |
| **Address:** | 10450 Stancliff Rd, Ste 210 |
| **Phone:** | +1 281 530 5656 |
| **Email:** | James.Guin@alsglobal.com |
| **Alternate Contact:** | Jumoke M. Lawal |
| **Email:** | jumoke.lawal@alsglobal.com |

**INVOICE INFORMATION:**

| | |
|---|---|
| **Company:** | ALS Houston |
| **Contact:** | Accounts Payable |
| **Address:** | 10450 Stancliff Rd, Ste 210 |
| **Phone:** | +1 281 530 5656 |
| **Reference:** | HS23091823 |
| **TSR:** | Holly Tignac |

| | LAB SAMPLE ID / ANALYSIS REQUESTED | CLIENT SAMPLE ID | MATRIX | COLLECT DATE / DUE DATE |
|---|---|---|---|---|
| 1. | **HS23091823-02** | **LH18/24-SP650_092823_BIX** | **Water** | **28 Sep 2023 13:00** |
| | 6850-Perch. DOD Level II & Level IV in separate pdf - 6850-Perch. DOD Level II & Level IV in separate pdfInclude EDDS - EQUIS EFWEDD_LHAAP BASICWQC_CASNo | | | 02 Oct 2023 |
| 2. | **HS23091823-03** | **LH18/24-SP650_092823_AIX** | **Water** | **28 Sep 2023 13:00** |
| | 6850-Perch. DOD Level II & Level IV in separate pdf - 6850-Perch. DOD Level II & Level IV in separate pdfInclude EDDS - EQUIS EFWEDD_LHAAP BASICWQC_CASNo | | | 02 Oct 2023 |

**Comments:** Please analyze for the analysis listed above. Send report to the emails shown above.

**QC Level:** DOD IV (DoD Data Package)

E2300884 5
ALS Environmental - US
HS23091823

Relinquished By: PG Date/Time:

Received By: Date/Time: 9-29-23 1241

Cooler ID(s): Temperature(s):

# Cooler Receipt Form

ALS Environmental

Project Chemist HI

Client/Project ALS

Thermometer ID IR-1

Date/Time Received: 9.29.23 Initials: LY

Date/Time Logged in: 9.29.23 Initials LY

1. Method of delivery: ○ US Mail ○ Fed Ex ○ UPS ○ DHL ☒ Courier (ALS) ○ Client

2. Samples received in: ☑ Cooler ○ Box ○ Envelope ○ Other

3. Were custody seals on coolers? ○ Yes ☑ No
   Were they intact? ○ Yes ○ No ☑ N/A
   Were they signed and dated? ○ Yes ○ No ☑ N/A
   If yes, how many and where?

4. Packing Material: ○ Inserts ☑ Baggies ○ Bubble Wrap ○ Gel Packs ☑ Wet Ice ○ Sleeves ○ Other

5. Foreign or Regulated Soil? ○ Yes ○ No Location of Sampling:

| Cooler Tracking Number | COC ID | Date Opened | Time Opened | Opened By | Temp. °C | Temp Blank? |
|---|---|---|---|---|---|---|
| - | | 9.29.23 | 1241 | LY | 1.7 | ☑ |
| | | | | | | ☐ |
| | | | | | | ☐ |
| | | | | | | ☐ |

6. Were custody papers properly filled out (ink, signed, dated, etc)? ☑ Yes ○ No
7. Did all bottles arrive in good condition (not broken, no signs of leakage)? ☑ Yes ○ No
8. Were all sample labels complete (i.e., sample ID, analysis, preservation, etc)? ☑ Yes ○ No
9. Were appropriate bottles/containers and volumes received for the requested tests? ☑ Yes ○ No
10. Did sample labels and tags agree with custody documents? ☑ Yes ○ No

Notes, Discrepancies, & Resolutions:

Service request Label: E2300884 ALS Environmental - US HS23091823 5

10450 Stancliff Rd., Suite 210
Houston, TX 77099
**T:** +1 281 530 5656
**F:** +1 281 530 5887
**www.alsglobal.com**

# SAMPLE ACCEPTANCE POLICY

This policy outlines the criteria samples must meet to be accepted by ALS Environmental – Houston HRMS.

**Cooler Custody Seals (desirable, mandatory if specified in SAP):**

- ✓ Intact on outside of cooler, signed and dated

**Chain-of-Custody (COC) documentation (mandatory):**

The following is required on each COC:

- ✓ Sample ID, the location, date and time of collection, collector's name, preservation type, sample type, and any other special remarks concerning the sampleThe COC must be completed in ink.
- ✓ Signature and date of relinquishing party.

In the absence of a COC at sample receipt, the COC will be requested from the client.

**Sample Integrity (mandatory):**

Samples are inspected upon arrival to ensure that sample integrity was not compromised during transfer to the laboratory.

- ✓ Sample containers must arrive in good condition (not broken or leaking).
- ✓ Samples must be labeled appropriately, including Sample IDs, and requested test using durable labels and indelible ink.
- ✓ The correct type of sample bottle must be used for the method requested.
- ✓ An appropriate sample volume, or weight, must be received.
- ✓ Sample IDs and number of containers must reconcile with the COC.
- ✓ Samples must be received within the method defined holding time.

**Temperature Requirement (varies by sample matrix):**

- ✓ Aqueous and Non-aqueous samples must be shipped and stored cold, at 0 to 6ºC.
- ✓ Tissue samples must be shipped and stored frozen, at -20 to -10ºC.
- ✓ Air samples are shipped and stored cold, at 0 to 6ºC
- ✓ The sample temperature must be recorded on the COC

All cooler inspections are documented on the Cooler Receipt Form (CRF). A separate CRF is completed for each service request. Any samples not meeting the above criteria are noted on the CRF and the Project Manager notified. The Project Manager must resolve any sample integrity issues with the client prior to proceeding with the analysis. Such resolutions are documented in writing and filed with the project folder. Data associated with samples received outside of this acceptance policy will be qualified on the case narrative of the final report

# Preparation Information Benchsheets

**ALS Environmental - Houston Specialties Laboratory**
10450 Stancliff Rd., Suite 210, Houston TX 77099
Phone (281)530-5656 Fax (281)530-5887
www.alsglobal.com

# *Preparation Information Benchsheet*

**Prep Run#:** 427352 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
**Team:** Semivoa GCMS/XMI **Prep Method:** Method **Prep Date/Time:** 9/29/23 10:50

| # | Lab Code | Client ID | B# | Method /Test | pH | Cl | Matrix | Amt. Ext. | Sample Description |
|---|---|---|---|---|---|---|---|---|---|
| 1 | E2300884-001 | LH18/24-SP650_092823_BIX | .01 | 6850/ClO4 DOD | | | Water | 10mL | |
| 2 | E2300884-002 | LH18/24-SP650_092823_AIX | .01 | 6850/ClO4 DOD | | | Water | 10mL | |
| 3 | EQ2300472-01 | MB | | 6850/ClO4 | | | Liquid | 10mL | |
| 4 | EQ2300472-02 | LCS | | 6850/ClO4 | | | Liquid | 10mL | |
| 5 | EQ2300472-03 | DLCS | | 6850/ClO4 | | | Liquid | 10mL | |
| 6 | K2310740-001 | LGAC-INF-092523 | .01 | 6850/ClO4 | | | Water | 10mL | |
| 7 | K2310740-002 | LGAC-INT1-092523 | .01 | 6850/ClO4 | | | Water | 10mL | |
| 8 | K2310740-003 | LGAC-INT2-092523 | .01 | 6850/ClO4 | | | Water | 10mL | |
| 9 | R2308735-004 | 2309200908A BLM-42-569 | .01 | 6850/ClO4 | | | Water | 10mL | |
| 10 | R2308735-008 | 2309201031X 700-H-670 | .01 | 6850/ClO4 | | | Water | 10mL | |
| 11 | R2308735-013 | 2309201408C 300-D-153 | .01 | 6850/ClO4 | | | Water | 10mL | |
| 12 | R2308735-018 | 2309201425A BLM-42-709 | .01 | 6850/ClO4 | | | Water | 10mL | |
| 13 | R2308811-001 | 2309210851A 700-D-186 | .01 | 6850/ClO4 | | | Water | 10mL | |
| 14 | R2308811-002 | 2309210908C 700-J-200 | .01 | 6850/ClO4 | | | Water | 10mL | |
| 15 | R2308811-006 | 2309210948X 700-H-535 | .01 | 6850/ClO4 | | | Water | 10mL | |
| 16 | R2308811-008 | 2309211425C 700-A-253 | .01 | 6850/ClO4 | | | Water | 10mL | |
| 17 | R2308811-009 | 2309250955X 700-H-350 | .01 | 6850/ClO4 | | | Water | 10mL | |

## Spiking Solutions

Name: Perchlorate Intermediate Stock1 Inventory ID 230342 Logbook Ref: Perchlorate (1st Source) Expires On: 03/07/2024

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| EQ2300472-02 | 1.00µL | EQ2300472-02 | 1.00µL | EQ2300472-03 | 1.00µL | EQ2300472-03 | 1.00µL |

Name: Perchlorate Internal Standard 1ug/mL Inventory ID 230372 Logbook Ref: Perchlorate Internal Standard Expires On: 04/30/2024

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| E2300884-001 | 100.00µL | E2300884-002 | 100.00µL | EQ2300472-01 | 100.00µL | EQ2300472-01 | 100.00µL | EQ2300472-02 | 100.00µL | EQ2300472-02 | 100.00µL |
| EQ2300472-03 | 100.00µL | EQ2300472-03 | 100.00µL | K2310740-001 | 100.00µL | K2310740-002 | 100.00µL | K2310740-003 | 100.00µL | R2308735-004 | 100.00µL |
| R2308735-008 | 100.00µL | R2308735-013 | 100.00µL | R2308735-018 | 100.00µL | R2308811-001 | 100.00µL | R2308811-002 | 100.00µL | R2308811-006 | 100.00µL |
| R2308811-008 | 100.00µL | R2308811-009 | 100.00µL | | | | | | | | |

## Preparation Steps

Step: Preparation
Started: 9/29/23 10:50
Finished: 9/29/23 11:50
By: XMI
Comments

# *Preparation Information Benchsheet*

**Prep Run#:** 427352
**Team:** Semivoa GCMS/XMI

**Prep WorkFlow:** GenExt28Day
**Prep Method:** Method

**Status:** Prepped
**Prep Date/Time:** 9/29/23 10:50

Comments: _____

Reviewed By: _____ Date: _____

Chain of Custody

Relinquished By: _____ Date: _____

Received By: _____ Date: _____

Extracts Examined
Yes No

# Analytical Results

**ALS Environmental - Houston Specialties Laboratory**
10450 Stancliff Rd., Suite 210, Houston TX 77099
Phone (281)530-5656 Fax (281)530-5887
www.alsglobal.com

**ALS Group USA, Corp. dba ALS Environmental**

Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | ALS Environmental - US | **Service Request:** | E2300884 |
| **Project:** | HS23091823 | **Date Collected:** | 9/28/23 1300 |
| **Sample Matrix:** | Water | **Date Received:** | 9/29/23 |
| **Sample Name:** | LH18/24-SP650_092823_BIX | **Units:** | µg/L |
| **Lab Code:** | E2300884-001 | **Basis:** | NA |

**Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry**

**Analytical Method:** 6850
**Prep Method:** Method

| Analyte Name | Result | Q | LOQ | LOD | MDL | Dilution Factor | Date Extracted | Date Analyzed | Extraction Lot | Analysis Lot | Note |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | **4.57** | | 0.100 | 0.0500 | 0.0250 | 1 | 9/29/23 | 9/29/23 15:06 | 427352 | 819068 | |

**ALS Group USA, Corp. dba ALS Environmental**

Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | ALS Environmental - US | **Service Request:** | E2300884 |
| **Project:** | HS23091823 | **Date Collected:** | 9/28/23 1300 |
| **Sample Matrix:** | Water | **Date Received:** | 9/29/23 |
| **Sample Name:** | LH18/24-SP650_092823_AIX | **Units:** | µg/L |
| **Lab Code:** | E2300884-002 | **Basis:** | NA |

**Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry**

**Analytical Method:** 6850
**Prep Method:** Method

| Analyte Name | Result | Q | LOQ | LOD | MDL | Dilution Factor | Date Extracted | Date Analyzed | Extraction Lot | Analysis Lot | Note |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | **1.38** | | 0.100 | 0.0500 | 0.0250 | 1 | 9/29/23 | 9/29/23 15:11 | 427352 | 819068 | |

**ALS Group USA, Corp. dba ALS Environmental**

Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | ALS Environmental - US | **Service Request:** | E2300884 |
| **Project:** | HS23091823 | **Date Collected:** | NA |
| **Sample Matrix:** | Water | **Date Received:** | NA |
| **Sample Name:** | Method Blank | **Units:** | µg/L |
| **Lab Code:** | EQ2300472-01 | **Basis:** | NA |

**Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry**

**Analytical Method:** 6850
**Prep Method:** Method

| Analyte Name | Result | Q | LOQ | LOD | MDL | Dilution Factor | Date Extracted | Date Analyzed | Extraction Lot | Analysis Lot | Note |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | ND | U | 0.100 | 0.0500 | 0.0250 | 1 | 9/29/23 | 9/29/23 14:48 | 427352 | 819068 | |

# Accuracy & Precision

**ALS Environmental - Houston Specialties Laboratory**
10450 Stancliff Rd., Suite 210, Houston TX 77099
Phone (281)530-5656 Fax (281)530-5887
www.alsglobal.com

**ALS Group USA, Corp. dba ALS Environmental**

QA/QC Report

**Client:** ALS Environmental - US
**Project:** HS23091823
**Sample Matrix:** Water

**Service Request:** E2300884
**Date Analyzed:** 9/29/23

## Lab Control Sample Summary
## Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

**Analytical Method:** 6850
**Prep Method:** Method

**Units:** µg/L
**Basis:** NA

**Extraction Lot:** 427352

| | Lab Control Sample EQ2300472-02 | | | Duplicate Lab Control Sample EQ2300472-03 | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Analyte Name** | **Result** | **Spike Amount** | **% Rec** | **Result** | **Spike Amount** | **% Rec** | **% Rec Limits** | **RPD** | **RPD Limit** |
| Perchlorate | 0.113 | 0.100 | 113 | 0.0975 | 0.100 | 98 | 84 - 119 | 14 | 15 |

**Results flagged with an asterisk (*) indicate values outside control criteria.**

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

**ALS Group USA, Corp. dba ALS Environmental**

Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | ALS Environmental - US | **Service Request:** | E2300884 |
| **Project:** | HS23091823 | **Date Collected:** | NA |
| **Sample Matrix:** | Water | **Date Received:** | NA |
| **Sample Name:** | Lab Control Sample | **Units:** | µg/L |
| **Lab Code:** | EQ2300472-02 | **Basis:** | NA |

**Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry**

**Analytical Method:** 6850
**Prep Method:** Method

| Analyte Name | Result | Q | LOQ | LOD | MDL | Dilution Factor | Date Extracted | Date Analyzed | Extraction Lot | Analysis Lot | Note |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | **0.113** | | 0.100 | 0.0500 | 0.0250 | 1 | 9/29/23 | 9/29/23 14:54 | 427352 | 819068 | |

**ALS Group USA, Corp. dba ALS Environmental**

Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | ALS Environmental - US | **Service Request:** | E2300884 |
| **Project:** | HS23091823 | **Date Collected:** | NA |
| **Sample Matrix:** | Water | **Date Received:** | NA |
| **Sample Name:** | Duplicate Lab Control Sample | **Units:** | µg/L |
| **Lab Code:** | EQ2300472-03 | **Basis:** | NA |

**Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry**

**Analytical Method:** 6850
**Prep Method:** Method

| Analyte Name | Result | Q | LOQ | LOD | MDL | Dilution Factor | Date Extracted | Date Analyzed | Extraction Lot | Analysis Lot | Note |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | **0.0975** | J | 0.100 | 0.0500 | 0.0250 | 1 | 9/29/23 | 9/29/23 15:00 | 427352 | 819068 | |

# HS23091823 Wetchem NIT-AMM_W- E350.3 - ISE

ALS WO# HS23091823

NIT_AMM_W_E350.3 ISC
NIT_AMM_W_ ISC

ALS Laboratory Group

Logbook 3

# Ion Selective Electrode Logbook

| | | | |
|---|---|---|---|
| Analyst: AB | | | Date: 10/24/23 |
| Method: SM4500NH3-D/EPA 350.3 or SM4500 NH3 B-F | | | |
| Probe Calibration Date: 10/24/23 | Cal Std ID: 322/146903-08 | | Probe ID: NH3-8 |

| Std Level | | mV | Conc., mg/L: |
|---|---|---|---|
| STD 1 (mg/L): | | 119.5 | 0.208 |
| STD 2 (mg/L): | | 89.7 | 1.009 |
| STD 3 (mg/L): | | 50.4 | 5.010 |

Sodium Thiosulfate ID: 3120606279

| Std Level | mV | Conc., n |
|---|---|---|
| STD 4 (mg/L): | 10.959 | 32.2 |
| STD 5 (mg/L): | 50.107 | -11.1 |

LSC / MS Spike ID: 3120607504
ICV Cal STD ID: 322/146933
DPD Reagent ID: 3120607601
ICAL Date & Slope: 100.99%/-59.8

| WO # / SX # | Bottle # | Initial g or ml | Final Vol. ml | Dilution Factor | Initial Conc. mg/L | Final Conc. mg/L | Chlorine Check ( +/– ) | Comments |
|---|---|---|---|---|---|---|---|---|
| ICV | | 50mL | 50mL | | 10.156 | | | |
| ICB | | | | | 0.208 | | | |
| MBL/L | | | | | 0.208 | | | |
| LCS | | | | | 9.978 | | -w | |
| #S2309823-01 | | | | | 16.952 | | | |
| 1452-01 | | | | | 3.132 | | | |
| 1452-01MS | | | | | 12.569 | | | |
| 1452-01MSD | | | | | 12.624 | | | |
| 1516-01 | | | | | 1.878 | | | |
| 1626-01 | | | | | 2.280 | | | |
| 1753-01 | | | | | 1.687 | | | |
| 1843-01 | | | | | 2.549 | | | |
| CCV | | | | | 9.949 | | | |
| CCB | | | | | 0.209 | | -w | |
| 249-01 | | | | | 2.704 | | | |
| #S2309426-08 | | 5mL | | | 5.058 | | + | |
| 1828-01 | | 50mL | | | 0.638 | | -w | |
| 1831-01 | | | | | 0.255 | | | |
| 1831-01MS | | | | | 9.766 | | | |
| 1831-01MSD | | | | | 9.643 | | | |
| 100-01 | | | | | 27.155 | | | |
| CCV | | | | | 9.406 | | | |
| CCB | | | | | 0.209 | | | |
| | | | | | | | | |
| | | | | | | | | |

Batch ID: 448115, 448117 | Reported By: AB | Reviewed By:


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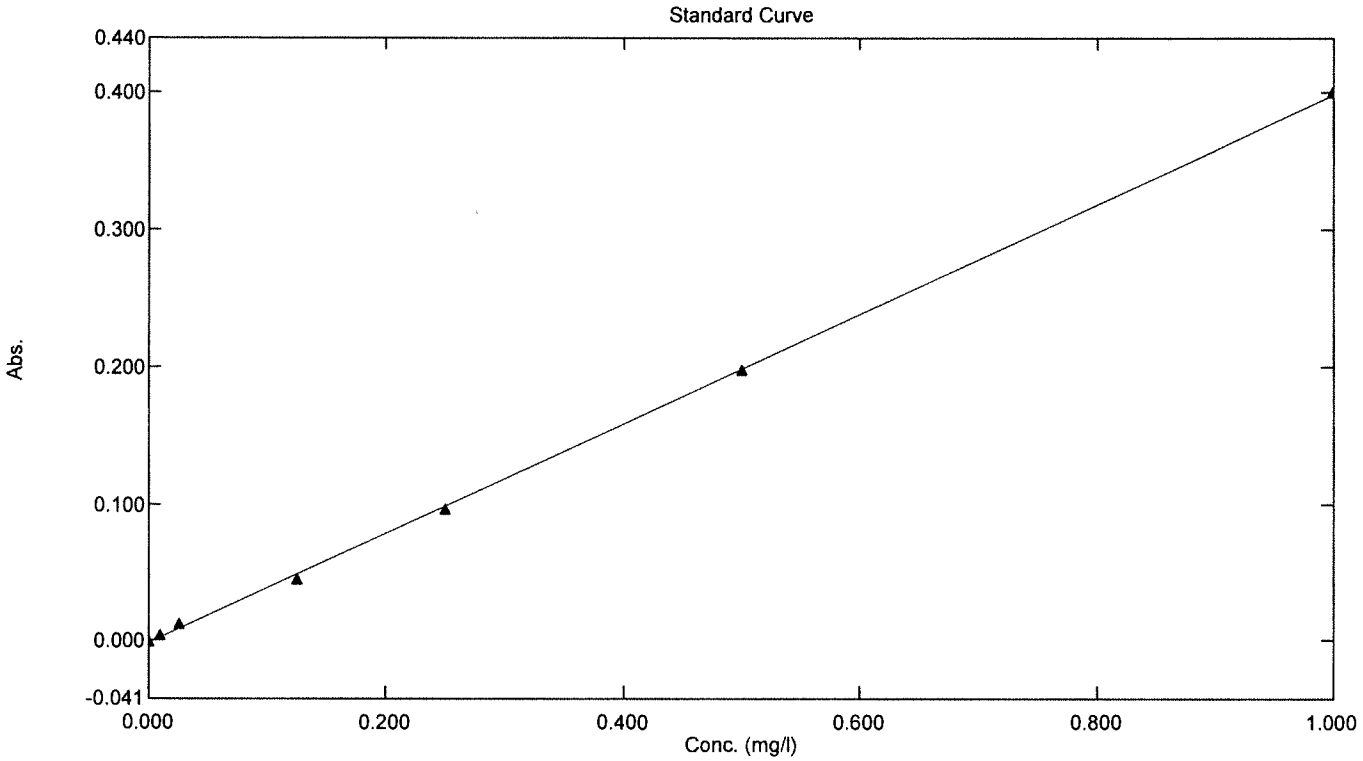
# HS23091823 Wetchem P-ORTHO

ALS WO# HS23091823

# Standard Table Report

10/02/2023 05:26:14 PM

File Name: C:\Program Files (x86)\Shimadzu\UVProbe\Data\P_ORTHO ( 365.3 METHOD)\2023\09292023_P_ORTHO.pho




Correlation Coefficient r2 = 0.99971

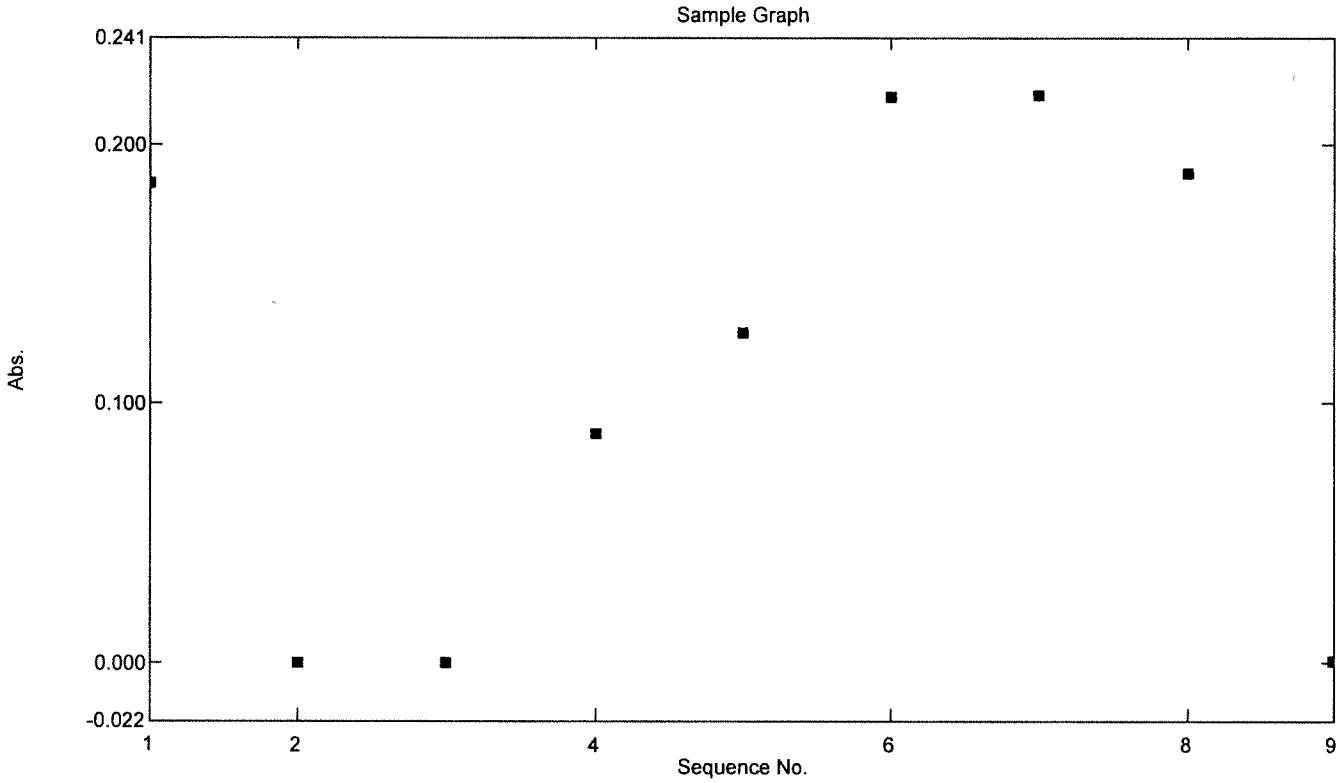
Standard Table

| | Sample ID | Type | Ex | Conc | WL650.0 | Wgt.Factor | Comments |
|---|---|---|---|---|---|---|---|
| 1 | STD1 | Standard | | 0.000 | -0.000 | 1.000 | |
| 2 | STD2 | Standard | | 0.010 | 0.005 | 1.000 | |
| 3 | STD3 | Standard | | 0.025 | 0.012 | 1.000 | |
| 4 | STD4 | Standard | | 0.125 | 0.045 | 1.000 | |
| 5 | STD5 | Standard | | 0.250 | 0.096 | 1.000 | |
| 6 | STD6 | Standard | | 0.500 | 0.197 | 1.000 | |
| 7 | STD7 | Standard | | 1.000 | 0.400 | 1.000 | |
| 8 | | | | | | | |

# Sample Table Report

10/02/2023 05:26:17 PM

File Name: C:\Program Files (x86)\Shimadzu\UVProbe\Data\P_ORTHO ( 365.3 METHOD)\2023\09292023_P_ORTHO.pho




Sample Table

| | Sample ID | Date | Time | Conc | WL650. | Comments |
|---|---|---|---|---|---|---|
| 1 | CCV | 09/29/2023 | 05:01:00 PM | 0.467 | 0.185 | 322146604 IC-4 |
| 2 | CCB | 09/29/2023 | 05:01:10 PM | 0.004 | 0.000 | 3100606911 UV-03 |
| 3 | MBLK | 09/29/2023 | 05:01:12 PM | 0.003 | -0.000 | A-322143903 IC-4 |
| 4 | LCS | 09/29/2023 | 05:01:42 PM | 0.225 | 0.088 | 322147404 IC-4 |
| 5 | HS23090823.01 | 09/29/2023 | 05:03:01 PM | 0.321 | 0.127 | PF:10X |
| 6 | HS23090823.01MS | 09/29/2023 | 05:04:32 PM | 0.550 | 0.218 | PF:10X |
| 7 | HS23090823.01MSD | 09/29/2023 | 05:04:35 PM | 0.552 | 0.219 | PF:10X |
| 8 | CCV2 | 09/29/2023 | 05:04:55 PM | 0.475 | 0.189 | AS-322147203 IC-4 |
| 9 | CCB2 | 09/29/2023 | 05:05:03 PM | 0.005 | 0.001 | |
| 10 | | | | | | |

# HS23091823 Wetchem TOC_W

ALS WO# HS23091823

C:\TOC-L\Data\2023_09_20_001_CAL.tlx

| | Type | Analysis | Sam | Sample ID | Origin | Manual Diluti | Result | Notes | Status |
|---|---|---|---|---|---|---|---|---|---|
| 1 | Standard | NPOC | CAL | 3100607917 | 09.20.2023. | 1.000 | | | Completed |
| 2 | Unknown | NPOC | ICV | 3100607901 | 09.20.2023. | 1.000 | NPOC:9.753mg/L | | Completed |
| 3 | Unknown | NPOC | ICB | | 09.20.2023. | 1.000 | NPOC:0.06406mg/L | | Completed |

C:\TOC-L\Data\2023_09_20_001_CAL.tlx

| | Date / Time | Vial |
|---|---|---|
| 1 | 9/20/2023 2:35: | 1, 2, 3, 4, 5, |
| 2 | 9/20/2023 2:53: | 8 |
| 3 | 9/20/2023 3:06: | 1 |

# TOC-Control L Report

2023_09_20_001_CAL.tlx

**Instr.Information**

| | |
|---|---|
| Instrument Options | TOC/ASI/IC Unit/ |
| Catalyst | Regular Sensitivity |

**Cal. Curve**

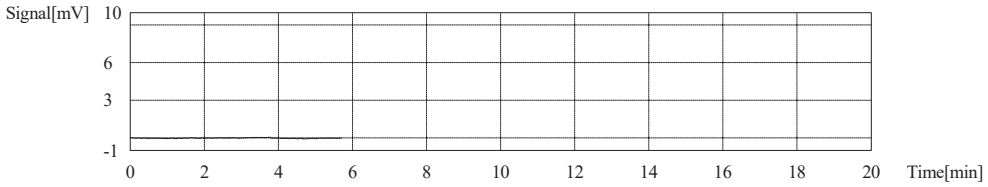
| | |
|---|---|
| Sample Name: | CAL |
| Sample ID: | 3100607917 |
| Cal. Curve: | 09.20.2023.2023_09_20_12_39_18.cal |
| Status | Completed |

| Type | Anal. |
|---|---|
| Standard | NPOC |

Conc: 0.000mg/L

| No. | Area | Inj. Vol. | Aut. Dil. | Rem. | Ex. | Date / Time |
|---|---|---|---|---|---|---|
| 1 | 0.000 | 50uL | 1.000 | ******* | | 9/20/2023 12:48:30 PM |
| 2 | 0.000 | 50uL | 1.000 | ******* | | 9/20/2023 12:50:37 PM |
| 3 | 0.000 | 50uL | 1.000 | ******* | | 9/20/2023 12:52:44 PM |

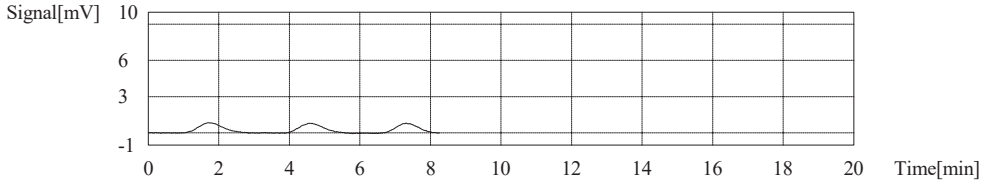
| | |
|---|---|
| Acid Add. | 1.500% |
| Sparge Gas Flow | 80mL/min |
| Sp. Time | 120.0sec |
| Mean Area | 0.000 |




Conc: 1.000mg/L

| No. | Area | Inj. Vol. | Aut. Dil. | Rem. | Ex. | Date / Time |
|---|---|---|---|---|---|---|
| 1 | 3.811 | 50uL | 1.000 | ******* | | 9/20/2023 1:02:18 PM |
| 2 | 3.651 | 50uL | 1.000 | ******* | | 9/20/2023 1:05:16 PM |
| 3 | 3.701 | 50uL | 1.000 | ******* | | 9/20/2023 1:08:10 PM |

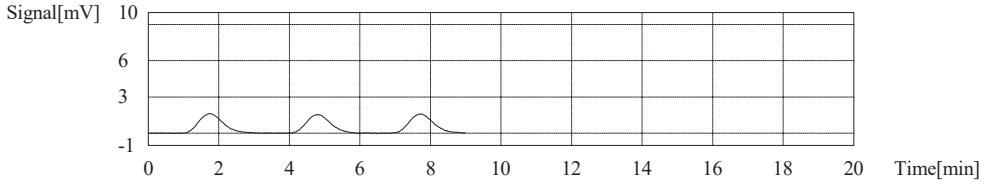
| | |
|---|---|
| Acid Add. | 1.500% |
| Sparge Gas Flow | 80mL/min |
| Sp. Time | 120.0sec |
| Mean Area | 3.721 |




Conc: 2.000mg/L

| No. | Area | Inj. Vol. | Aut. Dil. | Rem. | Ex. | Date / Time |
|---|---|---|---|---|---|---|
| 1 | 7.734 | 50uL | 1.000 | ******* | | 9/20/2023 1:17:57 PM |
| 2 | 7.370 | 50uL | 1.000 | ******* | | 9/20/2023 1:21:05 PM |
| 3 | 7.413 | 50uL | 1.000 | ******* | | 9/20/2023 1:24:20 PM |

| | |
|---|---|
| Acid Add. | 1.500% |
| Sparge Gas Flow | 80mL/min |
| Sp. Time | 120.0sec |
| Mean Area | 7.506 |



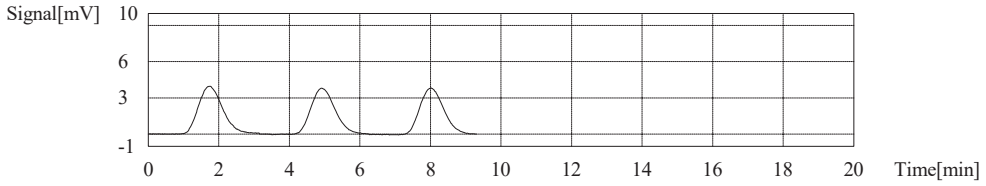
# TOC-Control L Report

2023_09_20_001_CAL.tlx

Conc: 5.000mg/L

| No. | Area | Inj. Vol. | Aut. Dil. | Rem. | Ex. | Date / Time |
|---|---|---|---|---|---|---|
| 1 | 18.82 | 50uL | 1.000 | ******* | | 9/20/2023 1:34:14 PM |
| 2 | 18.26 | 50uL | 1.000 | ******* | | 9/20/2023 1:37:36 PM |
| 3 | 18.23 | 50uL | 1.000 | ******* | | 9/20/2023 1:40:51 PM |

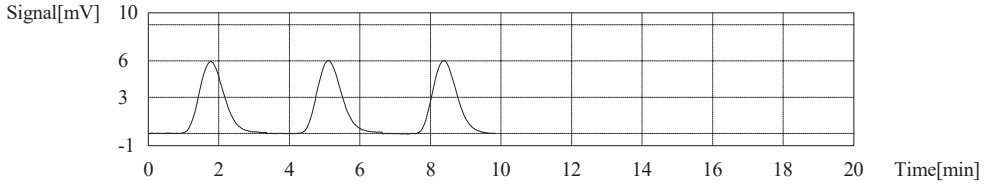
Acid Add. 1.500%
Sparge Gas Flow 80mL/min
Sp. Time 120.0sec
Mean Area 18.44




Conc: 10.00mg/L

| No. | Area | Inj. Vol. | Aut. Dil. | Rem. | Ex. | Date / Time |
|---|---|---|---|---|---|---|
| 1 | 28.91 | 50uL | 1.000 | ******* | | 9/20/2023 1:50:57 PM |
| 2 | 29.14 | 50uL | 1.000 | ******* | | 9/20/2023 1:54:30 PM |
| 3 | 29.13 | 50uL | 1.000 | ******* | | 9/20/2023 1:57:57 PM |

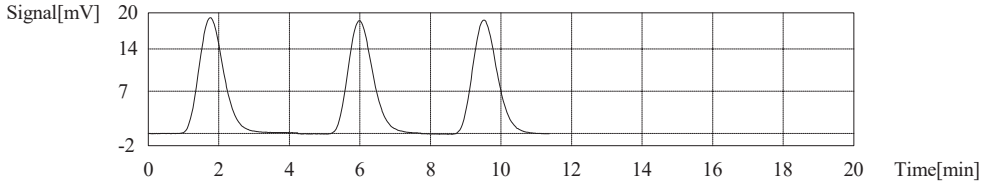
Acid Add. 1.500%
Sparge Gas Flow 80mL/min
Sp. Time 120.0sec
Mean Area 29.06




Conc: 25.00mg/L

| No. | Area | Inj. Vol. | Aut. Dil. | Rem. | Ex. | Date / Time |
|---|---|---|---|---|---|---|
| 1 | 94.26 | 50uL | 1.000 | ******* | | 9/20/2023 2:08:56 PM |
| 2 | 92.29 | 50uL | 1.000 | ******* | | 9/20/2023 2:12:42 PM |
| 3 | 93.25 | 50uL | 1.000 | ******* | | 9/20/2023 2:16:34 PM |

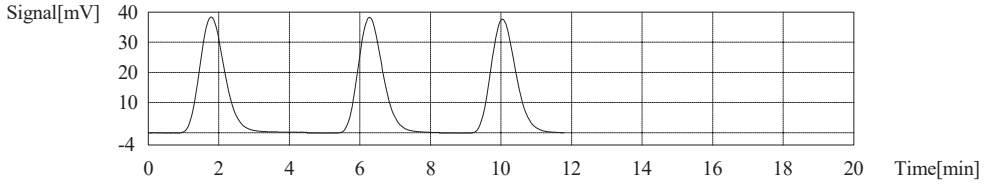
Acid Add. 1.500%
Sparge Gas Flow 80mL/min
Sp. Time 120.0sec
Mean Area 93.27




Conc: 50.00mg/L

| No. | Area | Inj. Vol. | Aut. Dil. | Rem. | Ex. | Date / Time |
|---|---|---|---|---|---|---|
| 1 | 190.8 | 50uL | 1.000 | ******* | | 9/20/2023 2:27:49 PM |
| 2 | 187.5 | 50uL | 1.000 | ******* | | 9/20/2023 2:31:50 PM |
| 3 | 186.6 | 50uL | 1.000 | ******* | | 9/20/2023 2:35:37 PM |

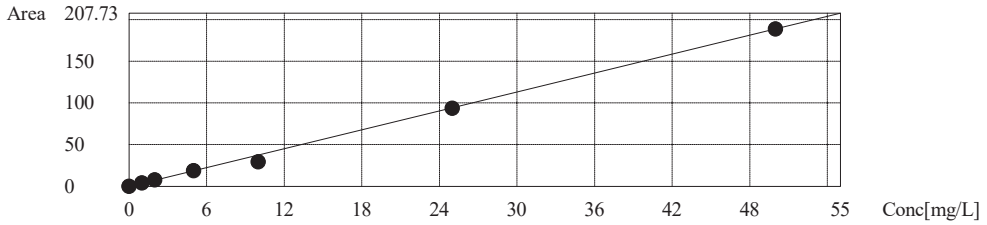
Acid Add. 1.500%
Sparge Gas Flow 80mL/min
Sp. Time 120.0sec
Mean Area 188.3



# TOC-Control L Report

2023_09_20_001_CAL.tlx

| | |
|---|---|
| Slope: | 3.777 |
| Intercept | 0.000 |
| r^2 | 0.9979 |
| r | 0.9990 |
| RSE(%) | N/A |
| Zero Shift | Yes |




**Sample**

| | |
|---|---|
| Sample Name: | ICV |
| Sample ID: | 3100607901 |
| Origin: | 09.20.2023.cal |
| Status | Completed |
| Chk. Result | |

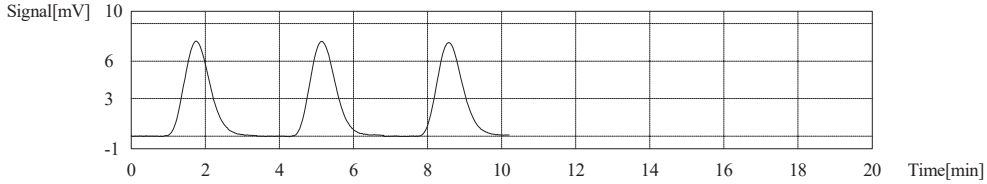
| Type | Anal. | Manual Dilution | Result |
|---|---|---|---|
| Unknown | NPOC | 1.000 | NPOC:9.753mg/L |

1. Det

Anal.: NPOC

| No. | Area | Conc. | Inj. Vol. | Aut. Dil. | Ex. | Cal. Curve | Date / Time |
|---|---|---|---|---|---|---|---|
| 1 | 37.20 | 9.849mg/L | 50uL | 1.000 | | 09.20.2023.2023_09_20_12_39_18.cal | 9/20/2023 2:45:47 PM |
| 2 | 36.80 | 9.743mg/L | 50uL | 1.000 | | 09.20.2023.2023_09_20_12_39_18.cal | 9/20/2023 2:49:26 PM |
| 3 | 36.51 | 9.667mg/L | 50uL | 1.000 | | 09.20.2023.2023_09_20_12_39_18.cal | 9/20/2023 2:53:05 PM |

| | |
|---|---|
| Mean Area | 36.84 |
| Mean Conc. | 9.753mg/L |




**Sample**

| | |
|---|---|
| Sample Name: | ICB |
| Sample ID: | |
| Origin: | 09.20.2023.cal |
| Status | Completed |
| Chk. Result | |

| Type | Anal. | Manual Dilution | Result |
|---|---|---|---|
| Unknown | NPOC | 1.000 | NPOC:0.06406mg/L |

1. Det

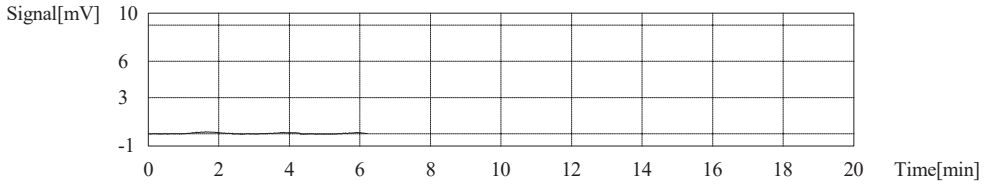
Anal.: NPOC

| No. | Area | Conc. | Inj. Vol. | Aut. Dil. | Ex. | Cal. Curve | Date / Time |
|---|---|---|---|---|---|---|---|
| 1 | 0.5574 | 0.1476mg/L | 50uL | 1.000 | | 09.20.2023.2023_09_20_12_39_18.cal | 9/20/2023 3:02:26 PM |
| 2 | 0.1685 | 0.04461mg/L | 50uL | 1.000 | | 09.20.2023.2023_09_20_12_39_18.cal | 9/20/2023 3:04:35 PM |
| 3 | 0.000 | 0.000mg/L | 50uL | 1.000 | | 09.20.2023.2023_09_20_12_39_18.cal | 9/20/2023 3:06:44 PM |

# TOC-Control L Report

2023_09_20_001_CAL.tlx

| | |
|---|---|
| Mean Area | 0.2420 |
| Mean Conc. | 0.06406mg/L |



C:\TOC-L\Data\2023_10_02_001.tlx

| | Type | Analysis | Sample Name | Sample ID | Origin | Manual Diluti | Result | Notes |
|---|---|---|---|---|---|---|---|---|
| 1 | Unknown | NPOC | CCV | 322147401 | 09.20.2023. | 1.000 | NPOC:24.62mg/L | |
| 2 | Unknown | NPOC | CCB | | 09.20.2023. | 1.000 | NPOC:0.1542mg/L | |
| 3 | Unknown | NPOC | MBLK-10022023 | | 09.20.2023. | 1.000 | NPOC:0.07529mg/L | |
| 4 | Unknown | NPOC | LCS-10022023 | 3100607901 | 09.20.2023. | 1.000 | NPOC:9.772mg/L | |
| 5 | Unknown | NPOC | LCSD-10022023 | | 09.20.2023. | 1.000 | NPOC:9.925mg/L | |
| 6 | Unknown | NPOC | HS23091823-01 | TOC_W | 09.20.2023. | 1.000 | NPOC:6.376mg/L | |
| 7 | Unknown | NPOC | HS23091652-14 | | 09.20.2023. | 1.000 | NPOC:22.58mg/L | |
| 8 | Unknown | NPOC | HS23091652-15 | | 09.20.2023. | 1.000 | NPOC:22.29mg/L | |
| 9 | Unknown | NPOC | HS23091652-16 | | 09.20.2023. | 1.000 | NPOC:22.41mg/L | |
| 10 | Unknown | NPOC | HS23091652-17 | | 09.20.2023. | 1.000 | NPOC:22.20mg/L | |
| 11 | Unknown | NPOC | HS23091652-18 | | 09.20.2023. | 1.000 | NPOC:22.45mg/L | |
| 12 | Unknown | NPOC | HS23091652-19 | | 09.20.2023. | 1.000 | NPOC:22.38mg/L | |
| 13 | Unknown | NPOC | CCV | 322147401 | 09.20.2023. | 1.000 | NPOC:24.87mg/L | |
| 14 | Unknown | NPOC | CCB | | 09.20.2023. | 1.000 | NPOC:0.000mg/L | |
| 15 | Unknown | NPOC | HS23091652-20 | | 09.20.2023. | 1.000 | NPOC:22.30mg/L | |
| 16 | Unknown | NPOC | HS23091239-01 | | 09.20.2023. | 1.000 | NPOC:15.44mg/L | |
| 17 | Unknown | NPOC | HS23091239-01MS | | 09.20.2023. | 1.000 | NPOC:25.06mg/L | |
| 18 | Unknown | NPOC | HS23091317-01 | | 09.20.2023. | 1.000 | NPOC:3.278mg/L | |
| 19 | Unknown | NPOC | CCV | 322147401 | 09.20.2023. | 1.000 | NPOC:24.78mg/L | |
| 20 | Unknown | NPOC | CCB | | 09.20.2023. | 1.000 | NPOC:0.000mg/L | |
| 21 | Unknown | NPOC | MBLK-10022023 | | 09.20.2023. | 1.000 | NPOC:0.000mg/L | |
| 22 | Unknown | NPOC | LCS-10022023 | 3100607901 | 09.20.2023. | 1.000 | NPOC:9.870mg/L | |
| 23 | Unknown | NPOC | LCSD-10022023 | | 09.20.2023. | 1.000 | NPOC:9.835mg/L | |
| 24 | Unknown | NPOC | HS23091317-02 | TOC_W | 09.20.2023. | 1.000 | NPOC:1.616mg/L | |
| 25 | Unknown | NPOC | HS23091317-03 | | 09.20.2023. | 1.000 | NPOC:5.191mg/L | |
| 26 | Unknown | NPOC | HS23091317-03MS | | 09.20.2023. | 1.000 | NPOC:14.76mg/L | |
| 27 | Unknown | NPOC | HS23091538-01 | | 09.20.2023. | 1.000 | NPOC:6.497mg/L | |
| 28 | Unknown | NPOC | HS23091538-02 | | 09.20.2023. | 1.000 | NPOC:1.647mg/L | |
| 29 | Unknown | NPOC | HS23091538-03 | | 09.20.2023. | 1.000 | NPOC:5.808mg/L | |
| 30 | Unknown | NPOC | HS23091538-04 | | 09.20.2023. | 1.000 | NPOC:7.736mg/L | |
| 31 | Unknown | NPOC | CCV | 322147401 | 09.20.2023. | 1.000 | NPOC:24.88mg/L | |
| 32 | Unknown | NPOC | CCB | | 09.20.2023. | 1.000 | NPOC:0.04506mg/L | |
| 33 | Unknown | NPOC | HS23091538-05 | | 09.20.2023. | 1.000 | NPOC:1.755mg/L | |
| 34 | Unknown | NPOC | HS23091538-06 | | 09.20.2023. | 1.000 | NPOC:3.904mg/L | |
| 35 | Unknown | NPOC | HS23091538-07 | | 09.20.2023. | 1.000 | NPOC:13.40mg/L | |
| 36 | Unknown | NPOC | HS23091538-08 | | 09.20.2023. | 1.000 | NPOC:0.8738mg/L | |
| 37 | Unknown | NPOC | CCV | 322147401 | 09.20.2023. | 1.000 | NPOC:24.80mg/L | |
| 38 | Unknown | NPOC | CCB | | 09.20.2023. | 1.000 | NPOC:0.03481mg/L | |
| 39 | Unknown | NPOC | MBLK-10022023 | | 09.20.2023. | 1.000 | NPOC:0.01690mg/L | |
| 40 | Unknown | NPOC | LCS-10022023 | 3100607901 | 09.20.2023. | 1.000 | NPOC:9.840mg/L | |
| 41 | Unknown | NPOC | LCSD-10022023 | | 09.20.2023. | 1.000 | NPOC:9.750mg/L | |
| 42 | Unknown | NPOC | HS23091887-01 | TOC_W 5310B | 09.20.2023. | 1.000 | NPOC:1.235mg/L | |
| 43 | Unknown | NPOC | HS23091887-01MS | | 09.20.2023. | 1.000 | NPOC:10.92mg/L | |
| 44 | Unknown | NPOC | HS23091865-01 | | 09.20.2023. | 1.000 | NPOC:7.598mg/L | |
| 45 | Unknown | NPOC | HS23091865-02 | | 09.20.2023. | 1.000 | NPOC:11.90mg/L | |
| 46 | Unknown | NPOC | HS23091876-01 | | 09.20.2023. | 1.000 | NPOC:0.5223mg/L | |
| 47 | Unknown | NPOC | HS23091876-02 | | 09.20.2023. | 1.000 | NPOC:0.3423mg/L | |
| 48 | Unknown | NPOC | HS23091876-03 | | 09.20.2023. | 1.000 | NPOC:0.9022mg/L | |
| 49 | Unknown | NPOC | CCV | 322147401 | 09.20.2023. | 1.000 | NPOC:24.87mg/L | |
| 50 | Unknown | NPOC | CCB | | 09.20.2023. | 1.000 | NPOC:0.3686mg/L | |
| 51 | Unknown | NPOC | HS23091876-04 | | 09.20.2023. | 1.000 | NPOC:0.7079mg/L | |
| 52 | Unknown | NPOC | HS23091876-05 | | 09.20.2023. | 1.000 | NPOC:1.372mg/L | |
| 53 | Unknown | NPOC | HS23091876-06 | | 09.20.2023. | 1.000 | NPOC:0.5656mg/L | |

C:\TOC-L\Data\2023_10_02_001.tlx

| | Status | Date / Time | Vial |
|---|---|---|---|
| 1 | Completed | 10/2/2023 11:43: | 1 |
| 2 | Completed | 10/2/2023 11:57: | 2 |
| 3 | Completed | 10/2/2023 12:11: | 3 |
| 4 | Completed | 10/2/2023 12:28: | 4 |
| 5 | Completed | 10/2/2023 12:45: | 5 |
| 6 | Completed | 10/2/2023 1:03:0 | 6 |
| 7 | Completed | 10/2/2023 1:21:0 | 7 |
| 8 | Completed | 10/2/2023 1:38:5 | 8 |
| 9 | Completed | 10/2/2023 1:56:2 | 9 |
| 10 | Completed | 10/2/2023 2:14:1 | 10 |
| 11 | Completed | 10/2/2023 2:31:5 | 11 |
| 12 | Completed | 10/2/2023 2:49:3 | 12 |
| 13 | Completed | 10/2/2023 3:08:1 | 1 |
| 14 | Completed | 10/2/2023 3:21:0 | 2 |
| 15 | Completed | 10/2/2023 3:39:0 | 13 |
| 16 | Completed | 10/2/2023 3:56:4 | 14 |
| 17 | Completed | 10/2/2023 4:14:4 | 15 |
| 18 | Completed | 10/2/2023 4:31:1 | 16 |
| 19 | Completed | 10/2/2023 4:49:4 | 1 |
| 20 | Completed | 10/2/2023 5:02:4 | 2 |
| 21 | Completed | 10/2/2023 5:15:4 | 3 |
| 22 | Completed | 10/2/2023 5:33:1 | 4 |
| 23 | Completed | 10/2/2023 5:50:5 | 5 |
| 24 | Completed | 10/2/2023 6:07:0 | 17 |
| 25 | Completed | 10/2/2023 6:23:5 | 18 |
| 26 | Completed | 10/2/2023 6:41:3 | 19 |
| 27 | Completed | 10/2/2023 6:58:3 | 20 |
| 28 | Completed | 10/2/2023 7:14:4 | 21 |
| 29 | Completed | 10/2/2023 7:31:5 | 22 |
| 30 | Completed | 10/2/2023 7:49:0 | 23 |
| 31 | Completed | 10/2/2023 8:07:3 | 1 |
| 32 | Completed | 10/2/2023 8:21:2 | 2 |
| 33 | Completed | 10/2/2023 8:37:5 | 24 |
| 34 | Completed | 10/2/2023 8:54:2 | 25 |
| 35 | Completed | 10/2/2023 9:11:4 | 26 |
| 36 | Completed | 10/2/2023 9:27:1 | 27 |
| 37 | Completed | 10/2/2023 9:45:3 | 28 |
| 38 | Completed | 10/2/2023 9:58:4 | 29 |
| 39 | Completed | 10/2/2023 10:12: | 3 |
| 40 | Completed | 10/2/2023 10:29: | 4 |
| 41 | Completed | 10/2/2023 10:46: | 5 |
| 42 | Completed | 10/2/2023 11:03: | 30 |
| 43 | Completed | 10/2/2023 11:20: | 31 |
| 44 | Completed | 10/2/2023 11:38: | 32 |
| 45 | Completed | 10/2/2023 11:55: | 33 |
| 46 | Completed | 10/3/2023 12:11: | 34 |
| 47 | Completed | 10/3/2023 12:25: | 35 |
| 48 | Completed | 10/3/2023 12:41: | 36 |
| 49 | Completed | 10/3/2023 1:01:1 | 28 |
| 50 | Completed | 10/3/2023 1:15:5 | 29 |
| 51 | Completed | 10/3/2023 1:31:2 | 37 |
| 52 | Completed | 10/3/2023 1:47:2 | 38 |
| 53 | Completed | 10/3/2023 2:02:5 | 39 |

C:\TOC-L\Data\2023_10_02_001.tlx

| | Type | Analysis | Sample Name | Sample ID | Origin | Manual Diluti | Result | Notes |
|---|---|---|---|---|---|---|---|---|
| 54 | Unknown | NPOC | HS23091876-07 | | 09.20.2023. | 1.000 | NPOC:1.754mg/L | |
| 55 | Unknown | NPOC | CCV | 322147401 | 09.20.2023. | 1.000 | NPOC:24.72mg/L | |
| 56 | Unknown | NPOC | CCB | | 09.20.2023. | 1.000 | NPOC:0.04873mg/L | |
| 57 | Unknown | NPOC | MBLK-10022023 | | 09.20.2023. | 1.000 | NPOC:0.02696mg/L | |
| 58 | Unknown | NPOC | LCS-10022023 | 3100607901 | 09.20.2023. | 1.000 | NPOC:9.780mg/L | |
| 59 | Unknown | NPOC | LCSD-10022023 | | 09.20.2023. | 1.000 | NPOC:9.864mg/L | |
| 60 | Unknown | NPOC | HS23091876-08 | TOC_W 5310B | 09.20.2023. | 1.000 | NPOC:0.3591mg/L | |
| 61 | Unknown | NPOC | HS23091876-08MS | | 09.20.2023. | 1.000 | NPOC:9.912mg/L | |
| 62 | Unknown | NPOC | HS23091876-09 | | 09.20.2023. | 1.000 | NPOC:1.027mg/L | |
| 63 | Unknown | NPOC | HS23091876-10 | | 09.20.2023. | 1.000 | NPOC:2.288mg/L | |
| 64 | Unknown | NPOC | HS23091876-11 | | 09.20.2023. | 1.000 | NPOC:1.639mg/L | |
| 65 | Unknown | NPOC | HS23091876-12 | | 09.20.2023. | 1.000 | NPOC:0.9149mg/L | |
| 66 | Unknown | NPOC | HS23091876-13 | | 09.20.2023. | 1.000 | NPOC:1.741mg/L | |
| 67 | Unknown | NPOC | CCV | 322147401 | 09.20.2023. | 1.000 | NPOC:24.49mg/L | |
| 68 | Unknown | NPOC | CCB | | 09.20.2023. | 1.000 | NPOC:0.00807mg/L | |
| 69 | Unknown | NPOC | HS23091876-14 | | 09.20.2023. | 1.000 | NPOC:0.2576mg/L | |
| 70 | Unknown | NPOC | HS23091876-15 | | 09.20.2023. | 1.000 | NPOC:0.7704mg/L | |
| 71 | Unknown | NPOC | HS23091876-16 | | 09.20.2023. | 1.000 | NPOC:0.3235mg/L | |
| 72 | Unknown | NPOC | HS23091876-17 | | 09.20.2023. | 1.000 | NPOC:0.3771mg/L | |
| 73 | Unknown | NPOC | CCV | 322147401 | 09.20.2023. | 1.000 | NPOC:24.58mg/L | |
| 74 | Unknown | NPOC | CCB | | 09.20.2023. | 1.000 | NPOC:0.00367mg/L | |
| 75 | Unknown | NPOC | CCV | 322147401 | TOC_W 906 | 1.000 | NPOC:24.34mg/L | |
| 76 | Unknown | NPOC | CCB | | TOC_W 906 | 1.000 | NPOC:0.00704mg/L | |
| 77 | Unknown | NPOC | MBLK-10022023 | | TOC_W 906 | 1.000 | NPOC:0.02243mg/L | |
| 78 | Unknown | NPOC | LCS-10022023 | 3100607901 | TOC_W 906 | 1.000 | NPOC:9.698mg/L | |
| 79 | Unknown | NPOC | LCSD-10022023 | | TOC_W 906 | 1.000 | NPOC:9.700mg/L | |
| 80 | Unknown | NPOC | HS23091352-02DF100 | TOC_W 9060 | TOC_W 906 | 1.000 | NPOC:18.09mg/L | |
| 81 | Unknown | NPOC | HS23091352-02DF100M | | TOC_W 906 | 1.000 | NPOC:27.23mg/L | |
| 82 | Unknown | NPOC | HS23091352-04DF100 | | TOC_W 906 | 1.000 | NPOC:8.967mg/L | |
| 83 | Unknown | NPOC | HS23091358-02DF100 | | TOC_W 906 | 1.000 | NPOC:24.15mg/L | |
| 84 | Unknown | NPOC | HS23091358-04DF50 | | TOC_W 906 | 1.000 | NPOC:6.334mg/L | |
| 85 | Unknown | NPOC | HS23091358-06DF10 | | TOC_W 906 | 1.000 | NPOC:6.390mg/L | |
| 86 | Unknown | NPOC | CCV | 322147401 | TOC_W 906 | 1.000 | NPOC:24.30mg/L | |
| 87 | Unknown | NPOC | CCB | | TOC_W 906 | 1.000 | NPOC:0.2542mg/L | |

| | Status | Date / Time | Vial |
|---|---|---|---|
| 54 | Completed | 10/3/2023 2:18:5 | 40 |
| 55 | Completed | 10/3/2023 2:37:2 | 28 |
| 56 | Completed | 10/3/2023 2:50:5 | 29 |
| 57 | Completed | 10/3/2023 3:04:3 | 3 |
| 58 | Completed | 10/3/2023 3:22:0 | 4 |
| 59 | Completed | 10/3/2023 3:39:4 | 5 |
| 60 | Completed | 10/3/2023 3:55:0 | 41 |
| 61 | Completed | 10/3/2023 4:12:0 | 42 |
| 62 | Completed | 10/3/2023 4:27:4 | 43 |
| 63 | Completed | 10/3/2023 4:44:2 | 44 |
| 64 | Completed | 10/3/2023 5:00:3 | 45 |
| 65 | Completed | 10/3/2023 5:16:2 | 46 |
| 66 | Completed | 10/3/2023 5:32:2 | 47 |
| 67 | Completed | 10/3/2023 5:50:2 | 28 |
| 68 | Completed | 10/3/2023 6:03:2 | 29 |
| 69 | Completed | 10/3/2023 6:18:4 | 48 |
| 70 | Completed | 10/3/2023 6:34:2 | 49 |
| 71 | Completed | 10/3/2023 6:49:2 | 50 |
| 72 | Completed | 10/3/2023 7:04:3 | 51 |
| 73 | Completed | 10/3/2023 7:22:5 | 52 |
| 74 | Completed | 10/3/2023 7:35:5 | 53 |
| 75 | Completed | 10/3/2023 7:58:0 | 52 |
| 76 | Completed | 10/3/2023 8:13:2 | 53 |
| 77 | Completed | 10/3/2023 8:29:0 | 54 |
| 78 | Completed | 10/3/2023 8:50:0 | 55 |
| 79 | Completed | 10/3/2023 9:11:0 | 56 |
| 80 | Completed | 10/3/2023 9:32:3 | 57 |
| 81 | Completed | 10/3/2023 9:54:2 | 58 |
| 82 | Completed | 10/3/2023 10:15: | 59 |
| 83 | Completed | 10/3/2023 10:36: | 60 |
| 84 | Completed | 10/3/2023 10:57: | 61 |
| 85 | Completed | 10/3/2023 11:18: | 62 |
| 86 | Completed | 10/3/2023 11:41: | 52 |
| 87 | Completed | 10/3/2023 12:02: | 53 |

# TOC-Control L Report



**Instr.Information**

Instrument Options TOC/ASI/IC Unit/
Catalyst Regular Sensitivity

**Sample**

Sample Name: CCV
Sample ID: 322147401
Origin: 09.20.2023.cal
Status Completed
Chk. Result

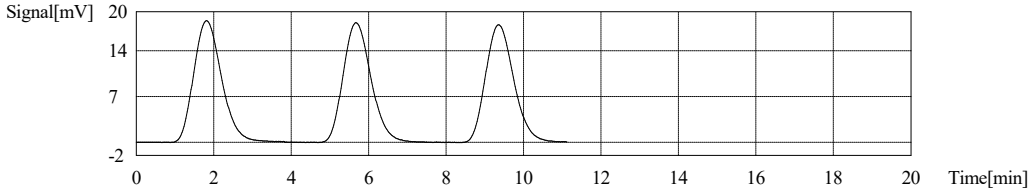
| Type | Anal. | Manual Dilution | Result |
|---|---|---|---|
| Unknown | NPOC | 1.000 | NPOC:24.62mg/L |

1. Det

Anal.: NPOC

| No. | Area | Conc. | Inj. Vol. | Aut. Dil. | Ex. | Cal. Curve | Date / Time |
|---|---|---|---|---|---|---|---|
| 1 | 93.93 | 24.87mg/L | 50uL | 1.000 | | 09.20.2023.2023_09_20_12_39_18.cal | 10/2/2023 11:35:55 AM |
| 2 | 92.96 | 24.61mg/L | 50uL | 1.000 | | 09.20.2023.2023_09_20_12_39_18.cal | 10/2/2023 11:39:49 AM |
| 3 | 92.02 | 24.36mg/L | 50uL | 1.000 | | 09.20.2023.2023_09_20_12_39_18.cal | 10/2/2023 11:43:40 AM |

Mean Area 92.97
Mean Conc. 24.62mg/L




**Sample**

Sample Name: CCB
Sample ID:
Origin: 09.20.2023.cal
Status Completed
Chk. Result

| Type | Anal. | Manual Dilution | Result |
|---|---|---|---|
| Unknown | NPOC | 1.000 | NPOC:0.1542mg/L |

1. Det

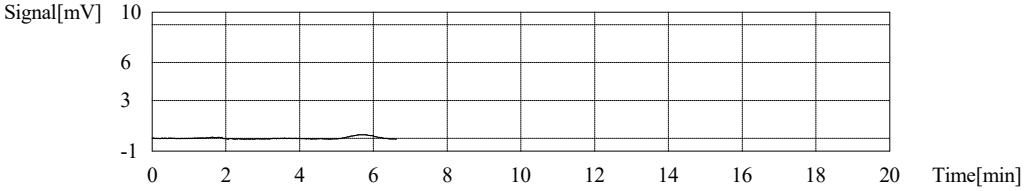
Anal.: NPOC

| No. | Area | Conc. | Inj. Vol. | Aut. Dil. | Ex. | Cal. Curve | Date / Time |
|---|---|---|---|---|---|---|---|
| 1 | 0.000 | 0.000mg/L | 50uL | 1.000 | | 09.20.2023.2023_09_20_12_39_18.cal | 10/2/2023 11:52:19 AM |
| 2 | 0.09240 | 0.02446mg/L | 50uL | 1.000 | | 09.20.2023.2023_09_20_12_39_18.cal | 10/2/2023 11:54:34 AM |
| 3 | 1.655 | 0.4382mg/L | 50uL | 1.000 | | 09.20.2023.2023_09_20_12_39_18.cal | 10/2/2023 11:57:29 AM |

# TOC-Control L Report



Mean Area 0.5825
Mean Conc. 0.1542mg/L




**Sample**

Sample Name: MBLK-10022023
Sample ID:
Origin: 09.20.2023.cal
Status Completed
Chk. Result

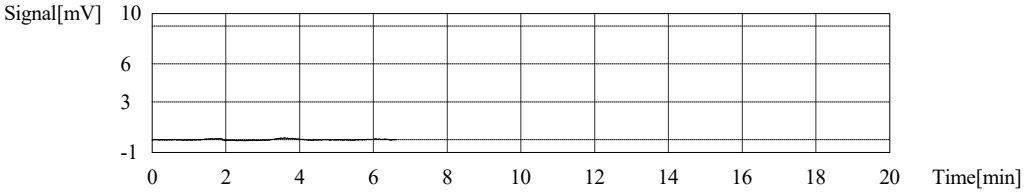
| Type | Anal. | Manual Dilution | Result |
|---|---|---|---|
| Unknown | NPOC | 1.000 | NPOC:0.07529mg/L |

1. Det

Anal.: NPOC

| No. | Area | Conc. | Inj. Vol. | Aut. Dil. | Ex. | Cal. Curve | Date / Time |
|---|---|---|---|---|---|---|---|
| 1 | 0.000 | 0.000mg/L | 50uL | 1.000 | | 09.20.2023.2023_09_20_12_39_18.cal | 10/2/2023 12:06:08 PM |
| 2 | 0.6326 | 0.1675mg/L | 50uL | 1.000 | | 09.20.2023.2023_09_20_12_39_18.cal | 10/2/2023 12:08:52 PM |
| 3 | 0.2205 | 0.05838mg/L | 50uL | 1.000 | | 09.20.2023.2023_09_20_12_39_18.cal | 10/2/2023 12:11:20 PM |

Mean Area 0.2844
Mean Conc. 0.07529mg/L




**Sample**

Sample Name: LCS-10022023
Sample ID: 3100607901
Origin: 09.20.2023.cal
Status Completed
Chk. Result

| Type | Anal. | Manual Dilution | Result |
|---|---|---|---|
| Unknown | NPOC | 1.000 | NPOC:9.772mg/L |

1. Det

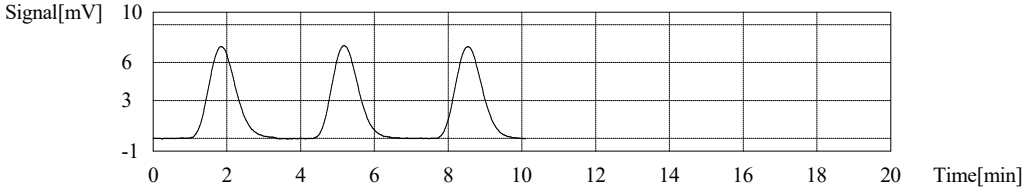
Anal.: NPOC

| No. | Area | Conc. | Inj. Vol. | Aut. Dil. | Ex. | Cal. Curve | Date / Time |
|---|---|---|---|---|---|---|---|
| 1 | 36.98 | 9.791mg/L | 50uL | 1.000 | | 09.20.2023.2023_09_20_12_39_18.cal | 10/2/2023 12:21:26 PM |
| 2 | 36.71 | 9.720mg/L | 50uL | 1.000 | | 09.20.2023.2023_09_20_12_39_18.cal | 10/2/2023 12:25:01 PM |
| 3 | 37.03 | 9.804mg/L | 50uL | 1.000 | | 09.20.2023.2023_09_20_12_39_18.cal | 10/2/2023 12:28:41 PM |

# TOC-Control L Report



Mean Area 36.91
Mean Conc. 9.772mg/L




**Sample**

Sample Name: LCSD-10022023
Sample ID:
Origin: 09.20.2023.cal
Status Completed
Chk. Result

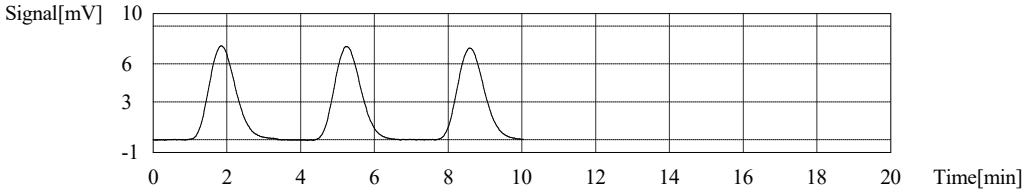
| Type | Anal. | Manual Dilution | Result |
|---|---|---|---|
| Unknown | NPOC | 1.000 | NPOC:9.925mg/L |

1. Det

Anal.: NPOC

| No. | Area | Conc. | Inj. Vol. | Aut. Dil. | Ex. | Cal. Curve | Date / Time |
|---|---|---|---|---|---|---|---|
| 1 | 37.61 | 9.958mg/L | 50uL | 1.000 | | 09.20.2023.2023_09_20_12_39_18.cal | 10/2/2023 12:38:50 PM |
| 2 | 37.65 | 9.968mg/L | 50uL | 1.000 | | 09.20.2023.2023_09_20_12_39_18.cal | 10/2/2023 12:42:26 PM |
| 3 | 37.20 | 9.849mg/L | 50uL | 1.000 | | 09.20.2023.2023_09_20_12_39_18.cal | 10/2/2023 12:45:59 PM |

Mean Area 37.49
Mean Conc. 9.925mg/L




**Sample**

Sample Name: HS23091823-01
Sample ID: TOC_W
Origin: 09.20.2023.cal
Status Completed
Chk. Result

| Type | Anal. | Manual Dilution | Result |
|---|---|---|---|
| Unknown | NPOC | 1.000 | NPOC:6.376mg/L |

1. Det

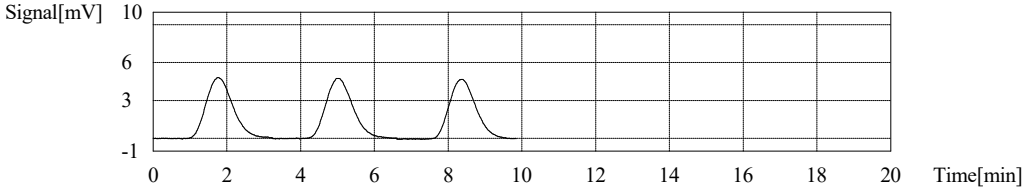
Anal.: NPOC

| No. | Area | Conc. | Inj. Vol. | Aut. Dil. | Ex. | Cal. Curve | Date / Time |
|---|---|---|---|---|---|---|---|
| 1 | 24.23 | 6.415mg/L | 50uL | 1.000 | | 09.20.2023.2023_09_20_12_39_18.cal | 10/2/2023 12:55:59 PM |
| 2 | 24.15 | 6.394mg/L | 50uL | 1.000 | | 09.20.2023.2023_09_20_12_39_18.cal | 10/2/2023 12:59:35 PM |
| 3 | 23.86 | 6.317mg/L | 50uL | 1.000 | | 09.20.2023.2023_09_20_12_39_18.cal | 10/2/2023 1:03:04 PM |

# TOC-Control L Report



Mean Area 24.08
Mean Conc. 6.376mg/L




**Sample**

Sample Name: CCV
Sample ID: 322147401
Origin: 09.20.2023.cal
Status Completed
Chk. Result

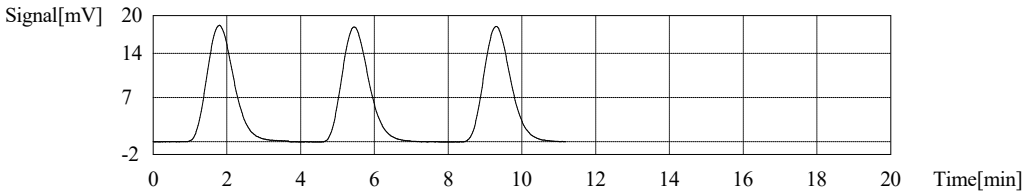
| Type | Anal. | Manual Dilution | Result |
|---|---|---|---|
| Unknown | NPOC | 1.000 | NPOC:24.87mg/L |

1. Det

Anal.: NPOC

| No. | Area | Conc. | Inj. Vol. | Aut. Dil. | Ex. | Cal. Curve | Date / Time |
|---|---|---|---|---|---|---|---|
| 1 | 93.78 | 24.83mg/L | 50uL | 1.000 | | 09.20.2023.2023_09_20_12_39_18.cal | 10/2/2023 3:00:12 PM |
| 2 | 93.91 | 24.86mg/L | 50uL | 1.000 | | 09.20.2023.2023_09_20_12_39_18.cal | 10/2/2023 3:04:16 PM |
| 3 | 94.12 | 24.92mg/L | 50uL | 1.000 | | 09.20.2023.2023_09_20_12_39_18.cal | 10/2/2023 3:08:12 PM |

Mean Area 93.94
Mean Conc. 24.87mg/L




**Sample**

Sample Name: CCB
Sample ID:
Origin: 09.20.2023.cal
Status Completed
Chk. Result

| Type | Anal. | Manual Dilution | Result |
|---|---|---|---|
| Unknown | NPOC | 1.000 | NPOC:0.000mg/L |

1. Det

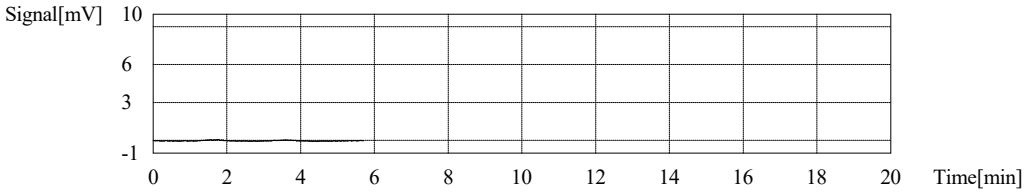
Anal.: NPOC

| No. | Area | Conc. | Inj. Vol. | Aut. Dil. | Ex. | Cal. Curve | Date / Time |
|---|---|---|---|---|---|---|---|
| 1 | 0.000 | 0.000mg/L | 50uL | 1.000 | | 09.20.2023.2023_09_20_12_39_18.cal | 10/2/2023 3:16:52 PM |
| 2 | 0.000 | 0.000mg/L | 50uL | 1.000 | | 09.20.2023.2023_09_20_12_39_18.cal | 10/2/2023 3:19:00 PM |
| 3 | 0.000 | 0.000mg/L | 50uL | 1.000 | | 09.20.2023.2023_09_20_12_39_18.cal | 10/2/2023 3:21:08 PM |

# TOC-Control L Report



Mean Area 0.000
Mean Conc. 0.000mg/L




**Sample**

Sample Name: HS23091239-01
Sample ID:
Origin: 09.20.2023.cal
Status Completed
Chk. Result

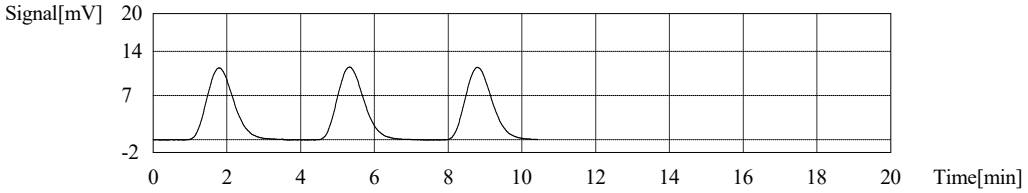
| Type | Anal. | Manual Dilution | Result |
|---|---|---|---|
| Unknown | NPOC | 1.000 | NPOC:15.44mg/L |

1. Det

Anal.: NPOC

| No. | Area | Conc. | Inj. Vol. | Aut. Dil. | Ex. | Cal. Curve | Date / Time |
|---|---|---|---|---|---|---|---|
| 1 | 57.96 | 15.35mg/L | 50uL | 1.000 | | 09.20.2023.2023_09_20_12_39_18.cal | 10/2/2023 3:49:24 PM |
| 2 | 58.63 | 15.52mg/L | 50uL | 1.000 | | 09.20.2023.2023_09_20_12_39_18.cal | 10/2/2023 3:53:07 PM |
| 3 | 58.41 | 15.47mg/L | 50uL | 1.000 | | 09.20.2023.2023_09_20_12_39_18.cal | 10/2/2023 3:56:46 PM |

Mean Area 58.33
Mean Conc. 15.44mg/L




**Sample**

Sample Name: HS23091239-01MS
Sample ID:
Origin: 09.20.2023.cal
Status Completed
Chk. Result

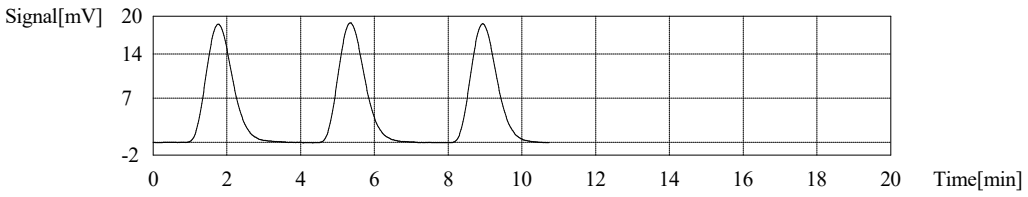
| Type | Anal. | Manual Dilution | Result |
|---|---|---|---|
| Unknown | NPOC | 1.000 | NPOC:25.06mg/L |

1. Det

Anal.: NPOC

| No. | Area | Conc. | Inj. Vol. | Aut. Dil. | Ex. | Cal. Curve | Date / Time |
|---|---|---|---|---|---|---|---|
| 1 | 94.16 | 24.93mg/L | 50uL | 1.000 | | 09.20.2023.2023_09_20_12_39_18.cal | 10/2/2023 4:07:07 PM |
| 2 | 95.63 | 25.32mg/L | 50uL | 1.000 | | 09.20.2023.2023_09_20_12_39_18.cal | 10/2/2023 4:10:57 PM |
| 3 | 94.17 | 24.93mg/L | 50uL | 1.000 | | 09.20.2023.2023_09_20_12_39_18.cal | 10/2/2023 4:14:45 PM |

Mean Area 94.65
Mean Conc. 25.06mg/L




**Sample**

Sample Name: CCV
Sample ID: 322147401
Origin: 09.20.2023.cal
Status Completed
Chk. Result

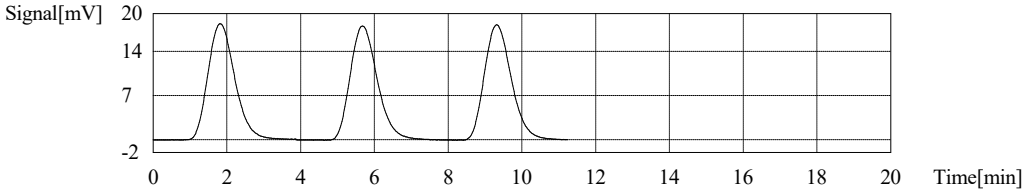
| Type | Anal. | Manual Dilution | Result |
|---|---|---|---|
| Unknown | NPOC | 1.000 | NPOC:24.78mg/L |

1. Det

Anal.: NPOC

| No. | Area | Conc. | Inj. Vol. | Aut. Dil. | Ex. | Cal. Curve | Date / Time |
|---|---|---|---|---|---|---|---|
| 1 | 93.85 | 24.85mg/L | 50uL | 1.000 | | 09.20.2023.2023_09_20_12_39_18.cal | 10/2/2023 4:41:56 PM |
| 2 | 93.19 | 24.67mg/L | 50uL | 1.000 | | 09.20.2023.2023_09_20_12_39_18.cal | 10/2/2023 4:45:49 PM |
| 3 | 93.73 | 24.82mg/L | 50uL | 1.000 | | 09.20.2023.2023_09_20_12_39_18.cal | 10/2/2023 4:49:47 PM |

Mean Area 93.59
Mean Conc. 24.78mg/L




**Sample**

Sample Name: CCB
Sample ID:
Origin: 09.20.2023.cal
Status Completed
Chk. Result

| Type | Anal. | Manual Dilution | Result |
|---|---|---|---|
| Unknown | NPOC | 1.000 | NPOC:0.000mg/L |

1. Det

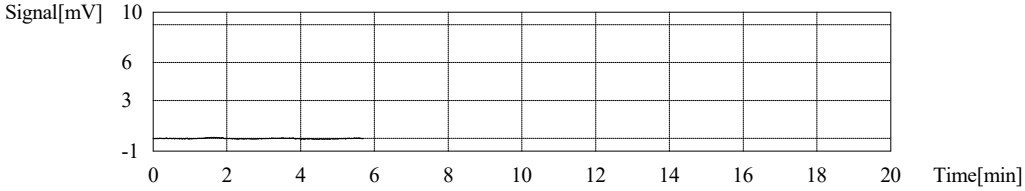
Anal.: NPOC

| No. | Area | Conc. | Inj. Vol. | Aut. Dil. | Ex. | Cal. Curve | Date / Time |
|---|---|---|---|---|---|---|---|
| 1 | 0.000 | 0.000mg/L | 50uL | 1.000 | | 09.20.2023.2023_09_20_12_39_18.cal | 10/2/2023 4:58:27 PM |
| 2 | 0.000 | 0.000mg/L | 50uL | 1.000 | | 09.20.2023.2023_09_20_12_39_18.cal | 10/2/2023 5:00:36 PM |
| 3 | 0.000 | 0.000mg/L | 50uL | 1.000 | | 09.20.2023.2023_09_20_12_39_18.cal | 10/2/2023 5:02:44 PM |

# TOC-Control L Report

2023_10_02_001.tlx

| | |
|---|---|
| Mean Area | 0.000 |
| Mean Conc. | 0.000mg/L |



# HS23091823 E2300884 PERCH Level IV Report

ALS WO# HS23091823

October 02, 2023 Service Request No:E2300884

James Guin
ALS Environmental - US
10450 Stancliff Rd #210
Houston, TX 77099

**Laboratory Results for: HS23091823**

Dear James,

Enclosed are the results of the sample(s) submitted to our laboratory September 29, 2023
For your reference, these analyses have been assigned our service request number **E2300884.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current TNI standards, where applicable, and except as noted in the laboratory case narrative provided. All results are intended to be considered in their entirety and ALS Environmental is not responsible for use of less than the complete final report. Results apply only to the items submitted to the laboratory, as received for analysis. In accordance with the current TNI Standard, a statement on the estimated uncertainty of measurement of any quantitative analysis will be supplied upon request.

Please contact me if you have any questions. My extension is 2190. You may also contact me via email at hussam.kelany@alsglobal.com.

Respectfully submitted,

**ALS Group USA, Corp. dba ALS Environmental**

H Kelany

Hussam Kelany
Project Manager

ADDRESS 10450 Stancliff Rd., Suite 210, Houston, TX 77099
PHONE +1 281 530 5656 | FAX +1 281 530 5887
ALS Group USA, Corp.
dba ALS Environmental

# Certificate of Analysis

**ALS Environmental - Houston Specialties Laboratory**
10450 Stancliff Rd., Suite 210, Houston TX 77099
Phone (281)530-5656 Fax (281)530-5887
www.alsglobal.com

| | | | |
|---|---|---|---|
| **Client:** | ALS Environmental - US | **Service Request No.:** | E2300884 |
| **Project:** | HS23091823 | **Date Received:** | 09/29/23 |
| **Sample Matrix:** | Water | | |

## CASE NARRATIVE

All analyses were performed in adherence to the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier IV. When appropriate to the method, method blank results have been reported with each analytical test.

### Sample Receipt

Two samples were received for analysis at ALS Environmental in Houston on 09/29/23.

The samples were received in good condition and are consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

### Data Validation Notes and Discussion

**Precision and Accuracy:**

EQ2300472: Laboratory Control Spike/Duplicate Laboratory Control Spike (LCS/DLCS) samples were analyzed and reported in lieu of a MS/MSD for this extraction batch.

*The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and ALS Environmental (ALS) is not responsible for utilization of less than the complete report.*

*Use of ALS group USA Corp dba ALS Environmental (ALS)'s Name. Client shall not use ALS's name or trademark in any marketing or reporting materials, press releases or in any other manner ("Materials") whatsoever and shall not attribute to ALS any test result, tolerance or specification derived from ALS's data ("Attribution") without ALS's prior written consent, which may be withheld by ALS for any reason in its sole discretion. To request ALS's consent, Client shall provide copies of the proposed Materials or Attribution and describe in writing Client's proposed use of such Materials or Attribution. If ALS has not provided written approval of the Materials or Attribution within ten (10) days of receipt from Client, Client's request to use ALS's name or trademark in any Materials or Attribution shall be deemed denied. ALS may, in its discretion, reasonably charge Client for its time in reviewing Materials or Attribution requests. Client acknowledges and agrees that the unauthorized use of ALS's name or trademark may cause ALS to incur irreparable harm for which the recovery of money damages will be inadequate. Accordingly, Client acknowledges and agrees that a violation shall justify preliminary injunctive relief. For questions contact the laboratory.*

**Client:** ALS Environmental - US **Service Request:**E2300884
**Project:** HS23091823

## SAMPLE CROSS-REFERENCE

| SAMPLE # | CLIENT SAMPLE ID | DATE | TIME |
|---|---|---|---|
| E2300884-001 | LH18/24-SP650_092823_BIX | 9/28/2023 | 1300 |
| E2300884-002 | LH18/24-SP650_092823_AIX | 9/28/2023 | 1300 |

# Service Request Summary

**Folder #:** **E2300884**
Client Name: ALS Environmental - US
Project Name: HS23091823
Project Number:

**Report To:** James Guin
ALS Environmental - US
10450 Stancliff Rd #210
Houston, TX 77099
USA
Phone Number: 281-530-5656
Cell Number:
Fax Number:
E-mail: james.guin@alsglobal.com

Project Chemist: Hussam Kelany
Originating Lab: HOUSTON
Logged By: CGRANDITS
Date Received: 09/29/23
Internal Due Date: 10/2/2023
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS23091823
EDD: BASIC_WQC_CASNo, EQUIS EFWEDD_LHAAP

2 120 mL-Plastic Bottle Natural WM Unpreserved
**Location:** EHRMS-AirArch 1
**Pressure Gas:**
**Rush**

| Lab Samp No. | Client Samp No | Matrix | Collected | HOUSTON<br>ClO4 DOD/6850 |
|---|---|---|---|---|
| E2300884-001 | LH18/24-SP650_092823_BIX | Water | 09/28/23 1300 | **IV** |
| E2300884-002 | LH18/24-SP650_092823_AIX | Water | 09/28/23 1300 | **IV** |

# Service Request Summary

**Folder #:** **E2300884**
Client Name: ALS Environmental - US
Project Name: HS23091823
Project Number:

**Report To:** James Guin
ALS Environmental - US
10450 Stancliff Rd #210
Houston, TX 77099
USA
Phone Number: 281-530-5656
Cell Number:
Fax Number:
E-mail: james.guin@alsglobal.com

Project Chemist: Hussam Kelany
Originating Lab: HOUSTON
Logged By: CGRANDITS
Date Received: 09/29/23
Internal Due Date: 10/2/2023
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS23091823
EDD: BASIC_WQC_CASNo, EQUIS EFWEDD_LHAAP

2 120 mL-Plastic Bottle Natural WM Unpreserved
**Location:** EHRMS-AirArch 1
**Pressure Gas:**
**Rush**

## Test Comments:

| Group | Test/Method | Samples | Comments |
|---|---|---|---|
| Semivoa GCMS | ClO4 DOD/6850 | 2 | Level IV due 9/27 |

# Data Qualifiers

## Lab Standard

| | |
|---|---|
| + | Possible Tedlar bag artifact. |
| A | TIC is a suspected aldol-condensation product |
| B | Analyte found in the associated method blank as well as in the sample. |
| BC | Reported results are not blank corrected. |
| BH | The back section of the tube yielded higher results than the front. |
| BT | Results indicated possible breakthrough; back section >=10% front section. |
| C | Result identification confirmed. |
| D | Compound identified in an analysis at a secondary dilution factor |
| D | Spike was diluted out |
| DE | Reported results are corrected for desorption efficiency. |
| E | Estimated value. Concentration above calibration range |
| E | The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample. |
| F | The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard. |
| H | The chromatographic fingerprint of the sample resembles a petroleum product but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard. |
| H1 | Sample analysis performed past holding time. See case narrative. |
| H2 | Initial analysis within holding time. Reanalysis for the required dilution was past holding time. |
| H3 | Sample was received and analyzed past holding time. |
| H4 | Sample was extracted past required extraction holding time, but analyzed within analysis holding time. See case narrative. |
| I | (Auto) The reference ion ratio was outside acceptance criteria, which may indicate a potential bias to this result. |
| I | Internal standard not within the specified limits. See case narrative. |
| I | The reference ion ratio was outside acceptance criteria, which may indicate a potential bias to this result. |
| J | Estimated Value. Concentration found below MRL. |
| K | A deflection in the QC ion may indicate interference with the quantitation of this ion. The concentration of this analyte should be considered as an estimate. |
| K | Analyte was detected above the method reporting limit prior to normalization. |
| K | The reference ion ratio was outside acceptance criteria, which may indicate a potential bias to this result. |
| L | The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard. |
| L1 | Laboratory control sample recovery outside the specified limits; results may be biased high. |
| L2 | Laboratory control sample recovery outside the specified limits; results may be biased low. |
| L3 | Laboratory control sample recovery outside the specified limits. |
| M | Matrix interference; results may be biased high. |
| M | The duplicate injection precision not met. |

# Data Qualifiers

## Lab Standard

| | |
|---|---|
| M1 | Matrix interference due to coelution with a non-target compound; results may be biased high. |
| N | Presumptive evidence of a compound for TICs that have been identified based on a mass spectral library search. |
| N | The Matrix Spike sample recovery is not within control limits. See case narrative. |
| O | The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard. |
| P | Indicates chlorodiphenyl ether interference present at the retention time of the target compound. |
| P | Pesticide/Aroclor target analyte > 40% difference for detected concentrations between GC columns |
| Q | Indicates as estimated value because the P and P + 2 theoretical abundance ratio does not meet method criteria. |
| R | Duplicate Precision not met. |
| R1 | Duplicate precision not within the specified limits; however, the results are below the MRL and considered estimated. |
| S | Surrogate recovery not within specified limits. |
| S | The reported value was determined by the Method of Standard Additions (MSA). |
| T | Analyte is a tentatively identified compound, result is estimated. |
| U | Compound was analyzed for, but was not detected (ND). |
| V1 | The continuing calibration verification standard was outside (biased high) the specified limits for this compound. |
| V2 | The continuing calibration verification standard was outside (biased low) the specified limits for this compound. |
| W | Result quantified, but the corresponding peak was detected outside the generated retention time window. |
| W | The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance. |
| X | See case narrative. |
| Y | Recovery outside limits |
| Y | The chromatogram resembles a petroleum product but does not match the calibration standard. |
| Z | The chromatogram does not resemble a petroleum product. |
| i | The MRL/MDL has been elevated due to a matrix interference. |

# ALS Laboratory Group

**Acronyms**

| | |
|---|---|
| Cal | Calibration |
| Conc | CONCentration |
| Dioxin(s) | Polychlorinated dibenzo-p-dioxin(s) |
| EDL | Estimated Detection Limit |
| EMPC | Estimated Maximum Possible Concentration |
| Flags | Data qualifiers |
| Furan(s) | Polychlorinated dibenzofuran(s) |
| g | Grams |
| ICAL | Initial CALibration |
| ID | IDentifier |
| Ions | Masses monitored for the analyte during data acquisition |
| L | Liter (s) |
| LCS | Laboratory Control Sample |
| DLCS | Duplicate Laboratory Control Sample |
| MB | Method Blank |
| MCL | Method Calibration Limit |
| MDL | Method Detection Limit |
| mL | Milliliters |
| MS | Matrix Spiked sample |
| DMS | Duplicate Matrix Spiked sample |
| NO | Number of peaks meeting all identification criteria |
| PCDD(s) | Polychlorinated dibenzo-p-dioxin(s) |
| PCDF(s) | Polychlorinated dibenzofuran(s) |
| ppb | Parts per billion |
| ppm | Parts per million |
| ppq | Parts per quadrillion |
| ppt | Parts per trillion |
| QA | Quality Assurance |
| QC | Quality Control |
| Ratio | Ratio of areas from monitored ions for an analyte |
| % Rec. | Percent recovery |
| RPD | Relative Percent Difference |
| RRF | Relative Response Factor |
| RT | Retention Time |
| SDG | Sample Delivery Group |
| S/N | Signal-to-noise ratio |
| TEF | Toxicity Equivalence Factor |
| TEQ | Toxicity Equivalence Quotient |

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ALS Environmental

## State Certifications, Accreditations, and Licenses

| Agency | Number | Expire Date |
|---|---|---|
| Arizona Department of Health Services | AZ0793_2024 | 5/27/2024 |
| Arkansas Department of Environmental Quality | 88-00356 | 3/27/2024 |
| California State Environmental Laboratory Accreditation Program | 2919 | 4/30/2024 |
| Department of Defense | L23-358 | 5/31/2025 |
| Department of Defense | L22-90 | 3/31/2024 |
| Florida Department of Health | E87611-38 | 6/30/2024 |
| Illinois Environmental Protection Agency | 2000322023-11 | 6/30/2024 |
| Kansas Department of Health and Environment | E-10352 2023-2024 | 7/31/2024 |
| Louisiana Department of Environmental Quality | 03087-2023 | 6/30/2024 |
| Louisiana Department of Health and Hospitals | LA028-2023 | 12/31/2023 |
| Maine Department of Health and Human Services | 2022017 | 6/5/2024 |
| Maryland Department of the Environment | 343-2023 | 6/30/2024 |
| Michigan Depratment of Environmental Quality | 9971-2023 | 4/30/2024 |
| Minnesota Department of Health | 2368363 | 12/31/2023 |
| Nebraska Department of Health and Human Services | NE-OS-25-13 | 4/30/2024 |
| Nevada Division of Environmental Protection | TX026932024-1 | 7/31/2024 |
| New Hampshire Environmental Laboratory Accreditation Program | 209423 | 4/24/2024 |
| New Jersey Department of Environmental Protection | TX008-2024 | 6/30/2024 |
| New York Department of Health | 11707 | 3/31/2024 |
| Oregon Environmental Laboratory Accreditation Program | TX200002-011 | 5/15/2024 |
| Pennsylvania Department of Environmental Protection | 68-03441-017 | 6/30/2024 |
| Perry Johnson Laboratory Accreditation | L22-91 | 3/31/2024 |
| Tennessee Department of Environment and Concervation | TN04016-2023 | 4/30/2024 |
| Texas Commision on Environmental Quality | T104704231-23-30 | 4/30/2024 |
| Utah Department of Health Environmental Laboratory Certification | TX026932023-14 | 7/31/2024 |
| Washington Department of Ecology | C819-22 | 11/14/2023 |

# Chain of Custody

**ALS Environmental - Houston Specialties Laboratory**
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F: +1 281 530 5887
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# Subcontract Chain of Custody

**SAMPLING STATE:** **Dept of Defense** **COC ID: 23359**

**SUBCONTRACT TO:**

ALS Environmental
10450 Stancliff RoadSuite 210
Houston, TX 77084

**Phone:** +1 281 530 5656

**CUSTOMER INFORMATION:**

| | |
|---|---|
| **Company:** | ALS Houston |
| **Contact:** | James Guin |
| **Address:** | 10450 Stancliff Rd, Ste 210 |
| **Phone:** | +1 281 530 5656 |
| **Email:** | James.Guin@alsglobal.com |
| **Alternate Contact:** | Jumoke M. Lawal |
| **Email:** | jumoke.lawal@alsglobal.com |

**INVOICE INFORMATION:**

| | |
|---|---|
| **Company:** | ALS Houston |
| **Contact:** | Accounts Payable |
| **Address:** | 10450 Stancliff Rd, Ste 210 |
| **Phone:** | +1 281 530 5656 |
| **Reference:** | HS23091823 |
| **TSR:** | Holly Tignac |

| | LAB SAMPLE ID | CLIENT SAMPLE ID | MATRIX | COLLECT DATE |
|---|---|---|---|---|
| | ANALYSIS REQUESTED | | | DUE DATE |
| 1. | **HS23091823-02** | **LH18/24-SP650_092823_BIX** | **Water** | **28 Sep 2023 13:00** |
| | 6850-Perch. DOD Level II & Level IV in separate pdf - 6850-Perch. DOD Level II & Level IV in separate pdfInclude EDDS - EQUIS EFWEDD_LHAAP BASICWQC_CASNo | | | 02 Oct 2023 |
| 2. | **HS23091823-03** | **LH18/24-SP650_092823_AIX** | **Water** | **28 Sep 2023 13:00** |
| | 6850-Perch. DOD Level II & Level IV in separate pdf - 6850-Perch. DOD Level II & Level IV in separate pdfInclude EDDS - EQUIS EFWEDD_LHAAP BASICWQC_CASNo | | | 02 Oct 2023 |

**Comments:** Please analyze for the analysis listed above. Send report to the emails shown above.

**QC Level:** DOD IV (DoD Data Package)

E2300884 5
ALS Environmental - US
HS23091823

Relinquished By: PG Date/Time:

Received By: Date/Time: 9.29.23 1241

Cooler ID(s): Temperature(s):

ALS Environmental

# Cooler Receipt Form

Project Chemist HI

Client/Project ALS

Thermometer ID IR-1

Date/Time Received: 9.29.23 Initials: LY

Date/Time Logged in: 9.29.23 Initials LY

1. Method of delivery: ○ US Mail ○ Fed Ex ○ UPS ○ DHL ☒ Courier (ALS) ○ Client

2. Samples received in: ☑ Cooler ○ Box ○ Envelope ○ Other

3. Were custody seals on coolers? ○ Yes ☑ No
   Were they intact? ○ Yes ○ No ☑ N/A
   Were they signed and dated? ○ Yes ○ No ☑ N/A
   If yes, how many and where?

4. Packing Material: ○ Inserts ☑ Baggies ○ Bubble Wrap ○ Gel Packs ☑ Wet Ice ○ Sleeves ○ Other

5. Foreign or Regulated Soil? ○ Yes ○ No Location of Sampling:

| Cooler Tracking Number | COC ID | Date Opened | Time Opened | Opened By | Temp. °C | Temp Blank? |
|---|---|---|---|---|---|---|
| - | | 9.29.23 | 1241 | LY | 1.7 | ☒ |
| | | | | | | ☐ |
| | | | | | | ☐ |
| | | | | | | ☐ |

6. Were custody papers properly filled out (ink, signed, dated, etc)? ☒ Yes ○ No
7. Did all bottles arrive in good condition (not broken, no signs of leakage)? ☒ Yes ○ No
8. Were all sample labels complete (i.e., sample ID, analysis, preservation, etc)? ☑ Yes ○ No
9. Were appropriate bottles/containers and volumes received for the requested tests? ☑ Yes ○ No
10. Did sample labels and tags agree with custody documents? ☒ Yes ○ No

Notes, Discrepancies, & Resolutions:

Service request Label: E2300884 ALS Environmental - US HS23091823 5

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**F:** +1 281 530 5887
**www.alsglobal.com**

# SAMPLE ACCEPTANCE POLICY

This policy outlines the criteria samples must meet to be accepted by ALS Environmental – Houston HRMS.

**Cooler Custody Seals (desirable, mandatory if specified in SAP):**

- ✓ Intact on outside of cooler, signed and dated

**Chain-of-Custody (COC) documentation (mandatory):**

The following is required on each COC:

- ✓ Sample ID, the location, date and time of collection, collector's name, preservation type, sample type, and any other special remarks concerning the sampleThe COC must be completed in ink.
- ✓ Signature and date of relinquishing party.

In the absence of a COC at sample receipt, the COC will be requested from the client.

**Sample Integrity (mandatory):**

Samples are inspected upon arrival to ensure that sample integrity was not compromised during transfer to the laboratory.

- ✓ Sample containers must arrive in good condition (not broken or leaking).
- ✓ Samples must be labeled appropriately, including Sample IDs, and requested test using durable labels and indelible ink.
- ✓ The correct type of sample bottle must be used for the method requested.
- ✓ An appropriate sample volume, or weight, must be received.
- ✓ Sample IDs and number of containers must reconcile with the COC.
- ✓ Samples must be received within the method defined holding time.

**Temperature Requirement (varies by sample matrix):**

- ✓ Aqueous and Non-aqueous samples must be shipped and stored cold, at 0 to 6ºC.
- ✓ Tissue samples must be shipped and stored frozen, at -20 to -10ºC.
- ✓ Air samples are shipped and stored cold, at 0 to 6ºC
- ✓ The sample temperature must be recorded on the COC

All cooler inspections are documented on the Cooler Receipt Form (CRF). A separate CRF is completed for each service request. Any samples not meeting the above criteria are noted on the CRF and the Project Manager notified. The Project Manager must resolve any sample integrity issues with the client prior to proceeding with the analysis. Such resolutions are documented in writing and filed with the project folder. Data associated with samples received outside of this acceptance policy will be qualified on the case narrative of the final report

# Preparation Information Benchsheets

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# *Preparation Information Benchsheet*

**Prep Run#:** 427352 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
**Team:** Semivoa GCMS/XMI **Prep Method:** Method **Prep Date/Time:** 9/29/23 10:50

| # | Lab Code | Client ID | B# | Method /Test | pH | Cl | Matrix | Amt. Ext. | Sample Description |
|---|---|---|---|---|---|---|---|---|---|
| 1 | E2300884-001 | LH18/24-SP650_092823_BIX | .01 | 6850/ClO4 DOD | | | Water | 10mL | |
| 2 | E2300884-002 | LH18/24-SP650_092823_AIX | .01 | 6850/ClO4 DOD | | | Water | 10mL | |
| 3 | EQ2300472-01 | MB | | 6850/ClO4 | | | Liquid | 10mL | |
| 4 | EQ2300472-02 | LCS | | 6850/ClO4 | | | Liquid | 10mL | |
| 5 | EQ2300472-03 | DLCS | | 6850/ClO4 | | | Liquid | 10mL | |
| 6 | K2310740-001 | LGAC-INF-092523 | .01 | 6850/ClO4 | | | Water | 10mL | |
| 7 | K2310740-002 | LGAC-INT1-092523 | .01 | 6850/ClO4 | | | Water | 10mL | |
| 8 | K2310740-003 | LGAC-INT2-092523 | .01 | 6850/ClO4 | | | Water | 10mL | |
| 9 | R2308735-004 | 2309200908A BLM-42-569 | .01 | 6850/ClO4 | | | Water | 10mL | |
| 10 | R2308735-008 | 2309201031X 700-H-670 | .01 | 6850/ClO4 | | | Water | 10mL | |
| 11 | R2308735-013 | 2309201408C 300-D-153 | .01 | 6850/ClO4 | | | Water | 10mL | |
| 12 | R2308735-018 | 2309201425A BLM-42-709 | .01 | 6850/ClO4 | | | Water | 10mL | |
| 13 | R2308811-001 | 2309210851A 700-D-186 | .01 | 6850/ClO4 | | | Water | 10mL | |
| 14 | R2308811-002 | 2309210908C 700-J-200 | .01 | 6850/ClO4 | | | Water | 10mL | |
| 15 | R2308811-006 | 2309210948X 700-H-535 | .01 | 6850/ClO4 | | | Water | 10mL | |
| 16 | R2308811-008 | 2309211425C 700-A-253 | .01 | 6850/ClO4 | | | Water | 10mL | |
| 17 | R2308811-009 | 2309250955X 700-H-350 | .01 | 6850/ClO4 | | | Water | 10mL | |

## Spiking Solutions

Name: Perchlorate Intermediate Stock1 Inventory ID 230342 Logbook Ref: Perchlorate (1st Source) Expires On: 03/07/2024

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| EQ2300472-02 | 1.00µL | EQ2300472-02 | 1.00µL | EQ2300472-03 | 1.00µL | EQ2300472-03 | 1.00µL |

Name: Perchlorate Internal Standard 1ug/mL Inventory ID 230372 Logbook Ref: Perchlorate Internal Standard Expires On: 04/30/2024

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| E2300884-001 | 100.00µL | E2300884-002 | 100.00µL | EQ2300472-01 | 100.00µL | EQ2300472-01 | 100.00µL | EQ2300472-02 | 100.00µL | EQ2300472-02 | 100.00µL |
| EQ2300472-03 | 100.00µL | EQ2300472-03 | 100.00µL | K2310740-001 | 100.00µL | K2310740-002 | 100.00µL | K2310740-003 | 100.00µL | R2308735-004 | 100.00µL |
| R2308735-008 | 100.00µL | R2308735-013 | 100.00µL | R2308735-018 | 100.00µL | R2308811-001 | 100.00µL | R2308811-002 | 100.00µL | R2308811-006 | 100.00µL |
| R2308811-008 | 100.00µL | R2308811-009 | 100.00µL | | | | | | | | |

## Preparation Steps

Step: Preparation
Started: 9/29/23 10:50
Finished: 9/29/23 11:50
By: XMI
Comments

# *Preparation Information Benchsheet*

**Prep Run#:** 427352
**Team:** Semivoa GCMS/XMI

**Prep WorkFlow:** GenExt28Day
**Prep Method:** Method

**Status:** Prepped
**Prep Date/Time:** 9/29/23 10:50

Comments: _____

Reviewed By: _____ Date: _____

Chain of Custody

Relinquished By: _____ Date: _____

Received By: _____ Date: _____

Extracts Examined
Yes No

# Analytical Results

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**ALS Group USA, Corp. dba ALS Environmental**

Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | ALS Environmental - US | **Service Request:** | E2300884 |
| **Project:** | HS23091823 | **Date Collected:** | 9/28/23 1300 |
| **Sample Matrix:** | Water | **Date Received:** | 9/29/23 |
| **Sample Name:** | LH18/24-SP650_092823_BIX | **Units:** | µg/L |
| **Lab Code:** | E2300884-001 | **Basis:** | NA |

**Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry**

**Analytical Method:** 6850
**Prep Method:** Method

| Analyte Name | Result | Q | LOQ | LOD | MDL | Dilution Factor | Date Extracted | Date Analyzed | Extraction Lot | Analysis Lot | Note |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | **4.57** | | 0.100 | 0.0500 | 0.0250 | 1 | 9/29/23 | 9/29/23 15:06 | 427352 | 819068 | |

**ALS Group USA, Corp. dba ALS Environmental**

Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | ALS Environmental - US | **Service Request:** | E2300884 |
| **Project:** | HS23091823 | **Date Collected:** | 9/28/23 1300 |
| **Sample Matrix:** | Water | **Date Received:** | 9/29/23 |
| **Sample Name:** | LH18/24-SP650_092823_AIX | **Units:** | µg/L |
| **Lab Code:** | E2300884-002 | **Basis:** | NA |

**Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry**

**Analytical Method:** 6850
**Prep Method:** Method

| Analyte Name | Result | Q | LOQ | LOD | MDL | Dilution Factor | Date Extracted | Date Analyzed | Extraction Lot | Analysis Lot | Note |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | **1.38** | | 0.100 | 0.0500 | 0.0250 | 1 | 9/29/23 | 9/29/23 15:11 | 427352 | 819068 | |

**ALS Group USA, Corp. dba ALS Environmental**

Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | ALS Environmental - US | **Service Request:** | E2300884 |
| **Project:** | HS23091823 | **Date Collected:** | NA |
| **Sample Matrix:** | Water | **Date Received:** | NA |
| **Sample Name:** | Method Blank | **Units:** | µg/L |
| **Lab Code:** | EQ2300472-01 | **Basis:** | NA |

**Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry**

**Analytical Method:** 6850
**Prep Method:** Method

| Analyte Name | Result | Q | LOQ | LOD | MDL | Dilution Factor | Date Extracted | Date Analyzed | Extraction Lot | Analysis Lot | Note |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | ND | U | 0.100 | 0.0500 | 0.0250 | 1 | 9/29/23 | 9/29/23 14:48 | 427352 | 819068 | |

# Accuracy & Precision

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**ALS Group USA, Corp. dba ALS Environmental**

QA/QC Report

**Client:** ALS Environmental - US
**Project:** HS23091823
**Sample Matrix:** Water

**Service Request:** E2300884
**Date Analyzed:** 9/29/23

## Lab Control Sample Summary
## Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

**Analytical Method:** 6850
**Prep Method:** Method

**Units:** µg/L
**Basis:** NA

**Extraction Lot:** 427352

| | Lab Control Sample EQ2300472-02 | | | Duplicate Lab Control Sample EQ2300472-03 | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Analyte Name** | **Result** | **Spike Amount** | **% Rec** | **Result** | **Spike Amount** | **% Rec** | **% Rec Limits** | **RPD** | **RPD Limit** |
| Perchlorate | 0.113 | 0.100 | 113 | 0.0975 | 0.100 | 98 | 84 - 119 | 14 | 15 |

**Results flagged with an asterisk (*) indicate values outside control criteria.**

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

**ALS Group USA, Corp. dba ALS Environmental**

Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | ALS Environmental - US | **Service Request:** | E2300884 |
| **Project:** | HS23091823 | **Date Collected:** | NA |
| **Sample Matrix:** | Water | **Date Received:** | NA |
| **Sample Name:** | Lab Control Sample | **Units:** | µg/L |
| **Lab Code:** | EQ2300472-02 | **Basis:** | NA |

**Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry**

**Analytical Method:** 6850
**Prep Method:** Method

| Analyte Name | Result | Q | LOQ | LOD | MDL | Dilution Factor | Date Extracted | Date Analyzed | Extraction Lot | Analysis Lot | Note |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | **0.113** | | 0.100 | 0.0500 | 0.0250 | 1 | 9/29/23 | 9/29/23 14:54 | 427352 | 819068 | |

**ALS Group USA, Corp. dba ALS Environmental**

Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | ALS Environmental - US | **Service Request:** | E2300884 |
| **Project:** | HS23091823 | **Date Collected:** | NA |
| **Sample Matrix:** | Water | **Date Received:** | NA |
| **Sample Name:** | Duplicate Lab Control Sample | **Units:** | µg/L |
| **Lab Code:** | EQ2300472-03 | **Basis:** | NA |

**Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry**

**Analytical Method:** 6850
**Prep Method:** Method

| Analyte Name | Result | Q | LOQ | LOD | MDL | Dilution Factor | Date Extracted | Date Analyzed | Extraction Lot | Analysis Lot | Note |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | **0.0975** | J | 0.100 | 0.0500 | 0.0250 | 1 | 9/29/23 | 9/29/23 15:00 | 427352 | 819068 | |

# Initial Calibration

**ALS Environmental - Houston HRMS**
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**20230802**

# Injection Log

LCMS01 -Shimadzu 8050

**1st Review: XM**
**2nd Review: KN**

**ICAL Date:** 8/2/2023
**Cal. Std. xp:** 03/07/2024
**ICAL ID:** EC2300012

**Mobile Phases : A:**20mM ammonium acetate in water 230388 **B:**Acetonitrile 229152

| | Sample Name | | File Name | Acquisition Method | Dilution | Comments | Date/Time |
|---|---|---|---|---|---|---|---|
| 1 | IB | | 2230802-001 | Perchlorate6850c.lcm | 1x | | 8/2/2023 13:05 |
| 2 | IB | | 2230802-002 | Perchlorate6850c.lcm | 1x | | 8/2/2023 13:11 |
| 3 | Perchlorate ICAL 1 | | 2230802-003 | Perchlorate6850c.lcm | 1x | 230373 | 8/2/2023 13:17 |
| 4 | Perchlorate ICAL 2 | | 2230802-004 | Perchlorate6850c.lcm | 1x | 230375 | 8/2/2023 13:23 |
| 5 | Perchlorate ICAL 3 | | 2230802-005 | Perchlorate6850c.lcm | 1x | 230376 | 8/2/2023 13:28 |
| 6 | Perchlorate ICAL 4 | | 2230802-006 | Perchlorate6850c.lcm | 1x | 230377 | 8/2/2023 13:34 |
| 7 | Perchlorate ICAL 5 | | 2230802-007 | Perchlorate6850c.lcm | 1x | 230378 | 8/2/2023 13:39 |
| 8 | Perchlorate ICAL 6 | | 2230802-008 | Perchlorate6850c.lcm | 1x | 230379 | 8/2/2023 13:45 |
| 9 | Perchlorate ICAL 7 | | 2230802-009 | Perchlorate6850c.lcm | 1x | 230380 | 8/2/2023 13:50 |
| 10 | Perchlorate ICAL 8 | | 2230802-010 | Perchlorate6850c.lcm | 1x | 230381 | 8/2/2023 13:56 |
| 11 | Perchlorate ICAL 9 | | 2230802-011 | Perchlorate6850c.lcm | 1x | 230382 | 8/2/2023 14:02 |
| 12 | Perchlorate ICAL 10 | | 2230802-012 | Perchlorate6850c.lcm | 1x | 230383 | 8/2/2023 14:07 |
| 13 | PerchlorateICV | | 2230802-013 | Perchlorate6850c.lcm | 1x | 230385 | 8/2/2023 14:19 |

# *Initial Calibration - Detailed Report*

**Calibration ID:** EC2300012 **Instrument ID:** E-LCMS-01
**Column Name:** 1

| # | Lab Code | Sample Name | File Location | Aquisition Date |
|---|---|---|---|---|
| 01 | EC2300012-01 | Perchlorate ICAL 1 | 2230802-003 | 08/02/2023 13:17 |
| 02 | EC2300012-02 | Perchlorate ICAL 2 | 2230802-004 | 08/02/2023 13:23 |
| 03 | EC2300012-03 | Perchlorate ICAL 3 | 2230802-005 | 08/02/2023 13:28 |
| 04 | EC2300012-04 | Perchlorate ICAL 4 | 2230802-006 | 08/02/2023 13:34 |
| 05 | EC2300012-05 | Perchlorate ICAL 5 | 2230802-007 | 08/02/2023 13:39 |
| 06 | EC2300012-06 | Perchlorate ICAL 6 | 2230802-008 | 08/02/2023 13:45 |
| 07 | EC2300012-07 | Perchlorate ICAL 7 | 2230802-009 | 08/02/2023 13:50 |
| 08 | EC2300012-08 | Perchlorate ICAL 8 | 2230802-010 | 08/02/2023 13:56 |
| 09 | EC2300012-09 | Perchlorate ICAL 9 | 2230802-011 | 08/02/2023 14:02 |
| 10 | EC2300012-10 | Perchlorate ICAL 10 | 2230802-012 | 08/02/2023 14:07 |

**Analyte** **Curve Fit** **Weighting**

**Perchlorate** **Average RF** **RSD = 2.086** **Average RF = 0.1475**

| # | Amount | RF | # | Amount | RF | # | Amount | RF | # | Amount | RF |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 01 | 0.1000 | 0.1428 | 02 | 0.5000 | 0.1421 | 03 | 0.7000 | 0.1457 | 04 | 1.0000 | 0.149 |
| 05 | 2.0000 | 0.1515 | 06 | 5.0000 | 0.1475 | 07 | 10.0000 | 0.1503 | 08 | 20.0000 | 0.1477 |
| 09 | 30.0000 | 0.1485 | 10 | 50.0000 | 0.1496 | | | | | | |

**Analyte**

**Perchlorate** RSE = 2.09

| # | Amount | Calculated Conc | %D | # | Amount | Calculated Conc | %D | # | Amount | Calculated Conc | %D |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 01 | 0.1000 | 0.0968 | -3.2 | 02 | 0.5000 | 0.482 | -3.6 | 03 | 0.7000 | 0.692 | -1.2 |
| 04 | 1.0000 | 1.01 | 1.0 | 05 | 2.0000 | 2.05 | 2.7 | 06 | 5.0000 | 5.00 | -0.0 |
| 07 | 10.0000 | 10.2 | 1.9 | 08 | 20.0000 | 20.0 | 0.2 | 09 | 30.0000 | 30.2 | 0.7 |
| 10 | 50.0000 | 50.7 | 1.4 | | | | | | | | |

# *Initial Calibration Verification Summary Report*

| | | | |
|---|---|---|---|
| **Calibration ID:** | EC2300012 | **Instrument ID:** | E-LCMS-01 |
| **Datafile ID:** | 2230802-013 | **Column Name:** | 1 |

| Analyte | Lab Code | Type | Curve Fit | True Value | Calc Conc | Units | Result | Criteria |
|---|---|---|---|---|---|---|---|---|
| Perchlorate | EC2300012-11 | T | Average RF | 10 | 10.670 | ng/mL | 6.7 | <= 15 |

# Insight Report

Printed at 8/3/2023 9:30:46 AM

Method File: I:\LCMS01\DATA\20230802\20230802ICAL.lcm
Project File: I:\LCMS01\DATA\20230802\no use\20230802ICAL.damlp

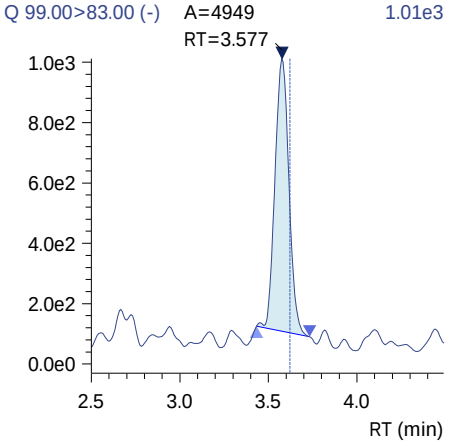
## Perchlorate ICAL 1

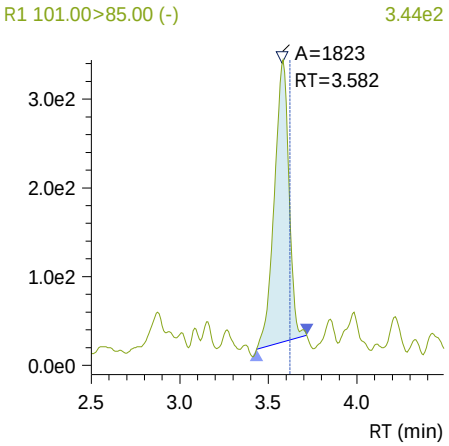
Sample ID: Perchlorate ICAL 1
Date Acquired: 8/2/2023 1:17:39 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230802\2230802-003.lcd
Vial: 1 | Inj. Volume: 10.0000uL | Tray: 1

| Name | Mode ID | Found RT | Area | ISTD Area | Conc. | Unit | Ref 1 m/z | Ref 1 Actual Ratio | Comment 1 |
|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | Auto | 3.577 | 4949 | 346538 | 0.0968 | ng/mL | 101.00 >85.00 | 36.83 | 21.29-39.54 |
| Sodium Perchlorate-18O4 _IS | Auto | 3.572 | 346538 | 346538 | 1.0000 | ng/mL | ---- | ---- | |

### Perchlorate

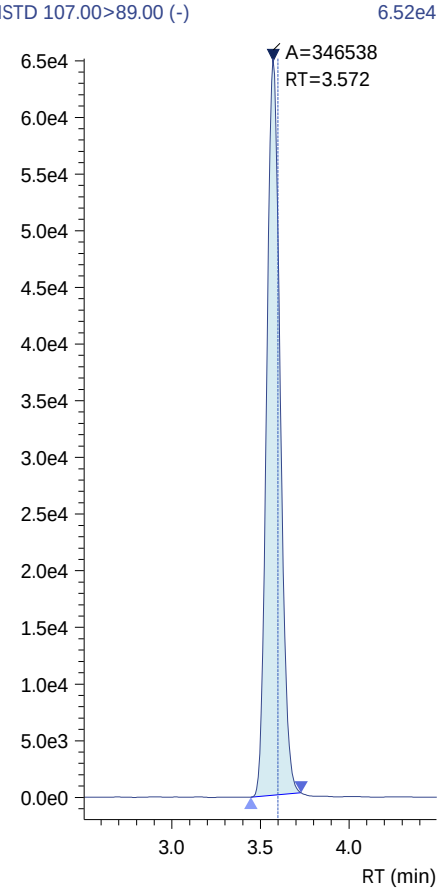
Conc 0.0968
R#1 36.83 (30.41)




### Sodium Perchlorate-18O4_IS

Conc 1.0000



# Insight Report

Printed at 8/3/2023 9:30:46 AM

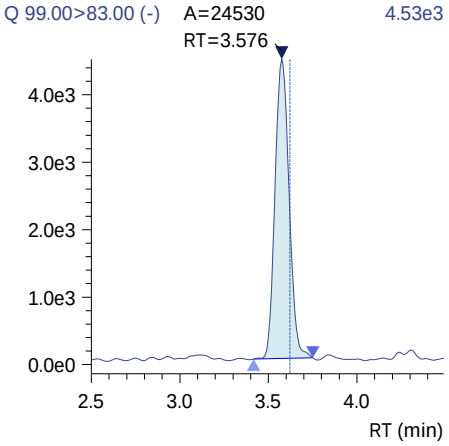
## Perchlorate ICAL 2

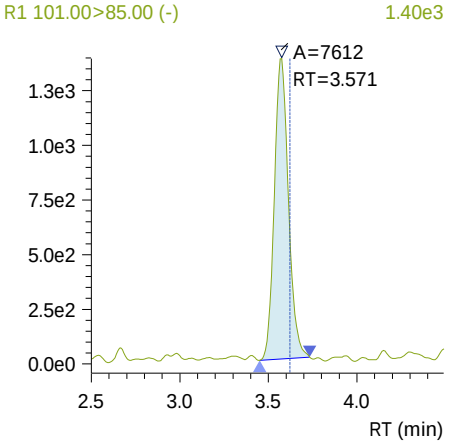
Sample ID: Perchlorate ICAL 2
Date Acquired: 8/2/2023 1:23:13 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230802\2230802-004.lcd
Vial: 2 | Inj. Volume: 10.0000uL | Tray: 1

| Name | Mode ID | Found RT | Area | ISTD Area | Conc. | Unit | Ref 1 m/z | Ref 1 Actual Ratio | Comment 1 |
|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | Auto | 3.576 | 24530 | 345149 | 0.4820 | ng/mL | 101.00 >85.00 | 31.03 | 21.29-39.54 |
| Sodium Perchlorate-18O4 _IS | Auto | 3.571 | 345149 | 345149 | 1.0000 | ng/mL | ---- | ---- | |

### Perchlorate

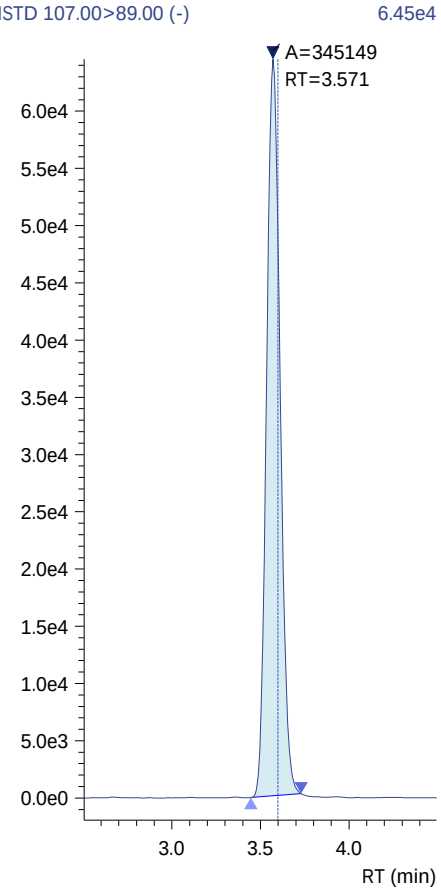
Conc 0.4820
R#1 31.03 (30.41)




### Sodium Perchlorate-18O4_IS

Conc 1.0000



# Insight Report



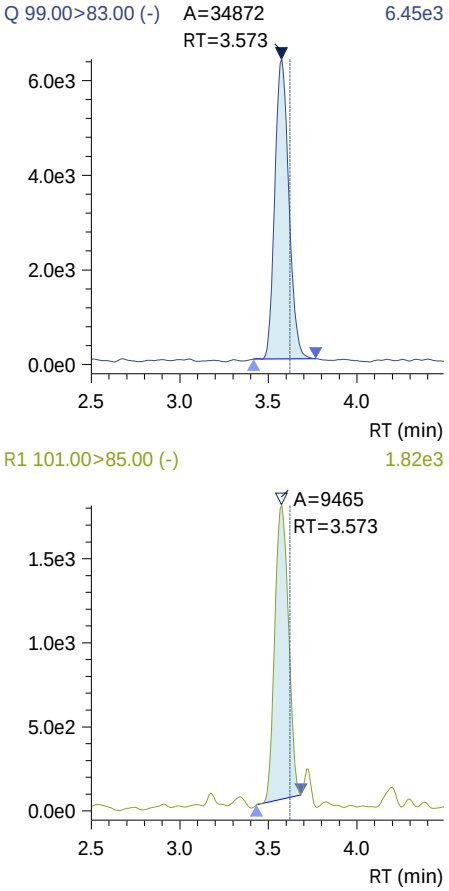
## Perchlorate ICAL 3

Sample ID: Perchlorate ICAL 3
Date Acquired: 8/2/2023 1:28:44 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230802\2230802-005.lcd
Vial: 3 | Inj. Volume: 10.0000uL | Tray: 1

| Name | Mode ID | Found RT | Area | ISTD Area | Conc. | Unit | Ref 1 m/z | Ref 1 Actual Ratio | Comment 1 |
|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | Auto | 3.573 | 34872 | 341974 | 0.6915 | ng/mL | 101.00 >85.00 | 27.14 | 21.29-39.54 |
| Sodium Perchlorate-18O4 _IS | Auto | 3.570 | 341974 | 341974 | 1.0000 | ng/mL | ---- | ---- | |

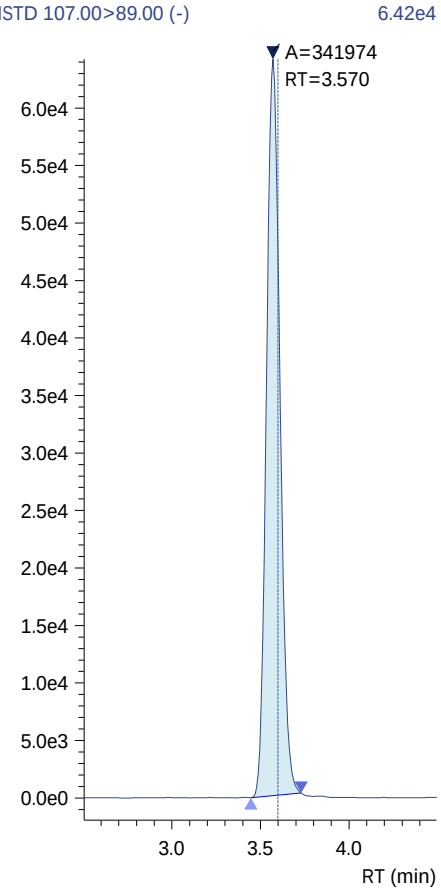
### Perchlorate

Conc 0.6915
R#1 27.14 (30.41)




### Sodium Perchlorate-18O4_IS

Conc 1.0000



# Insight Report

Printed at 8/3/2023 9:30:46 AM

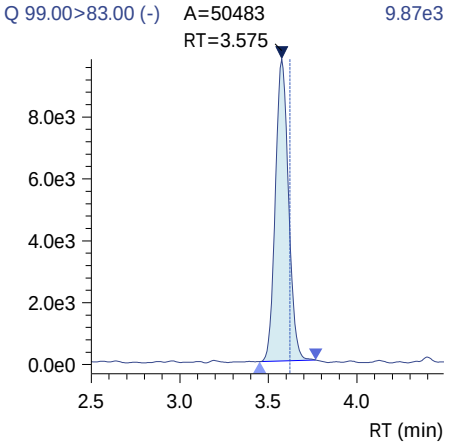
## Perchlorate ICAL 4

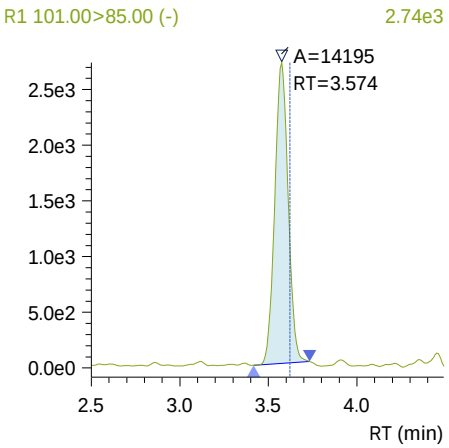
Sample ID: Perchlorate ICAL 4
Date Acquired: 8/2/2023 1:34:20 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230802\2230802-006.lcd
Vial: 4 | Inj. Volume: 10.0000uL | Tray: 1

| Name | Mode ID | Found RT | Area | ISTD Area | Conc. | Unit | Ref 1 m/z | Ref 1 Actual Ratio | Comment 1 |
|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | Auto | 3.575 | 50483 | 338838 | 1.0104 | ng/mL | 101.00 >85.00 | 28.12 | 21.29-39.54 |
| Sodium Perchlorate-18O4 _IS | Auto | 3.570 | 338838 | 338838 | 1.0000 | ng/mL | ---- | ---- | |

### Perchlorate

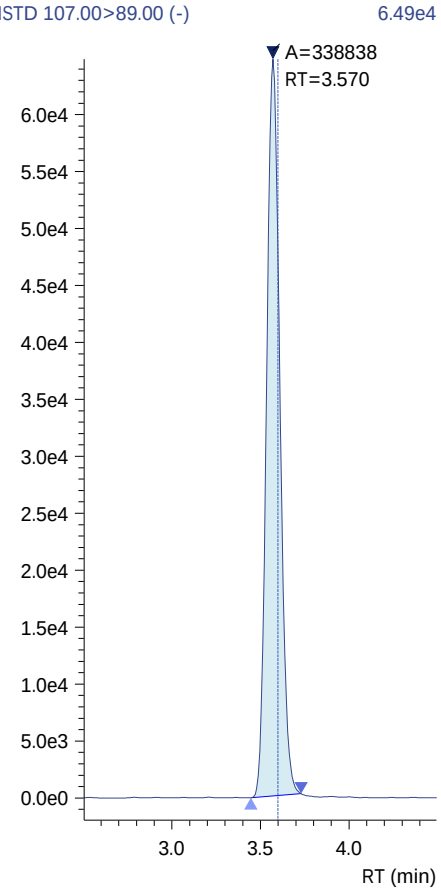
Conc 1.0104
R#1 28.12 (30.41)




### Sodium Perchlorate-18O4_IS

Conc 1.0000



# Insight Report

Printed at 8/3/2023 9:30:46 AM

## Perchlorate ICAL 5

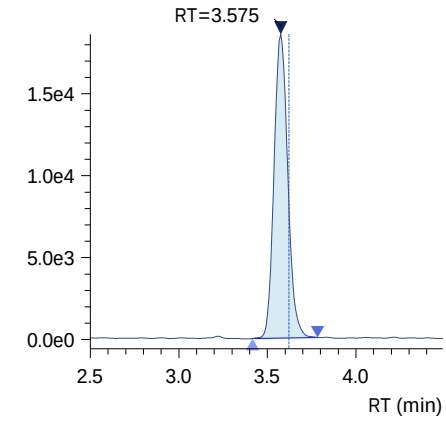
Sample ID: Perchlorate ICAL 5
Date Acquired: 8/2/2023 1:39:51 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230802\2230802-007.lcd
Vial: 5 | Inj. Volume: 10.0000uL | Tray: 1

| Name | Mode ID | Found RT | Area | ISTD Area | Conc. | Unit | Ref 1 m/z | Ref 1 Actual Ratio | Comment 1 |
|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | Auto | 3.575 | 100319 | 331124 | 2.0545 | ng/mL | 101.00 >85.00 | 27.89 | 21.29-39.54 |
| Sodium Perchlorate-18O4 _IS | Auto | 3.570 | 331124 | 331124 | 1.0000 | ng/mL | ---- | ---- | |

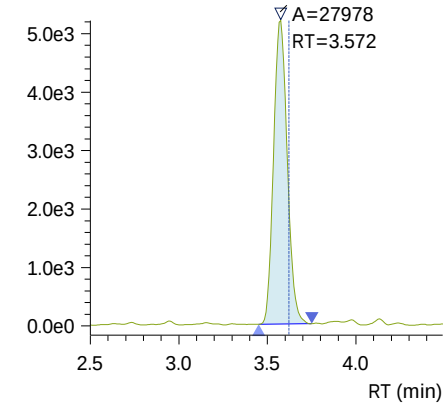
### Perchlorate

Conc 2.0545
R#1 27.89 (30.41)

Q 99.00>83.00 (-) A=100319 1.86e4



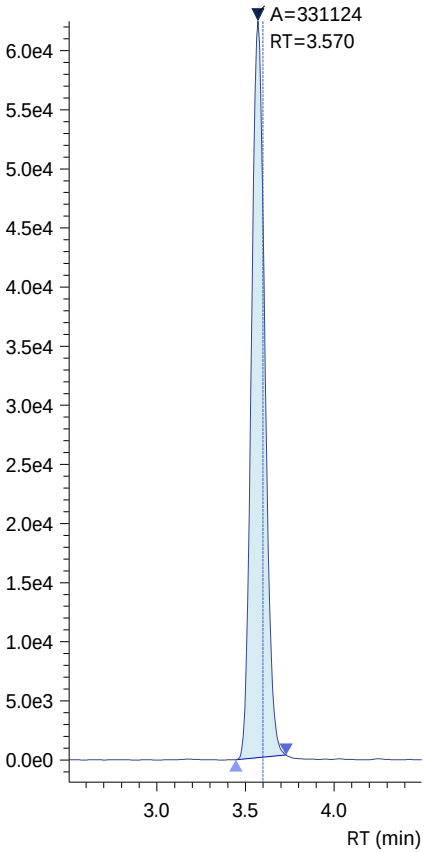

R1 101.00>85.00 (-) 5.22e3




### Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 6.25e4



# Insight Report

Printed at 8/3/2023 9:30:46 AM

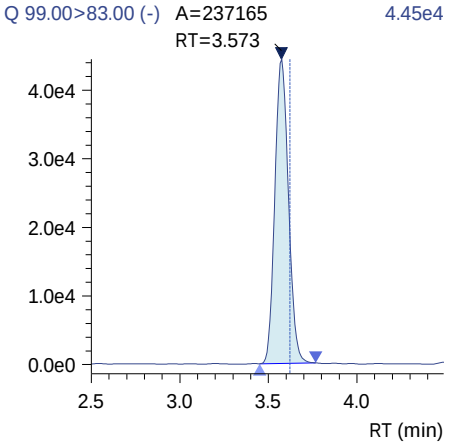
## Perchlorate ICAL 6

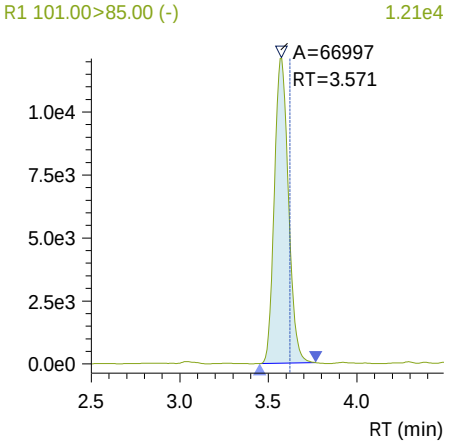
Sample ID: Perchlorate ICAL 6
Date Acquired: 8/2/2023 1:45:24 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230802\2230802-008.lcd
Vial: 6 | Inj. Volume: 10.0000uL | Tray: 1

| Name | Mode ID | Found RT | Area | ISTD Area | Conc. | Unit | Ref 1 m/z | Ref 1 Actual Ratio | Comment 1 |
|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | Auto | 3.573 | 237165 | 321666 | 5.0000 | ng/mL | 101.00 >85.00 | 28.25 | 21.29-39.54 |
| Sodium Perchlorate-18O4 _IS | Auto | 3.570 | 321666 | 321666 | 1.0000 | ng/mL | ---- | ---- | |

### Perchlorate

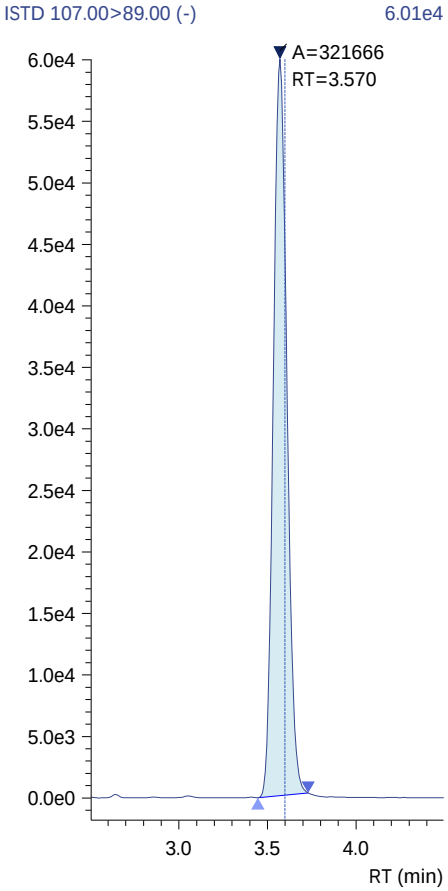
Conc 5.0000
R#1 28.25 (30.41)




### Sodium Perchlorate-18O4_IS

Conc 1.0000



# Insight Report

Printed at 8/3/2023 9:30:46 AM

## Perchlorate ICAL 7

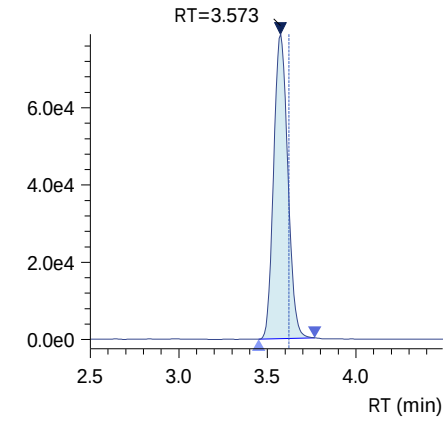
Sample ID: Perchlorate ICAL 7
Date Acquired: 8/2/2023 1:50:57 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230802\2230802-009.lcd
Vial: 7 | Inj. Volume: 10.0000uL | Tray: 1

| Name | Mode ID | Found RT | Area | ISTD Area | Conc. | Unit | Ref 1 m/z | Ref 1 Actual Ratio | Comment 1 |
|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | Auto | 3.573 | 437614 | 291215 | 10.1905 | ng/mL | 101.00 >85.00 | 28.36 | 21.29-39.54 |
| Sodium Perchlorate-18O4_IS | Auto | 3.570 | 291215 | 291215 | 1.0000 | ng/mL | ---- | ---- | |

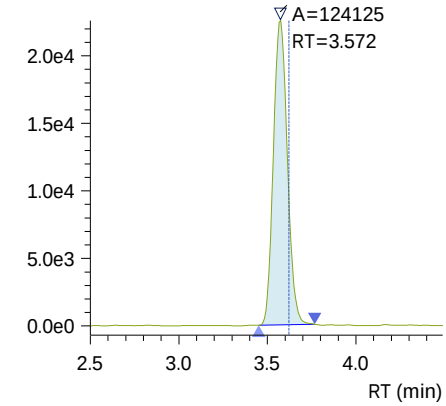
### Perchlorate

Conc 10.1905
R#1 28.36 (30.41)

Q 99.00>83.00 (-) A=437614 7.90e4



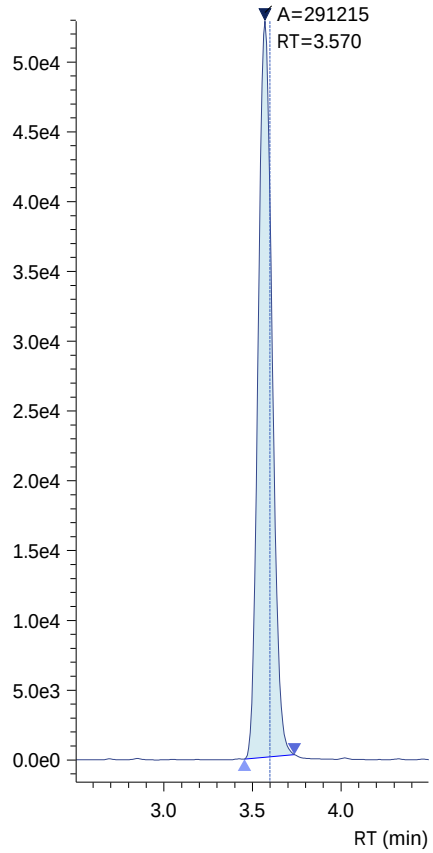

R1 101.00>85.00 (-) 2.26e4




### Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 5.29e4



# Insight Report

Printed at 8/3/2023 9:30:46 AM

## Perchlorate ICAL 8

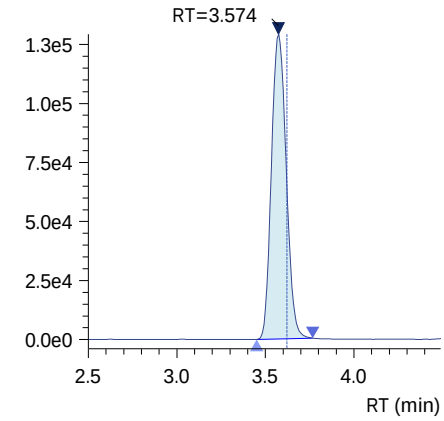
Sample ID: Perchlorate ICAL 8
Date Acquired: 8/2/2023 1:56:33 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230802\2230802-010.lcd
Vial: 8 | Inj. Volume: 10.0000uL | Tray: 1

| Name | Mode ID | Found RT | Area | ISTD Area | Conc. | Unit | Ref 1 m/z | Ref 1 Actual Ratio | Comment 1 |
|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | Auto | 3.574 | 749856 | 253829 | 20.03 36 | ng/mL | 101.00 >85.00 | 28.56 | 21.29-39.54 |
| Sodium Perchlorate-18O4 _IS | Auto | 3.569 | 253829 | 253829 | 1.0000 | ng/mL | ---- | ---- | |

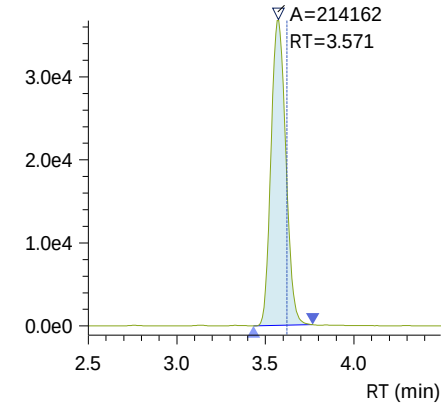
### Perchlorate

Conc 20.0336
R#1 28.56 (30.41)

Q 99.00>83.00 (-) A=749856 1.29e5



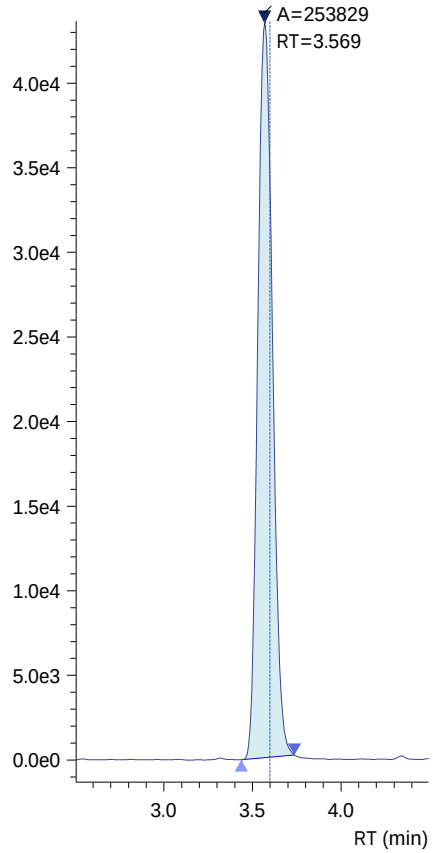

R1 101.00>85.00 (-) 3.68e4




### Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 4.37e4



# Insight Report

Printed at 8/3/2023 9:30:46 AM

## Perchlorate ICAL 9

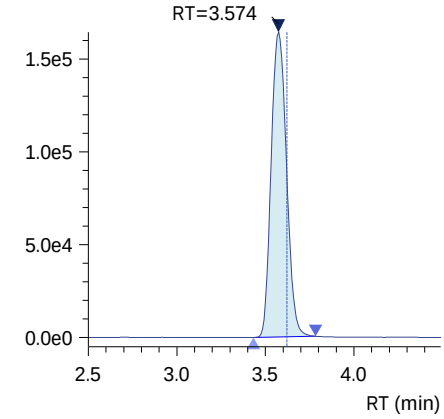
Sample ID: Perchlorate ICAL 9
Date Acquired: 8/2/2023 2:02:07 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230802\2230802-011.lcd
Vial: 9 | Inj. Volume: 10.0000uL | Tray: 1

| Name | Mode ID | Found RT | Area | ISTD Area | Conc. | Unit | Ref 1 m/z | Ref 1 Actual Ratio | Comment 1 |
|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | Auto | 3.574 | 990671 | 222379 | 30.2105 | ng/mL | 101.00 >85.00 | 27.95 | 21.29-39.54 |
| Sodium Perchlorate-18O4_IS | Auto | 3.568 | 222379 | 222379 | 1.0000 | ng/mL | ---- | ---- | |

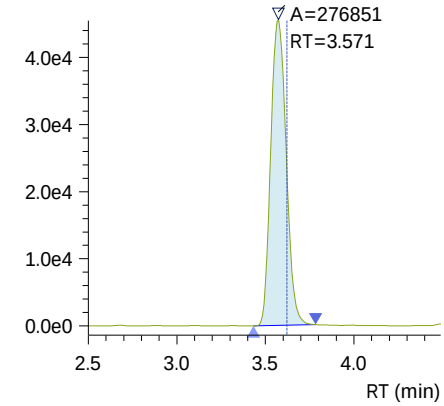
### Perchlorate

Conc 30.2105
R#1 27.95 (30.41)

Q 99.00>83.00 (-) A=990671 1.64e5



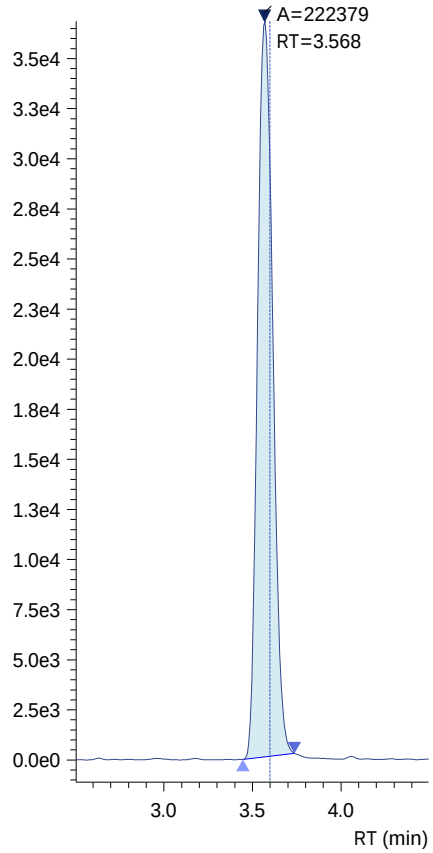

R1 101.00>85.00 (-) 4.55e4




### Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 3.69e4



# Insight Report

Printed at 8/3/2023 9:30:46 AM

## Perchlorate ICAL 10

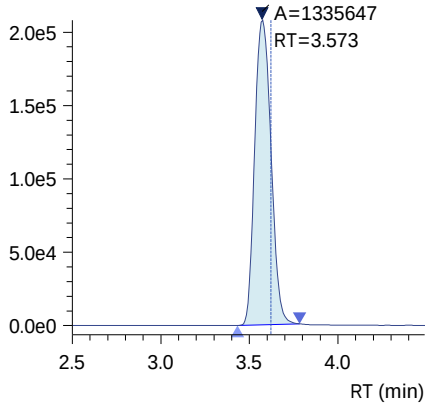
Sample ID: Perchlorate ICAL 10
Date Acquired: 8/2/2023 2:07:39 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230802\2230802-012.lcd
Vial: 10 | Inj. Volume: 10.0000uL | Tray: 1

| Name | Mode ID | Found RT | Area | ISTD Area | Conc. | Unit | Ref 1 m/z | Ref 1 Actual Ratio | Comment 1 |
|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | Auto | 3.573 | 1335647 | 178573 | 50.72<br>20 | ng/mL | 101.00<br>>85.00 | 28.04 | 21.29-39.54 |
| Sodium Perchlorate-18O4_IS | Auto | 3.567 | 178573 | 178573 | 1.0000 | ng/mL | ---- | ---- | |

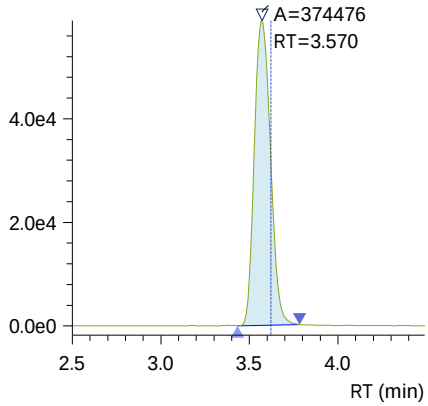
### Perchlorate

Conc 50.7220
R#1 28.04 (30.41)

Q 99.00>83.00 (-) 2.08e5



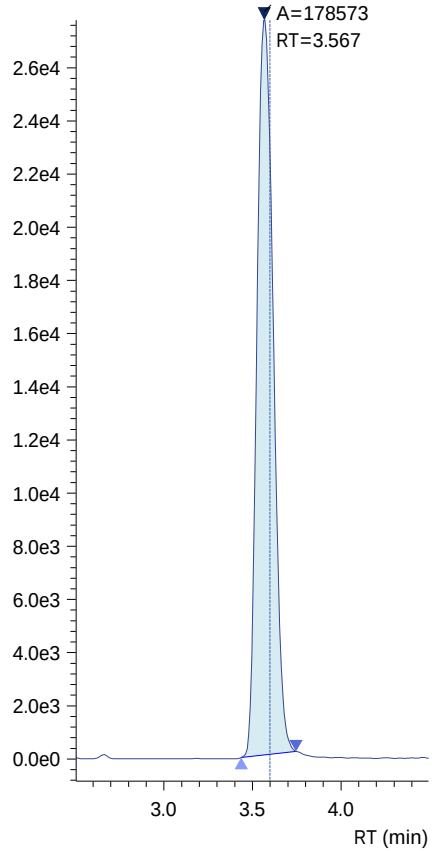

R1 101.00>85.00 (-) 5.90e4




### Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 2.78e4



# Insight Report

Printed at 8/3/2023 9:30:46 AM

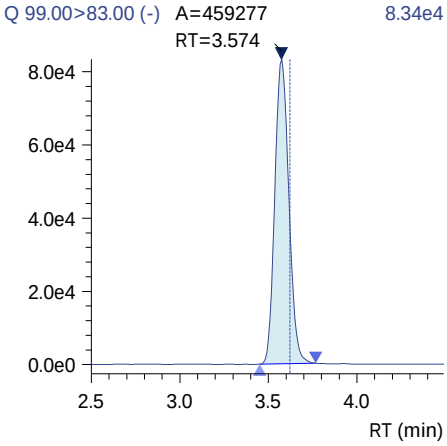
## PerchlorateICV

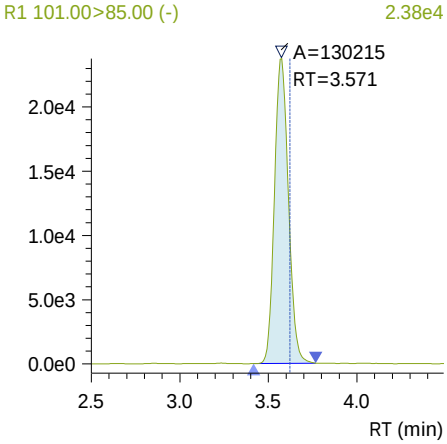
Sample ID: PerchlorateICV
Date Acquired: 8/2/2023 2:19:46 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230802\2230802-013.lcd
Vial: 11 | Inj. Volume: 10.0000uL | Tray: 1

| Name | Mode ID | Found RT | Area | ISTD Area | Conc. | Unit | Ref 1 m/z | Ref 1 Actual Ratio | Comment 1 |
|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | Auto | 3.574 | 459277 | 291890 | 10.6703 | ng/mL | 101.00 >85.00 | 28.35 | 21.29-39.54 |
| Sodium Perchlorate-18O4_IS | Auto | 3.570 | 291890 | 291890 | 1.0000 | ng/mL | ---- | ---- | |

### Perchlorate

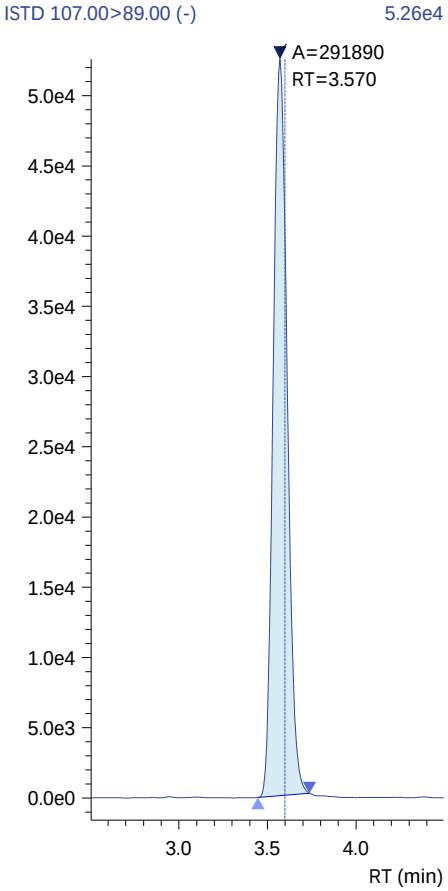
Conc 10.6703
R#1 28.35 (30.41)




### Sodium Perchlorate-18O4_IS

Conc 1.0000



# Chromatograms and Selected Ion Monitoring

**ALS Environmental - Houston HRMS**
10450 Stancliff Rd., Suite 320, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

**20230929-819068**

# Injection Log

LCMS01 -Shimadzu 8050

**1st Review: XM**
**2nd Review: KN**

**ICAL Date:** 8/2/2023
**Cal. Std. xp:** 02/02/2024
**ICAL ID:** EC2300012

**Mobile Phases : A:**20mM ammonium acetate in water 231240 **B:**Acetonitrile 229152

| | Sample Name | | File Name | Acquisition Method | Dilution | Comments | Date/Time |
|---|---|---|---|---|---|---|---|
| 1 | IB | | 20230929-001 | Perchlorate6850c.lcm | 1x | | 9/29/2023 13:58 |
| 2 | LODV | | 20230929-002 | Perchlorate6850c.lcm | 1x | 230386 | 9/29/2023 14:13 |
| 3 | ICS | | 20230929-003 | Perchlorate6850c.lcm | 1x | 32103051 | 9/29/2023 14:33 |
| 4 | CCV | | 20230929-004 | Perchlorate6850c.lcm | 1x | 230380 | 9/29/2023 14:39 |
| 5 | EQ2300472-01 | | 20230929-005 | Perchlorate6850c.lcm | 1x | | 9/29/2023 14:48 |
| 6 | EQ2300472-02 | | 20230929-006 | Perchlorate6850c.lcm | 1x | | 9/29/2023 14:54 |
| 7 | EQ2300472-03 | | 20230929-007 | Perchlorate6850c.lcm | 1x | | 9/29/2023 15:00 |
| 8 | E2300884-001 | | 20230929-008 | Perchlorate6850c.lcm | 1x | | 9/29/2023 15:06 |
| 9 | E2300884-002 | | 20230929-009 | Perchlorate6850c.lcm | 1x | | 9/29/2023 15:11 |
| 10 | K2310740-001 | | 20230929-010 | Perchlorate6850c.lcm | 1x | | 9/29/2023 15:17 |
| 11 | K2310740-002 | | 20230929-011 | Perchlorate6850c.lcm | 1x | | 9/29/2023 15:22 |
| 12 | K2310740-003 | | 20230929-012 | Perchlorate6850c.lcm | 1x | | 9/29/2023 15:28 |
| 13 | R2308735-004 | | 20230929-013 | Perchlorate6850c.lcm | 1x | | 9/29/2023 15:33 |
| 14 | R2308735-008 | | 20230929-014 | Perchlorate6850c.lcm | 1x | | 9/29/2023 15:39 |
| 15 | CCV | | 20230929-015 | Perchlorate6850c.lcm | 1x | 230380 | 9/29/2023 15:44 |
| 16 | R2308735-013 | | 20230929-016 | Perchlorate6850c.lcm | 1x | | 9/29/2023 15:50 |
| 17 | R2308735-018 | | 20230929-017 | Perchlorate6850c.lcm | 1x | | 9/29/2023 15:55 |
| 18 | R2308811-001 | | 20230929-018 | Perchlorate6850c.lcm | 1x | | 9/29/2023 16:01 |
| 19 | R2308811-002 | | 20230929-019 | Perchlorate6850c.lcm | 1x | | 9/29/2023 16:07 |
| 20 | R2308811-006 | | 20230929-020 | Perchlorate6850c.lcm | 1x | | 9/29/2023 16:12 |
| 21 | R2308811-008 | | 20230929-021 | Perchlorate6850c.lcm | 1x | | 9/29/2023 16:18 |
| 22 | R2308811-009 | | 20230929-022 | Perchlorate6850c.lcm | 1x | | 9/29/2023 16:23 |
| 23 | CCV | | 20230929-023 | Perchlorate6850c.lcm | 1x | 230380 | 9/29/2023 16:29 |

**ALS Group USA, Corp. dba ALS Environmental**

QA/QC Report

| | | | |
|---|---|---|---|
| **Client:** | ALS Environmental - US | **Service Request:** | E2300884 |
| **Project:** | HS23091823 | **Date Analyzed:** | 9/29/23 14:39 |

**Internal Standard Area and RT Summary**

**Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry**

| | | | |
|---|---|---|---|
| **File ID:** | I:\LCMS01\DATA\20230929\20230929-004 | **Lab Code:** | EQ2300473-01 |
| **Instrument ID:** | E-LCMS-01 | **Analysis Lot:** | 819068 |
| **Analytical Method:** | 6850 | **Signal ID:** | 1 |

| | | Sodium Perchlorate-18O4 | |
|---|---|---|---|
| | | **Area** | **RT** |
| | **ICAL Average ==>** | 297,129 | 3.57 |
| | **Upper Limit ==>** | 445,694 | 5.57 |
| | **Lower Limit ==>** | 148,565 | 1.57 |
| ***Associated Analyses*** | | | |
| Continuing Calibration Verification | EQ2300473-01 | 264,004 | 3.56 |
| Method Blank | EQ2300472-01 | 291,071 | 3.55 |
| Lab Control Sample | EQ2300472-02 | 269,387 | 3.55 |
| Duplicate Lab Control Sample | EQ2300472-03 | 264,117 | 3.55 |
| LH18/24-SP650_092823_BIX | E2300884-001 | 380,929 | 3.56 |
| LH18/24-SP650_092823_AIX | E2300884-002 | 388,688 | 3.56 |

**Results flagged with an asterisk (*) indicate values outside control criteria.**

**ALS Group USA, Corp. dba ALS Environmental**

QA/QC Report

| | | | |
|---|---|---|---|
| **Client:** | ALS Environmental - US | **Service Request:** | E2300884 |
| **Project:** | HS23091823 | **Date Analyzed:** | 9/29/23 15:44 |

**Internal Standard Area and RT Summary**

**Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry**

| | | | |
|---|---|---|---|
| **File ID:** | I:\LCMS01\DATA\20230929\20230929-015 | **Lab Code:** | EQ2300473-02 |
| **Instrument ID:** | E-LCMS-01 | **Analysis Lot:** | 819068 |
| **Analytical Method:** | 6850 | **Signal ID:** | 1 |

| | | Sodium Perchlorate-18O4 | |
|---|---|---|---|
| | | **Area** | **RT** |
| | **ICAL Average ==>** | 297,129 | 3.57 |
| | **Upper Limit ==>** | 445,694 | 5.57 |
| | **Lower Limit ==>** | 148,565 | 1.57 |
| ***Associated Analyses*** | | | |
| Continuing Calibration Verification | EQ2300473-02 | 323,569 | 3.56 |

**Results flagged with an asterisk (*) indicate values outside control criteria.**

**ALS Group USA, Corp. dba ALS Environmental**

QA/QC Report

| | | | |
|---|---|---|---|
| **Client:** | ALS Environmental - US | **Service Request:** | E2300884 |
| **Project:** | HS23091823 | **Date Analyzed:** | 9/29/23 16:29 |

**Internal Standard Area and RT Summary**

**Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry**

| | | | |
|---|---|---|---|
| **File ID:** | I:\LCMS01\DATA\20230929\20230929-023 | **Lab Code:** | EQ2300473-03 |
| **Instrument ID:** | E-LCMS-01 | **Analysis Lot:** | 819068 |
| **Analytical Method:** | 6850 | **Signal ID:** | 1 |

| | | Sodium Perchlorate-18O4 | |
|---|---|---|---|
| | | **Area** | **RT** |
| | **ICAL Average ==>** | 297,129 | 3.57 |
| | **Upper Limit ==>** | 445,694 | 5.57 |
| | **Lower Limit ==>** | 148,565 | 1.57 |
| ***Associated Analyses*** | | | |
| Continuing Calibration Verification | EQ2300473-03 | 321,621 | 3.56 |

**Results flagged with an asterisk (*) indicate values outside control criteria.**

**ALS Group USA, Corp. dba ALS Environmental**

QA/QC Report

**Client:** ALS Environmental - US
**Project:** HS23091823

**Service Request:** E2300884
**Date Analyzed:** 9/29/23

## Continuing Calibration Verification Summary
## Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

**Analytical Method:** 6850
**File ID:** I:\LCMS01\DATA\20230929\20230929-004

**Calibration Date:** 8/2/23
**Calibration ID:** EC2300012
**Analysis Lot:** 819068
**Units:** ng/mL

| Analyte Name | Expected | Result | Average RF | CCV RF | %D | %Drift | Criteria | Curve Fit |
|---|---|---|---|---|---|---|---|---|
| Perchlorate | 10.0 | 9.48 | 0.1475 | 0.1398 | -5.2 | NA | ± 15 % | Average RF |

**ALS Group USA, Corp. dba ALS Environmental**

QA/QC Report

**Client:** ALS Environmental - US
**Project:** HS23091823

**Service Request:** E2300884
**Date Analyzed:** 9/29/23

## Continuing Calibration Verification Summary
## Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

**Analytical Method:** 6850
**File ID:** I:\LCMS01\DATA\20230929\20230929-015

**Calibration Date:** 8/2/23
**Calibration ID:** EC2300012
**Analysis Lot:** 819068
**Units:** ng/mL

| Analyte Name | Expected | Result | Average RF | CCV RF | %D | %Drift | Criteria | Curve Fit |
|---|---|---|---|---|---|---|---|---|
| Perchlorate | 10.0 | 9.95 | 0.1475 | 0.1467 | -0.5 | NA | ± 15 % | Average RF |

**ALS Group USA, Corp. dba ALS Environmental**

QA/QC Report

**Client:** ALS Environmental - US
**Project:** HS23091823

**Service Request:** E2300884
**Date Analyzed:** 9/29/23

## Continuing Calibration Verification Summary
## Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

**Analytical Method:** 6850
**File ID:** I:\LCMS01\DATA\20230929\20230929-023

**Calibration Date:** 8/2/23
**Calibration ID:** EC2300012
**Analysis Lot:** 819068
**Units:** ng/mL

| Analyte Name | Expected | Result | Average RF | CCV RF | %D | %Drift | Criteria | Curve Fit |
|---|---|---|---|---|---|---|---|---|
| Perchlorate | 10.0 | 9.77 | 0.1475 | 0.1440 | -2.3 | NA | ± 15 % | Average RF |

# Insight Report

Printed at 10/2/2023 8:56:18 AM

Method File: I:\LCMS01\DATA\20230929\20230929.lcm
Project File: I:\LCMS01\DATA\20230929\20230929.damlp

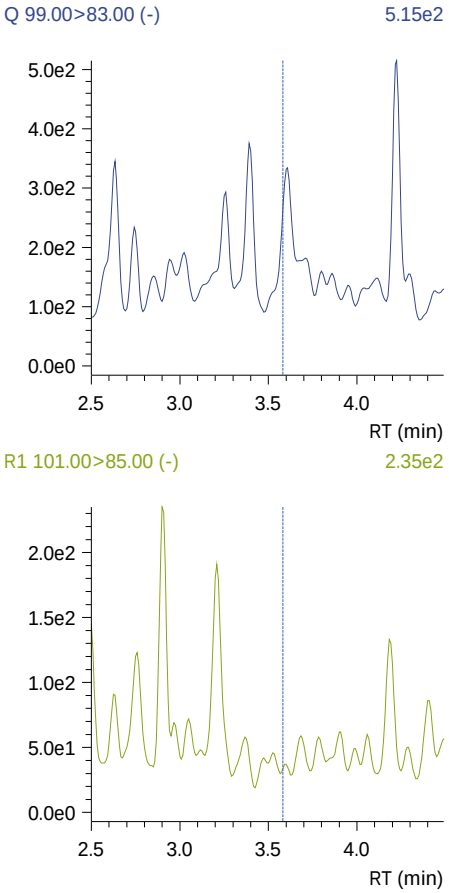
## IB

Sample ID: IB
Date Acquired: 9/29/2023 1:58:40 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230929\20230929-001.lcd
Vial: 4 | Inj. Volume: 10.0000uL | Tray: 0

| Name | Mode ID | Found RT | Area | ISTD Area | Conc. | Unit | Ref 1 m/z | Ref 1 Actual Ratio | Comment 1 |
|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | ND(W/B) | ---- | ---- | 283276 | ---- | ng/mL | 101.00 >85.00 | 0.00 | 19.48-36.18 |
| Sodium Perchlorate-18O4_IS | Auto | 3.482 | 283276 | 283276 | 1.0000 | ng/mL | ---- | ---- | |

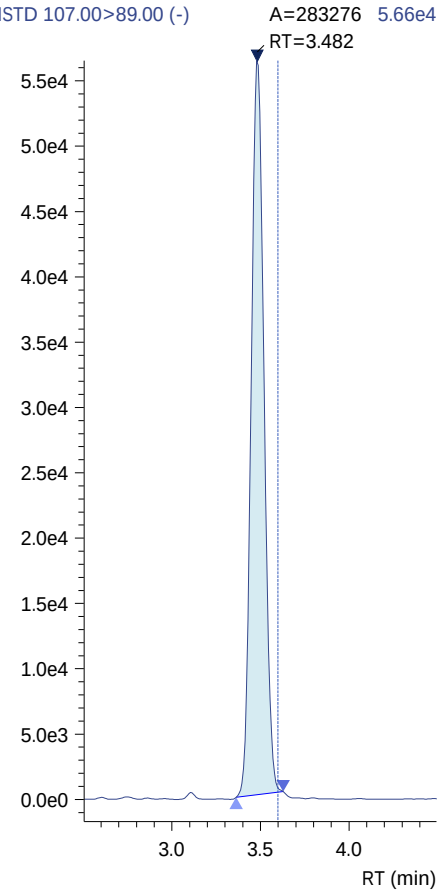
### Perchlorate

Conc ----
R#1 0.00 (27.83)




### Sodium Perchlorate-18O4_IS

Conc 1.0000



# Insight Report

Printed at 10/2/2023 8:56:18 AM

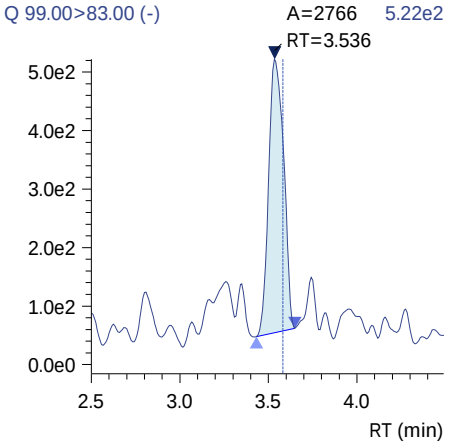
## LODV

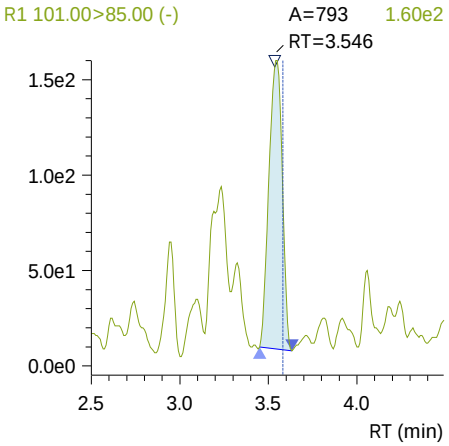
Sample ID: LODV
Date Acquired: 9/29/2023 2:13:16 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230929\20230929-002.lcd
Vial: 12 | Inj. Volume: 10.0000uL | Tray: 1

| Name | Mode ID | Found RT | Area | ISTD Area | Conc. | Unit | Ref 1 m/z | Ref 1 Actual Ratio | Comment 1 |
|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | Auto | 3.536 | 2766 | 343593 | 0.0546 | ng/mL | 101.00 >85.00 | 28.67 | 19.48-36.18 |
| Sodium Perchlorate-18O4 _IS | Auto | 3.535 | 3435 93 | 343593 | 1.0000 | ng/mL | ---- | ---- | |

### Perchlorate

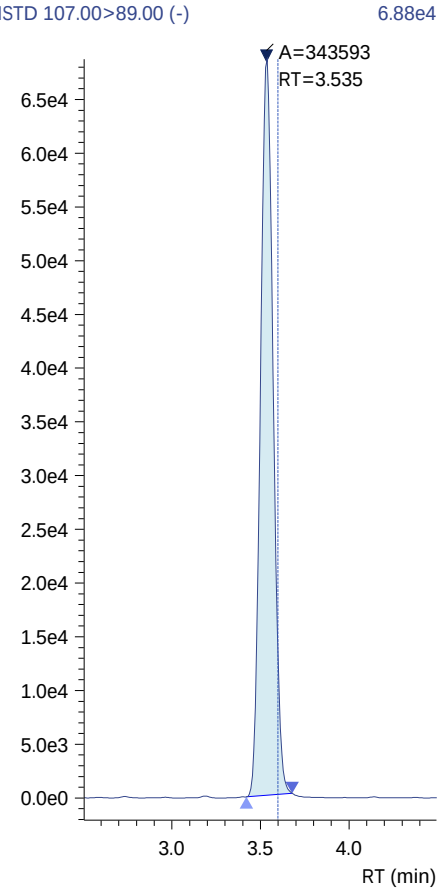
Conc 0.0546
R#1 28.67 (27.83)




### Sodium Perchlorate-18O4_IS

Conc 1.0000



# Insight Report

Printed at 10/2/2023 8:56:18 AM

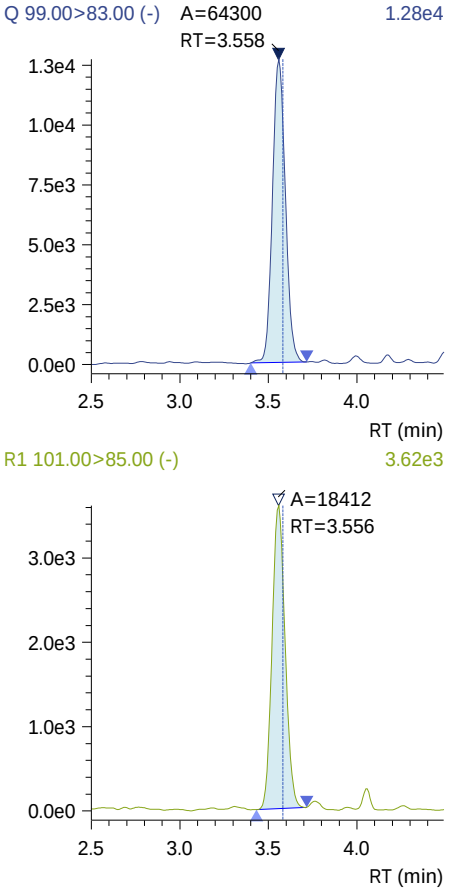
## ICS

Sample ID: ICS
Date Acquired: 9/29/2023 2:33:11 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230929\20230929-003.lcd
Vial: 2 | Inj. Volume: 10.0000uL | Tray: 0

| Name | Mode ID | Found RT | Area | ISTD Area | Conc. | Unit | Ref 1 m/z | Ref 1 Actual Ratio | Comment 1 |
|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | Auto | 3.558 | 64300 | 418298 | 1.0424 | ng/mL | 101.00 >85.00 | 28.63 | 19.48-36.18 |
| Sodium Perchlorate-18O4 _IS | Auto | 3.555 | 4182 98 | 418298 | 1.0000 | ng/mL | ---- | ---- | |

### Perchlorate

Conc 1.0424
R#1 28.63 (27.83)

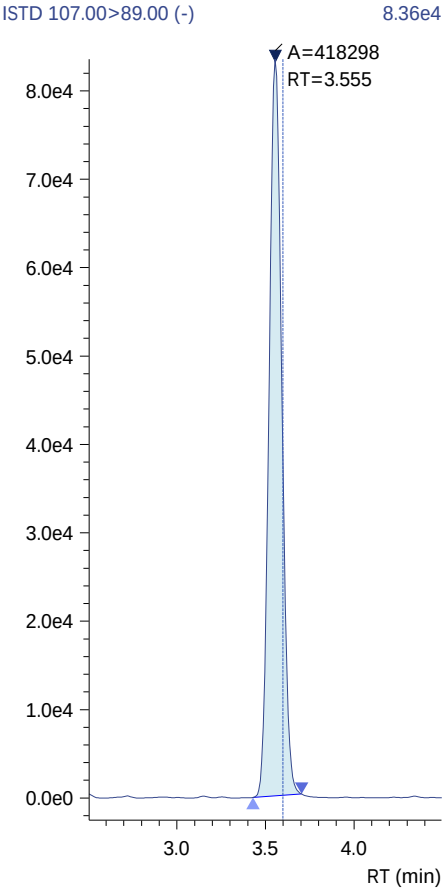






### Sodium Perchlorate-18O4_IS

Conc 1.0000



# Insight Report

Printed at 10/2/2023 8:56:18 AM

## CCV

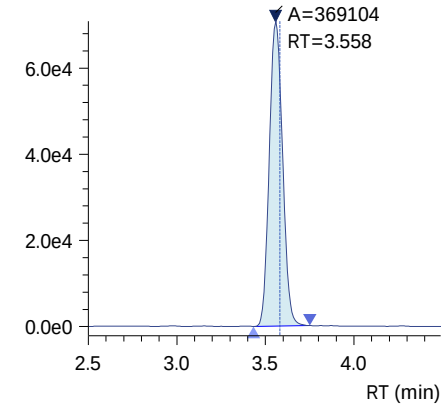
Sample ID: CCV
Date Acquired: 9/29/2023 2:39:26 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230929\20230929-004.lcd
Vial: 7 | Inj. Volume: 10.0000uL | Tray: 1

| Name | Mode ID | Found RT | Area | ISTD Area | Conc. | Unit | Ref 1 m/z | Ref 1 Actual Ratio | Comment 1 |
|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | Auto | 3.558 | 369104 | 264004 | 9.4811 | ng/mL | 101.00 >85.00 | 29.03 | 19.48-36.18 |
| Sodium Perchlorate-18O4_IS | Auto | 3.555 | 264004 | 264004 | 1.0000 | ng/mL | ---- | ---- | |

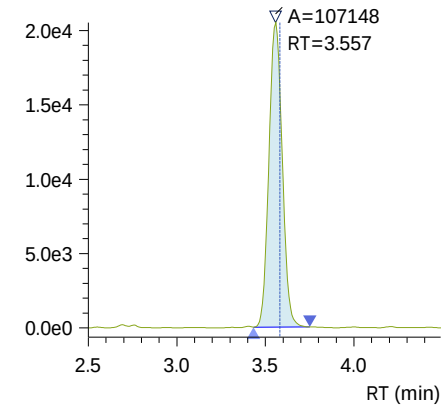
### Perchlorate

Conc 9.4811
R#1 29.03 (27.83)

Q 99.00>83.00 (-) 7.09e4



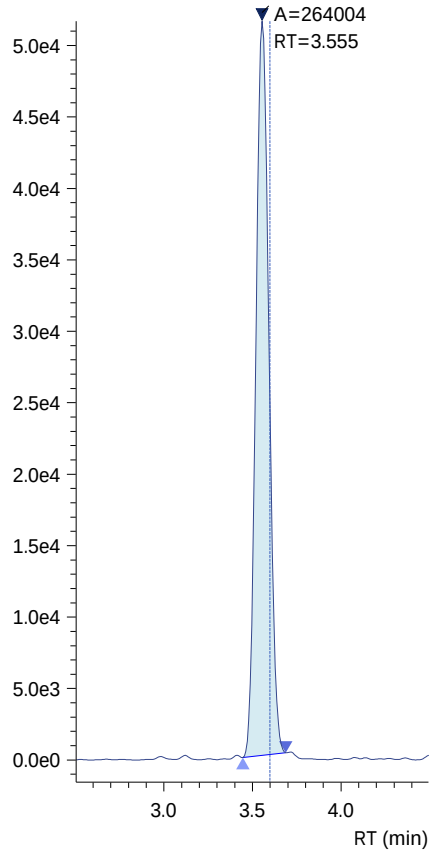

R1 101.00>85.00 (-) 2.05e4




### Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 5.17e4



# Insight Report

Printed at 10/2/2023 8:56:18 AM

## EQ2300472-01

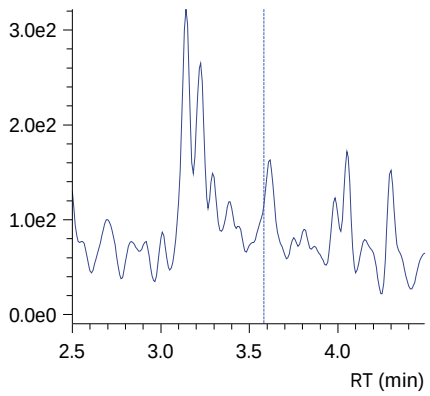
Sample ID: EQ2300472-01
Date Acquired: 9/29/2023 2:48:59 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230929\20230929-005.lcd
Vial: 1 | Inj. Volume: 10.0000uL | Tray: 5

| Name | Mode ID | Found RT | Area | ISTD Area | Conc. | Unit | Ref 1 m/z | Ref 1 Actual Ratio | Comment 1 |
|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | ND(W/B) | ---- | ---- | 291071 | ---- | ng/mL | 101.00 >85.00 | 0.00 | 19.48-36.18 |
| Sodium Perchlorate-18O4_IS | Auto | 3.553 | 291071 | 291071 | 1.0000 | ng/mL | ---- | ---- | |

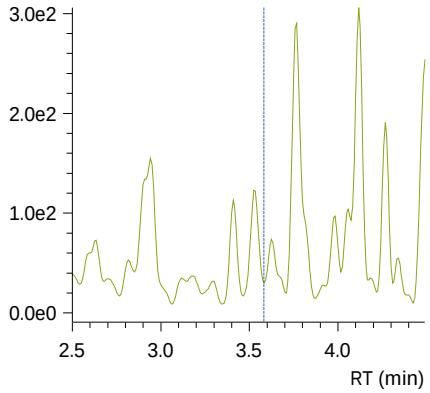
### Perchlorate

Conc ----
R#1 0.00 (27.83)

Q 99.00>83.00 (-) 3.22e2



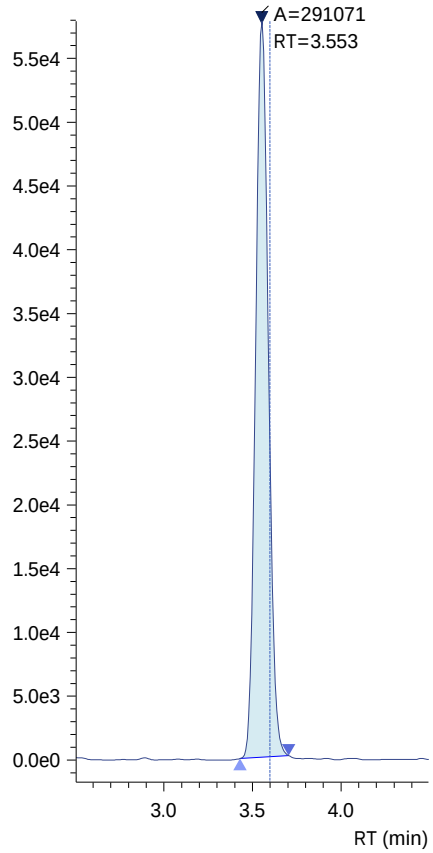

R1 101.00>85.00 (-) 3.06e2




### Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 5.79e4



# Insight Report

Printed at 10/2/2023 8:56:18 AM

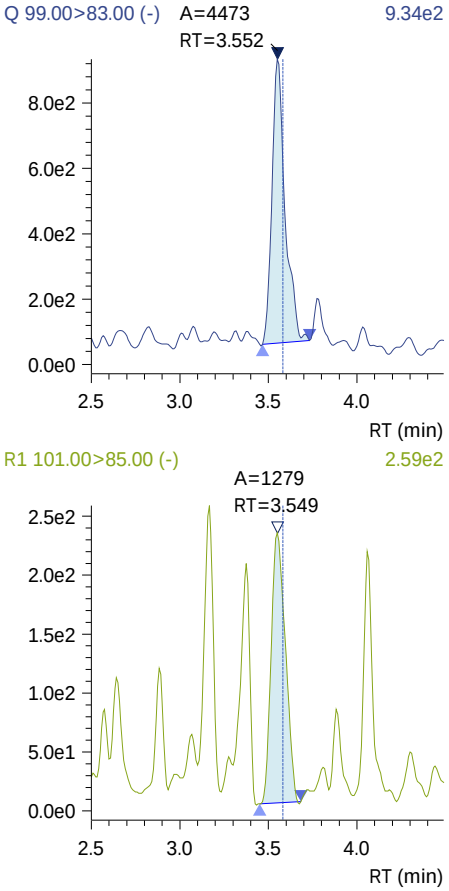
## EQ2300472-02

Sample ID: EQ2300472-02
Date Acquired: 9/29/2023 2:54:29 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230929\20230929-006.lcd
Vial: 2 | Inj. Volume: 10.0000uL | Tray: 5

| Name | Mode ID | Found RT | Area | ISTD Area | Conc. | Unit | Ref 1 m/z | Ref 1 Actual Ratio | Comment 1 |
|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | Auto | 3.552 | 4473 | 269387 | 0.1126 | ng/mL | 101.00 >85.00 | 28.58 | 19.48-36.18 |
| Sodium Perchlorate-18O4 _IS | Auto | 3.553 | 269387 | 269387 | 1.0000 | ng/mL | ---- | ---- | |

### Perchlorate

Conc 0.1126
R#1 28.58 (27.83)

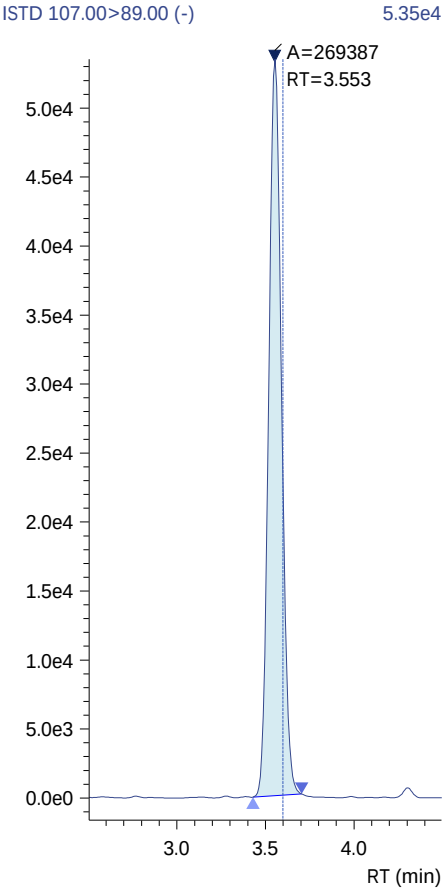






### Sodium Perchlorate-18O4_IS

Conc 1.0000



# Insight Report

Printed at 10/2/2023 8:56:18 AM

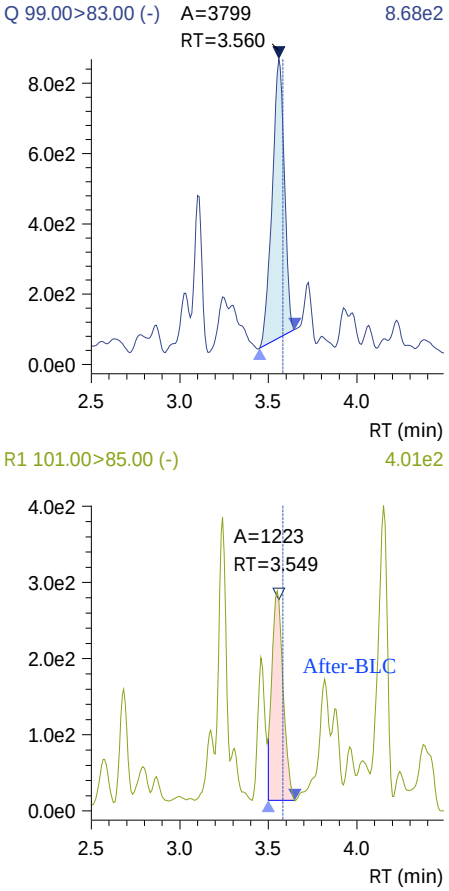
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Date Acquired: 9/29/2023 3:00:01 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230929\20230929-007.lcd
Vial: 3 | Inj. Volume: 10.0000uL | Tray: 5

| Name | Mode ID | Found RT | Area | ISTD Area | Conc. | Unit | Ref 1 m/z | Ref 1 Actual Ratio | Comment 1 |
|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | MI R1 | 3.560 | 3799 | 264117 | 0.0975 | ng/mL | 101.00 >85.00 | 32.20 | 19.48-36.18 |
| Sodium Perchlorate-18O4 _IS | Auto | 3.554 | 264117 | 264117 | 1.0000 | ng/mL | ---- | ---- | |

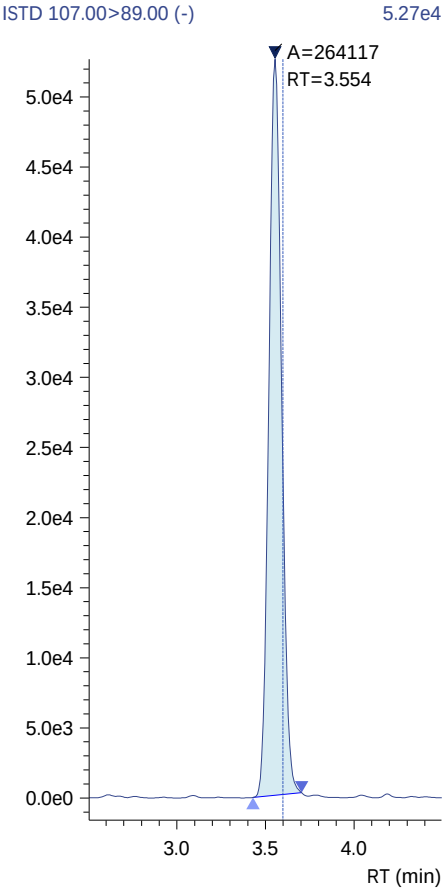
### Perchlorate

Conc 0.0975
R#1 32.20 (27.83)




### Sodium Perchlorate-18O4_IS

Conc 1.0000



# Insight Report



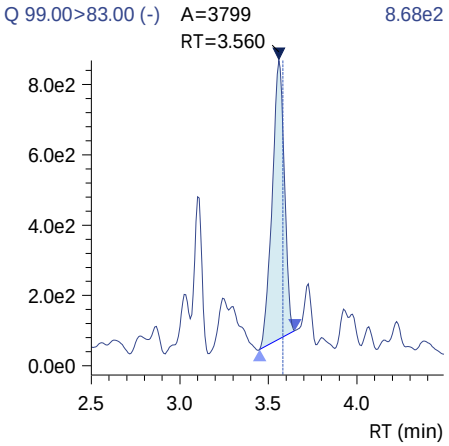
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Project File: I:\LCMS01\DATA\20230929\20230929.damlp

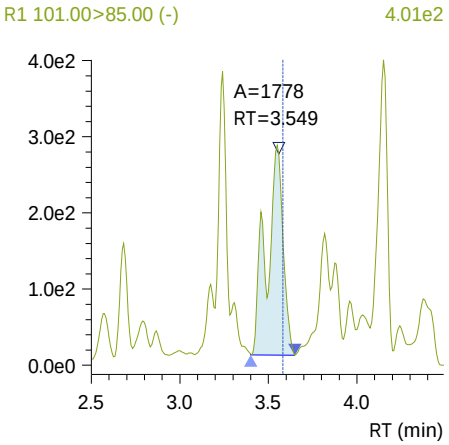
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Date Acquired: 9/29/2023 3:00:01 PM
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Vial: 3 | Inj. Volume: 10.0000uL | Tray: 5

### Perchlorate

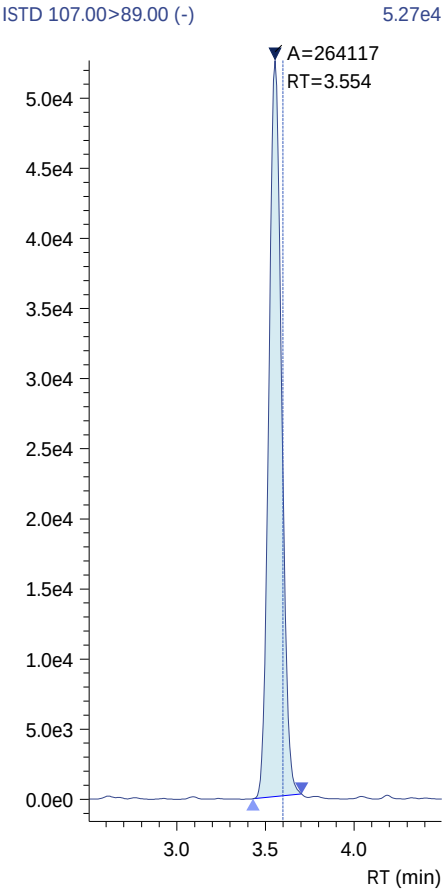
Conc 0.0975
R#1 46.80 (27.83)




### Sodium Perchlorate-18O4_IS

Conc 1.0000



# Insight Report

Printed at 10/2/2023 8:56:18 AM

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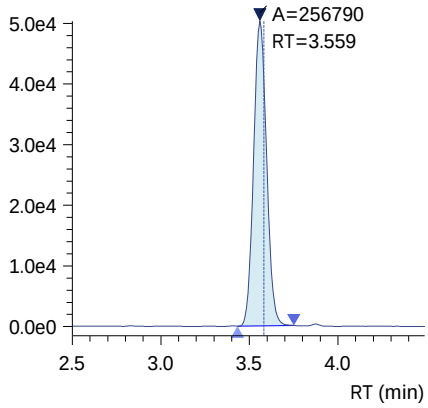
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Acquired by: System Administrator
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Vial: 4 | Inj. Volume: 10.0000uL | Tray: 5

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|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | Auto | 3.559 | 256790 | 380929 | 4.5715 | ng/mL | 101.00 >85.00 | 29.19 | 19.48-36.18 |
| Sodium Perchlorate-18O4 _IS | Auto | 3.555 | 380929 | 380929 | 1.0000 | ng/mL | ---- | ---- | |

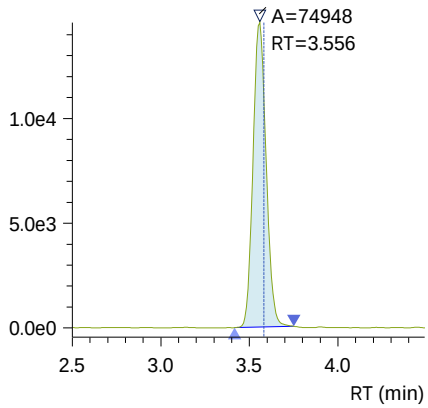
### Perchlorate

Conc 4.5715
R#1 29.19 (27.83)

Q 99.00>83.00 (-) 5.04e4



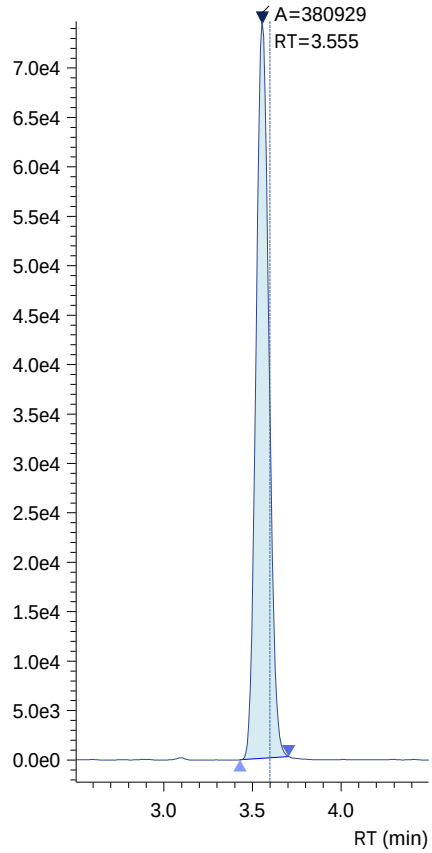

R1 101.00>85.00 (-) 1.46e4




### Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 7.47e4



# Insight Report

Printed at 10/2/2023 8:56:18 AM

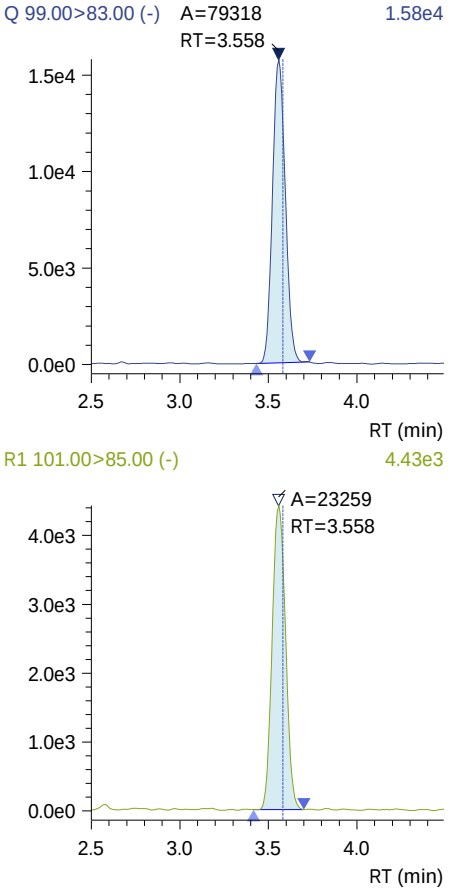
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Acquired by: System Administrator
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Vial: 5 | Inj. Volume: 10.0000uL | Tray: 5

| Name | Mode ID | Found RT | Area | ISTD Area | Conc. | Unit | Ref 1 m/z | Ref 1 Actual Ratio | Comment 1 |
|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | Auto | 3.558 | 79318 | 388688 | 1.3839 | ng/mL | 101.00 >85.00 | 29.32 | 19.48-36.18 |
| Sodium Perchlorate-18O4 _IS | Auto | 3.555 | 388688 | 388688 | 1.0000 | ng/mL | ---- | ---- | |

### Perchlorate

Conc 1.3839
R#1 29.32 (27.83)

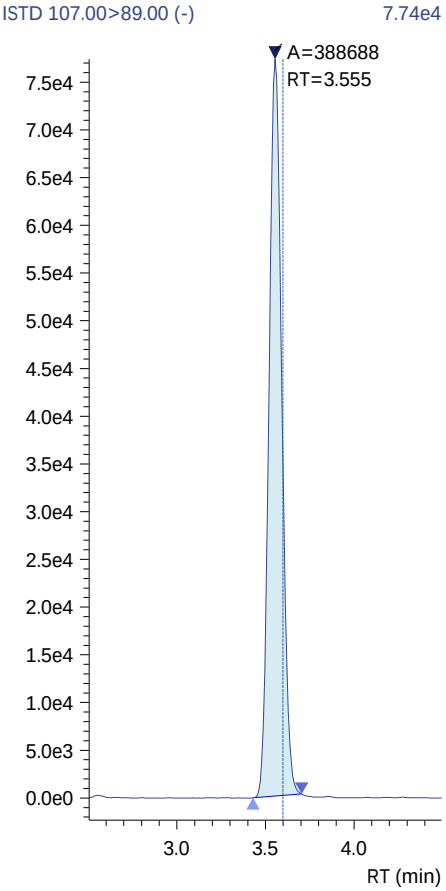






### Sodium Perchlorate-18O4_IS

Conc 1.0000



# Insight Report

Printed at 10/2/2023 8:56:18 AM

## CCV

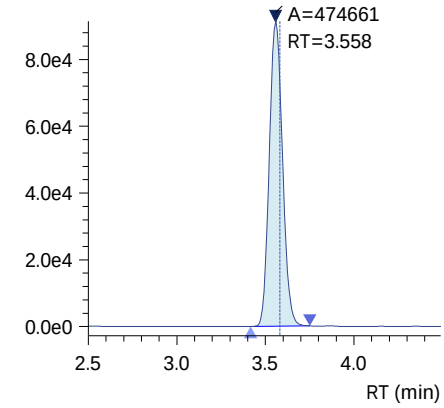
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Acquired by: System Administrator
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| Name | Mode ID | Found RT | Area | ISTD Area | Conc. | Unit | Ref 1 m/z | Ref 1 Actual Ratio | Comment 1 |
|---|---|---|---|---|---|---|---|---|---|
| Perchlorate | Auto | 3.558 | 474661 | 323569 | 9.9481 | ng/mL | 101.00 >85.00 | 27.20 | 19.48-36.18 |
| Sodium Perchlorate-18O4_IS | Auto | 3.555 | 323569 | 323569 | 1.0000 | ng/mL | ---- | ---- | |

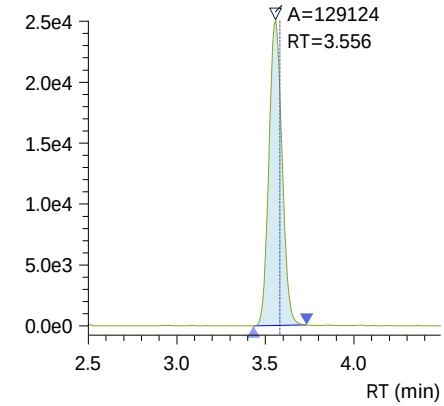
### Perchlorate

Conc 9.9481
R#1 27.20 (27.83)

Q 99.00>83.00 (-) 9.15e4



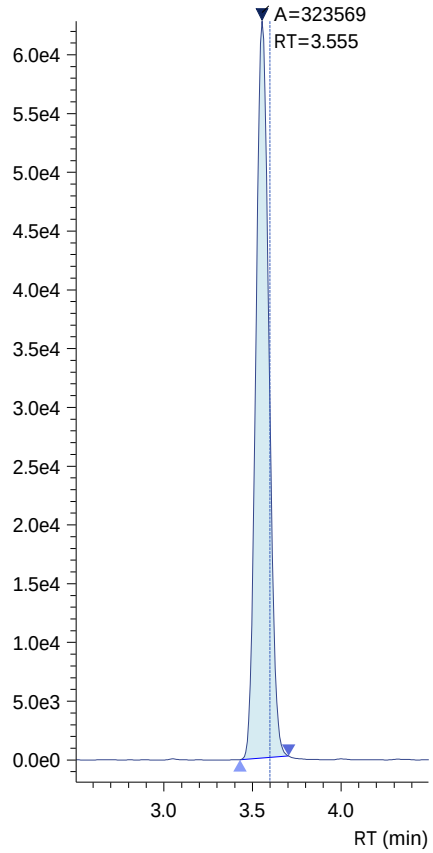

R1 101.00>85.00 (-) 2.51e4




### Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 6.29e4



**DEPARTMENT OF THE ARMY**
**US ARMY INSTALLATION MANAGEMENT COMMAND**
**US ARMY ENVIRONMENTAL COMMAND**
**2455 REYNOLDS ROAD**
**JOINT BASE SAN ANTONIO FORT SAM HOUSTON, TX 78234-7588**

June 21, 2024

SUBJECT: Draft Final Ninth Annual Remedial Action Operation Report, LHAAP-46 (Plant 2 Area), Longhorn Army Ammunition Plant (LHAAP), Karnack, Texas, June 2024

Mr. Brian Follin
U.S. Environmental Protection Agency
1201 Elm Street, Suite 500
Dallas, TX 75270-2002

Dear Mr. Follin,

An electronic copy of the above referenced document has been added to the project portal's "Documents" folder at the following address for your review: (https://aptimcorp.sharepoint.com/sites/501032/regulators/SitePages/Home.aspx#InplviewHash0414c1c8-f92c-4aad-a79f-6b9b22856ef5=SortField%3DModified-SortDir%3DDesc). An electronic copy of this letter and download instructions for the electronic file have been sent via email. The document includes revisions based upon comments on the draft version received from the Environmental Protection Agency (EPA) comments on the Draft version received on April 19,2024 and from the Texas Commission on Environmental Quality on April 23, 2024. Tables of responses to the EPA and TCEQ comments on the Draft version are included with this Draft Final document. In accordance with the Federal Facility Agreement, this Draft Final will be considered Final after 30 days without further comment.

The document was prepared by the PCI-Bhate Joint Venture (PCI-Bhate) team, on behalf of the Army as part of PCI-Bhate's Performance Based Remediation contract for the facility. I ask that Zack Beck, PCI-Bhate's Project Manager, be copied on any communications related to the project.

The point of contact for this action is the undersigned. I may be contacted at (726) 999-0505, or by email at lena.j.sierocinski.civ@army.mil.

Sincerely,

Lena Sierocinski

Lena Sierocinski
LHAAP Environmental Support Manager
U.S. Army Environmental Command

Electronic copies furnished:
A. Palmie, TCEQ, Austin, TX
J. Reyes, USEPA Region 6, Dallas, TX
E. Duerkop, USFWS, Caddo Lake NWR, TX
C. Montoya, USACE, Tulsa District, OK
A. Williams, USACE, Tulsa District, OK
K. Russell, BRAC, Huntsville, AL
Z. Beck, Bhate, Lakewood, CO
P. Srivastav, APTIM, Houston, TX

**DEPARTMENT OF THE ARMY**
**US ARMY INSTALLATION MANAGEMENT COMMAND**
**US ARMY ENVIRONMENTAL COMMAND**
**2455 REYNOLDS ROAD**
**JOINT BASE SAN ANTONIO FORT SAM HOUSTON, TX 78234-7588**

June 21, 2024

SUBJECT: Draft Final Ninth Annual Remedial Action Operation Report, LHAAP-46 (Plant 2 Area), Longhorn Army Ammunition Plant (LHAAP), Karnack, Texas, June 2024

Ms. April Palmie
Texas Commission on Environmental Quality
Superfund Section, MC-136
12100 Park 35 Circle, Bldg D
Austin, TX 78753

Dear Ms. Palmie,

An electronic copy of the above referenced document has been added to the project portal's "Documents" folder at the following address for your review: (https://aptimcorp.sharepoint.com/sites/501032/regulators/SitePages/Home.aspx#InplviewHash0414c1c8-f92c-4aad-a79f-6b9b22856ef5=SortField%3DModified-SortDir%3DDesc). An electronic copy of this letter and download instructions for the electronic file have been sent via email. The document includes revisions based upon comments on the draft version received from the Environmental Protection Agency (EPA) comments on the Draft version received on April 19,2024 and from the Texas Commission on Environmental Quality on April 23, 2024. Tables of responses to the EPA and TCEQ comments on the Draft version are included with this Draft Final document. In accordance with the Federal Facility Agreement, this Draft Final will be considered Final after 30 days without further comment.

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The point of contact for this action is the undersigned. I may be contacted at (726) 999-0505, or by email at lena.j.sierocinski.civ@army.mil.

Sincerely,

Lena Sierocinski

Lena Sierocinski
LHAAP Environmental Support Manager
U.S. Army Environmental Command

Electronic copies furnished:
B. Follin, USEPA Region 6, Dallas, TX
J. Reyes, USEPA Region 6, Dallas, TX
E. Duerkop, USFWS, Caddo Lake NWR, TX
C. Montoya, USACE, Tulsa District, OK
A. Williams, USACE, Tulsa District, OK
K. Russell, BRAC, Huntsville, AL
Z. Beck, Bhate, Lakewood, CO
P. Srivastav, APTIM, Houston, TX

**Response to USEPA Comments on**
**Draft Ninth Annual Remedial Action Operation Report**
**LHAAP-46 (Plant 2 Area)**

**Document Date: 26 March 2024**
**Comment Date: 19 April 2024**

**Reviewer:** Joel Reyes for Brian Follin - USEPA
**Respondent:** Lena Sierocinski - Army

1. Respondent Concurs (C), Does Not Concur (D), Takes Exception (E), or Delete (X)
2. Commenter Agrees (A) with response, or Does Not Agree (D) with response

| Comment Number | Section/ Page | Paragraph/ Line | USEPA Comment | C, D, E, or X | Response | A or D |
|---|---|---|---|---|---|---|
| 1 | 1.1, 1-1 | 3rd paragraph | 3rd paragraph is a great historical summary of LHAAP that needs to be tied back in to LHAAP-46 (e.g., LHAAP-46 was established in YEAR-PLANT#…), to help give the reader a stronger historical context of this site. LHAAP-29 is a great example. | C | Additional historical text has been incorporated into Section 1.0 to describe LHAAP-46. | |
| 2 | Table 2-1 | | Under "Notes" – reference **Appendix B - Photographic Log and Well Inspection Forms** for the reader that printed this document. Also, include the Appendix B Photo Log table has the photos hyperlinked, please consider doing this for Table 2-1. | C | The following note has been added to Table 2-1 "See also Appendix B - Photographic Log and Well Inspection Forms". A note has been added to the Photo Log indicating that the photo callouts are hyperlinked. Hyperlinks to the inspection forms have been added for Table 2-1. | |
| 3 | Figures | | -Add street/road labels for reference (whenever possible).<br><br>-Add Goose Prairie Creek Tributary label, starting in Figure 2-2 through Figure 2-5. Goose Prairie Creek is properly labeled. | C<br><br>C | Street and road labels will be added to the figures where possible.<br><br>The drainages to the north of the site and within the south central portion of the site have been labeled as "Goose Prairie Creek Tributary" on Figures 2-2 through 2-5. | |

| Comment Number | Section/ Page | Paragraph/ Line | USEPA Comment | C, D, E, or X | Response | A or D |
|---|---|---|---|---|---|---|
| | | | -Consider using aerials in figures, similar to LHAAP-29 draft report. | E | Please refer to TCEQ's 19 April 2024 email regarding this comment. TCEQ and other reviewers in the past have found the nearly uniform dark green background of the aerials difficult to use on figures where there are multiple types of labels and symbols to be displayed with different colors trying to stand out against the background. | |
| 4 | Figure 3-1 | | When printing document, graphs are too small for the reader to analyze. Graphs will need to fit a regular letter size paper (8.5 x 11 inches). | C | Figure 3-1 has been split into Figures 3-1a through 3-1e to allow the individual graphs to be on separate 8.5" x 11" pages. | |
| 5 | Well Reports | | Was not able to find all of the LHAAP-46 monitoring wells in the Texas Water Development Board (Groundwater Data Viewer) website. Performed a quick search, but may need to be revisited only to confirm all wells have been properly reported and mapped in this tool. I was able to find Well 46WW05 and did a quick/dirty geological profile to better understand the data in picture/drawing format, please see figure below.<br>*NOTE: It is not expected that the graphs presented in this report look like the example provided below.* | C | Many of the wells at LHAAP-46 were installed prior to 2003 and would have been reported to the state by the driller on paper forms, many using only grid locations and not lat/long coordinates. The TCEQ has scanned those forms and made an attempt to locate them correctly where possible on their search tool (TCEQ Water Well Report Viewer). However, our experience has been that the ability to find those reports in the TCEQ's database is spotty at best, with many locatable only at the county level via searching through hundreds of records. Boring logs for the wells at LHAAP-46 are available in the historic reports, and we plan to include two cross-sections in the Tenth Annual RA-O Report showing the screened elevation data provided on Table 2-4 graphically. | |

**Response to TCEQ Comments on**
**Ninth Annual Remedial Action Operation Report**
**LHAAP-46 (Plant 2 Area)**

**Document Date: 26 March 2024**
**Comment Date: 23 April 2024**

**Reviewer:** April Palmie - TCEQ
**Respondent:** Lena Sierocinski - Army

1. Respondent Concurs (C), Does Not Concur (D), Takes Exception (E), or Delete (X)
2. Commenter Agrees (A) with response, or Does Not Agree (D) with response

| Comment Number | Section/ Page | Paragraph/ Line | TCEQ Comment | C, D, E, or X | Response | A or D |
|---|---|---|---|---|---|---|
| 1 | Section 4.0 | | Agree with recommendation to try to install another shallow well. Upgradient of LHSMW21 would be preferable. | C | Comment noted. | |
| 2 | Appendix A | | In List of Appendices and on appendix cover page, remove the word “Sample”. Next year, also try to print a new copy of the form and remove the word “sample”. | C | Text revised accordingly. | |
| 3 | Appendix B | | Please replace the equipment calibration log form with one that is legible and straight for future work. | C | A new calibration form has been provided to the field sampling team based on previous TCEQ comments. | |

# Draft Final
# Ninth Annual Remedial Action Operation Report
# LHAAP-46 (Plant 2 Area)
## Longhorn Army Ammunition Plant
## Karnack, Texas

**Contract Number: W912BV23C0007**
**Task Order: W45XMA31085678**

**Rev 0**

**June 2024**

Prepared for:

U.S. Army Corps of Engineers, Tulsa District
Contracting Division
2488 East 81st Street
Tulsa, Oklahoma 74137–4290

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PCIbhate

11921 Freedom Drive, Suite 550
Reston, Virginia 20190
251-333-1127

Prepared by:

APTIM

Aptim Federal Services, LLC
10333 Richmond Avenue, Suite 1030
Houston Texas 77042

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Appendix E Mann-Kendall Trend Analysis
Appendix F Predictive Modeling

# Acronyms and Abbreviations

| | |
|---|---|
| µg/L | micrograms per liter |
| amsl | above mean sea level |
| AECOM | AECOM Technical Services, Inc. |
| bgs | below ground surface |
| Bhate | Bhate Environmental Associates, Inc. |
| COC | contaminant of concern |
| DCE | dichloroethene |
| DO | dissolved oxygen |
| EPA | Environmental Protection Agency |
| J | estimated concentration |
| LHAAP | Longhorn Army Ammunition Plant |
| LUC | land use control |
| MCL | Maximum Contaminant Level |
| mg/L | milligram(s) per liter |
| MNA | monitored natural attenuation |
| mV | millivolts |
| No. | Number |
| ORP | oxidation-reduction potential |
| RA-O | remedial action operation |
| RACR | Remedial Action Completion Report |
| RD | Remedial Design |
| Shaw | Shaw Environmental, Inc. |
| TCE | trichloroethene |
| TNT | trinitrotoluene |
| TOC | total organic carbon |
| U.S. | United States |
| USACE | U.S. Army Corps of Engineers |
| VC | vinyl chloride |
| VOC | volatile organic compound |

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# 1.0 INTRODUCTION

The U.S. Army Corps of Engineers (USACE), Tulsa District, contracted with the Poarch Creek Indians-Governmental Services (PCI) Bhate Environmental Associates, Inc. (Bhate) Joint Venture LLC (PCI-Bhate JV) under Omaha Multiple Environmental Government Acquisition, National Small Business Multiple Award Contract Number (No.) W912BV23C0007, Environmental Remediation Services with Military Munitions Response Program, Task Order No. W45XMA31085678, to conduct environmental restoration at multiple sites at the former Longhorn Army Ammunition Plant (LHAAP). The PCI-Bhate JV Team consists of the PCI-Bhate JV as the prime contractor and Aptim Federal Services, LLC (APTIM) as a subcontractor responsible for remedial activities at several sites, including LHAAP-46.

LHAAP is located in east Texas, in the northeastern corner of Harrison County between State Highway 43 in Karnack, Texas, and the western shore of Caddo Lake, as shown on **Figure 1-1**. The nearest cities are Marshall, Texas, approximately 14 miles to the southwest, and Shreveport, Louisiana, approximately 40 miles to the east. Caddo Lake is a large freshwater lake that bounds LHAAP to the north and east. The eastern fence of the LHAAP installation is 3.5 miles from the Texas-Louisiana state border.

LHAAP was established in December 1941 with the primary mission of manufacturing trinitrotoluene (TNT). Production of TNT began at Plant 1 in October 1942 through 1945, then Plant 1 was placed on standby status until February 1952. In 1952, the facility was reactivated, and production of pyrotechnic ammunition, such as photoflash bombs, simulators, hand signals, and tracers for 40-millimeter ammunition, continued at Plant 2, northeast of Plant 1, through 1956. In December 1954, a third facility, Plant 3, began production of solid-fuel rocket motors for tactical missiles until 1965, when Plant 2 was reactivated. In the years following the Vietnam conflict, LHAAP continued to produce flares and other basic pyrotechnic or illuminating items for the U.S. Department of Defense inventory. From September 1988 to May 1991, LHAAP was also used for the static firing and elimination of Pershing I and II rocket motors. LHAAP-46 is the current designation of the former Plant 2 Area. Construction of facilities for producing JB-2 propellant fuel at Plant 2 began in 1944, but construction was halted in 1945 with the end of World War II. Plant 2 was used to produce pyrotechnic ammunition, such as photoflash bombs, simulators, hand signals, and tracers for 40 mm ammunition from 1952 to 1956. Plant 2 was reactivated to produce pyrotechnic and illuminating devices from 1965 to 1997. LHAAP, including Plant 2, operated until 1997 when it was placed on inactive status and classified by the U.S. Army Armament, Munitions, and Chemical Command as excess property (Shaw 2010).

Remedial action operation (RA-O) activities are required at LHAAP-46 under the Record of Decision issued for the site in September 2010 (USACE 2010). The Remedial Action Completion Report (RACR) (AECOM Technical Services, Inc. [AECOM] 2015a) outlined the implementation of RA-O to address risks associated with contaminated groundwater at the LHAAP-46 site. The RACR was developed using the basis and details of the Remedial Design (RD) (Shaw Environmental, Inc. [Shaw] 2011) and the Remedial Action Work Plan for LHAAP-46 (AECOM 2013).

Groundwater monitoring at LHAAP-46 is ongoing, as described in the RACR. This report represents the ninth year of RA-O implementation and summarizes the results of site inspections and sampling activities. RA-O groundwater sampling performed at LHAAP-46 between May 2013 and February 2023 has determined that eight of the twelve shallow wells have been dry during nearly every sampling event. Due to contractual reasons, sampling was not performed in 2017. Five of the typically dry shallow monitoring wells are located within the historical trichloroethene (TCE) plume area or to the east (downgradient) of the current shallow zone TCE plume areas. The inability to sample these shallow wells in key locations has prevented the full evaluation of the plume extent and the progress of the monitored natural attenuation (MNA) remedy at the site (AECOM 2017). A *Final Technical Memorandum – Remedial Action-Operation Monitoring at LHAAP-46* was submitted in March 2018 (Bhate 2018a), which concluded that the groundwater elevations declining in the area of LHAAP-46 were not likely to be a temporary rain-dependent issue but were part of a long-term trend of declining groundwater elevations. The memorandum recommended that MNA evaluation at LHAAP-46 should proceed without waiting for data from the dry wells, and the regulators concurred with the recommendation. During discussion of the Eighth Annual RA-O Report (Bhate 2023), the Environmental Protection Agency (EPA) requested additional evaluation of the screened intervals for the dry wells at LHAAP-46 relative to the bottom of the shallow zone/top of the intermediate zone to determine the potential for installation of shallow wells with deeper screened intervals. **Section 2.2.1.1** has been expanded to include a discussion of the dry shallow zone well screened intervals and **Table 2-4** has been added showing the relationship between the historically dry shallow zone wells and the nearby intermediate zone wells. The annual RA-O sampling event for Year 9 was conducted in February 2023. An evaluation of the MNA remedy is included in **Section 3.0** of this Ninth Annual RA-O Report.

## 1.1 Remedial Action Objectives

The remedial action objectives for the LHAAP-46 site are to protect human health and meet applicable or relevant and appropriate requirements. There are no unacceptable ecological risks posed by the LHAAP-46 site (USACE 2010). The remedial action objectives for LHAAP-46, consistent with the reasonably anticipated future use of the site as a national wildlife refuge, are as follows:

- Protection of human health by preventing human exposure to the contaminated groundwater.
- Protection of human health and the environment by preventing contaminated groundwater from migrating into nearby surface water.
- Returning groundwater to its potential beneficial use as a drinking water source, wherever practicable.

## 1.2 Performance Objectives

The remedy selected for LHAAP-46 is land use controls (LUC) and MNA. The performance objectives at LHAAP-46 consist of two components: physical inspections and groundwater/surface water monitoring.

As a component of the LUC implementation, the civil survey of the LUC boundary was conducted in November 2014 and recorded in the Harrison County Courthouse in December 2014. Physical inspections are conducted annually to confirm compliance with the LUC objectives, which consist of preventing human exposure to groundwater contamination at levels that pose an unacceptable risk to a future maintenance worker and ensuring that there is no withdrawal or use of groundwater from the site for anything other than environmental monitoring and testing until the Maximum Contaminant Levels (MCLs) are attained. Groundwater monitoring of the remedy has been conducted at the site since May 2013, and LHAAP-46 is included in the facility-wide Longhorn Five-Year Review. Groundwater and surface water monitoring are being performed with the following objectives:

- Detect changes in environmental conditions that may reduce the efficacy of natural attenuation processes.
- Identify potentially toxic and/or mobile transformation products.
- Verify that the plume is not expanding.
- Verify no unacceptable impact to downgradient receptors, such as discharge to surface water.
- Detect new releases of contaminants to the environment that could impact effectiveness of the natural attenuation remedy.
- Verify attainment of the remediation objectives.

LHAAP-46 RA-O monitoring began in 2013. During the first two years, monitoring was performed on a quarterly basis and documented in annual reports (AECOM 2015b, 2016). In accordance with the RD (Shaw 2011), the Year 3 (AECOM 2017), Year 4 (Bhate 2019a), and Year 5 (Bhate 2020) RA-O monitoring events were conducted semiannually; the Year 6 RA-O, Year 7 RA-O, and Year 8 RA-O monitoring events (Bhate 2021, 2022, and 2023) were conducted on an annual basis; and the Year 9 RA-O monitoring period is the fourth event where the monitoring was conducted annually.

Groundwater monitoring attempted as part of the Year 9 RA-O consisted of groundwater sampling at twelve shallow zone wells, ten intermediate zone wells, one shallow/intermediate zone well, and one deep zone well. Of these twenty-four monitoring wells, nine shallow wells were dry such that no samples were collected for laboratory analysis. This report summarizes the LUC compliance inspection, monitoring well inspection, and results of groundwater and surface water sampling.

## 1.3 Site Description

Site LHAAP-46 (Plant 2 Area) is located in the north-central portion of LHAAP, in a formerly industrial area where pyrotechnic and illumination devices were produced until 1997 (**Figure 1-2**). LHAAP-46 occupies approximately 190 acres within a triangular area bounded by Avenue P to the southwest, the LHAAP property boundary fence to the north, and site LHAAP-47 to the southeast. The surface features at LHAAP-46 include asphalt-paved roads, parking areas, building foundation remnants, abandoned

buildings, wooded areas, and overgrown grasses and other vegetation. The topography is relatively flat, sloping slightly to the east, with the surface water drainage flowing to the east into tributaries of Goose Prairie Creek, which eventually discharges into Caddo Lake. LHAAP-46 has no known areas of archaeological or historical importance.

## 1.4 Conceptual Site Model

A detailed Conceptual Site Model for LHAAP-46 was previously developed and is presented in the Record of Decision (USACE 2010). Based on additional data collected as part of the final remedy implementation and presented in the LHAAP-46 Draft Final RACR (AECOM 2015a), the lithologic units at the site have been characterized. Three groundwater zones, identified as the shallow, intermediate, and deep zones, are present beneath LHAAP-46. The top of the shallow groundwater zone is encountered at approximately 10 to 28 feet below ground surface (bgs) and extends to approximately 24 to 40 feet bgs beneath LHAAP-46. The lithology of the shallow zone consists mostly of clay, with relatively thin discontinuous sand layers. Groundwater tends to occur preferentially in the more permeable thin sand layers. The shallow groundwater zone is typically unconfined.

The intermediate groundwater zone is generally sandier than the shallow groundwater zone. A relatively thick sand layer was identified in the intermediate groundwater zone in three of the five monitoring wells installed during remedy implementation, but it was not present in the boreholes for monitoring wells 46WW08 and 46WW16, in the northern part of the site. A clay layer that acts as a leaky aquitard is present between the shallow and intermediate zones throughout most of the site. At 46WW17, the uppermost sandy layers appeared deeper than the other nearby shallow zone wells and there was no obvious aquitard separating the shallow zone from the intermediate zone. The well was installed in the uppermost observed saturated zone at a depth that straddles the depths typically seen for shallow and intermediate zone wells at the site, and the groundwater elevation is consistent with other nearby intermediate zone wells. Well 46WW17 is referred to as a shallow/intermediate zone well due to the position of the well screen and the lack of a confining layer to separate the two zones, and the groundwater elevations are used only in the development of potentiometric surface contours for the intermediate zone.

The groundwater elevation in the shallow groundwater zone is approximately 15 to 20 feet higher than the intermediate groundwater zone, supporting some degree of hydraulic separation between those zones. However, there is a downward vertical gradient and contaminants of concern (COCs) in the shallow groundwater zone that are also present in groundwater in the intermediate zone. Depth to groundwater was observed to range from approximately 19 to 37 feet bgs in the intermediate zone wells. The sand interval representing the intermediate zone is at a depth between 36 and 43 feet bgs.

Only one groundwater monitoring well, 46WW03, is completed in the deep groundwater zone. Based on previous investigations, the deep groundwater zone consists primarily of clay, with occasional fine sand and silt layers. However, a thick, fine-grained sand bed occurs approximately 88 feet bgs and extends to

approximately 101.5 feet bgs. The upper surface of the sand is gradational, with an increase in the proportion of sand beginning at about 80 feet bgs.

The basal contact of the deep zone sand unit with the underlying shale and clay units is sharp. Monitoring well 46WW03 is screened in this deep sand bed between 90 and 100 feet bgs. The clayey section above the deep sand layer is interpreted as an aquitard separating the intermediate groundwater zone from the deep groundwater zone. A very hard layer identified at 82 feet bgs may represent the upper boundary of the deep groundwater zone where possible mineralization (cementation) has occurred. Based on the depth to groundwater in well 46WW03, it appears that the water-bearing sand in the deep zone is under confined to semiconfined conditions. Communication between the intermediate groundwater zone and the deep groundwater zone is limited based on the difference in groundwater elevations in collocated wells 46WW02 and 46WW03, which was 3.0 feet or greater during the second, third, and fourth annual RA-O periods. During the fifth, sixth, seventh and eighth annual RA-Os, the difference in elevation was slightly lower, averaging 2.6 feet, with a downward vertical gradient, but still indicating a lack of hydraulic communication between the intermediate and deep zones in this area. Additionally, the groundwater analytical results corroborate the lack of communication between the intermediate and deep zones, as the COCs in the intermediate zone at 46WW02 have not migrated downward in the vicinity of deep well 46WW03.

Groundwater elevations in shallow and intermediate wells at the site have been declining since at least the year 2000, as documented in the *Final Technical Memorandum – Remedial Action-Operation Monitoring at LHAAP-46* (Bhate 2018a). The average decline in wells evaluated in the memorandum has been greater than 10 feet since 2000, and several of the wells at the site have run dry and have remained that way in most cases even after large rainfall events, as documented in previous RA-O reports. The conclusion of the memorandum was that the decline in groundwater elevations was not attributable to changes in rainfall. The groundwater elevations measured in February 2023 were generally consistent with those measured in previous years and most locations had groundwater elevations slightly lower than in 2022. Wells that were dry during previous years continued to be dry, including 46WW04, 46WW10, and LHSMW17, where sufficient water was present to collect a sample in 2022 after being dry for several years.

The groundwater COCs in the shallow and intermediate zones at LHAAP-46 are TCE and its daughter products: cis-1,2-dichloroethene (DCE) and vinyl chloride (VC). Human health risks associated with these COCs are the primary driver for remedial action, as the site poses no unacceptable ecological risks (USACE 2010). Previous investigations conducted at the Plant 2 Area between 1991 and 2008 determined the nature and extent of contamination in the soil, groundwater, surface water, and sediments at LHAAP-46. The most likely sources of contamination were spills resulting from a variety of support services that occurred in the area (USACE 2009, 2010). The spills resulted in soil contamination, and the COCs released to the surface soil subsequently migrated through leaching to the groundwater. The previous investigations and the risk assessments concluded that the soil, sediment, and surface

water at LHAAP-46 do not pose a risk to the environment or to human health under an industrial exposure scenario for a future maintenance worker (USACE 2010).

The nearest significant surface water body to LHAAP-46 is Goose Prairie Creek, which is located approximately 1,500 feet east of the site (**Figure 1-2**). Minor drainages located north of the site and within the south-central portion of the site feed into Goose Prairie Creek. The potential exposure pathways are groundwater used as drinking water and migration of impacted groundwater into surface water. Groundwater is not used as drinking water at the refuge, and this potential exposure pathway has been eliminated for any hypothetical future receptors because LUCs are in place that prohibit the use of groundwater for any purpose other than for environmental monitoring and testing.

# 2.0 SITE ACTIVITIES AT LHAAP-46

This chapter describes the results of the ninth annual RA-O activities conducted between December 2022 and November 2023, including the annual LUC compliance inspection, annual groundwater monitoring, and monitoring system repairs and/or maintenance performed at LHAAP-46.

## 2.1 Annual Land Use Control Compliance Inspection, Well Maintenance, and Repairs

### 2.1.1 Annual Land Use Control Compliance Inspection

The annual LUC compliance inspection for LHAAP-46 was performed on June 23, 2023, and no LUC violations were identified. The LUC for LHAAP-46 is groundwater restriction. Groundwater use at LHAAP-46 is restricted to environmental monitoring and testing until levels of COCs in groundwater and soil allow unrestricted use and unlimited exposure. The restriction applies to groundwater underlying a 63.772-acre tract defined by the surveyed LUC boundary (AECOM 2015a). The Annual LUC Compliance Certification Documentation Form for the ninth annual RA-O period is included in **Appendix A**.

### 2.1.2 Well Field Operation and Maintenance

Inspections of the conditions/integrity of monitoring wells were conducted during the February 2023 sampling event, and the information was recorded on the field sampling forms. **Table 2-1** provides a summary of the maintenance activities that were performed at the site during the ninth annual RA-O period. **Appendix B** includes a photographic log, which shows the condition of the wells during this period. During the ninth annual reporting period, no noncompliance issues or concerns were noted during the annual well inspections in February 2023. No damage to well bollards, pads, or protective well casings was observed. Issues noted with lock closures and hinges during the Year 8 RA-O were addressed in February 2023. Peeling of the paint on the protective casing was observed at LHSMW17, LHSMW20, LHSMW22, and LHSMW24 and will be addressed during the Year 10 annual RA-O in February 2024. Mowing the area to control brush and weeds was conducted at LHAAP-46 on February 1, 2023.

## 2.2 Annual Groundwater Monitoring

LHAAP-46 ninth year RA-O monitoring wells are depicted on **Figure 2-1**. During the February 2023 sampling event, nine of the twenty-four wells planned for sampling were dry or had insufficient water for a sample to be collected, as shown in **Table 2-2**. Two wells, LHSMW20 and LHSMW24, which are only used for gauging, were dry and could not be gauged. Before collection of groundwater samples, the wells were gauged using a water level probe, and the depth to water (or bottom of the well) was recorded to the nearest 0.01 foot from the top of casing.

Groundwater samples were collected using the low-flow sampling procedures described in the Installation-Wide Work Plan (Bhate 2018b). The low-flow method is utilized to minimize the turbidity in the groundwater samples. After water quality parameters stabilized and were within acceptable ranges, samples were collected at the same low flow rate. All groundwater samples were analyzed for volatile organic compounds (VOCs) according to SW-846 Method 8260b. Samples from a subset of wells were also analyzed for MNA parameters, as further discussed in **Section 3.0**. Sample collection field forms are provided in **Appendix C**. Laboratory analytical data packages are provided in **Appendix D**. The MNA parameter list was revised in accordance with the *Final Technical Memorandum – Monitored Natural Attenuation Parameters* (Bhate 2019b) to remove sampling for phosphorus, manganese, total iron, and dissolved iron (laboratory).

### 2.2.1 Groundwater Elevations and Flow Direction

Synoptic water level measurements were attempted at 26 wells in February 2023. Eleven of the wells were dry and could not be gauged. Groundwater elevations are summarized in **Table 2-3**. In accordance with the recommendations in the Fourth Annual RA-O Report (Bhate 2019a), the off-schedule attempts to gauge and sample wells that were dry during the semiannual sampling events were discontinued. As approved in the Fifth Annual RA-O Report (Bhate 2020), groundwater elevations measurements at 46WW15, LHSMW20, and LHSMW24 were added to the RA-O plan to gather additional information regarding the potentiometric surface and the extent of dry conditions in the shallow aquifer, beginning with the March 2021 event. Wells 46WW15, LHSMW20, and LHSMW24 were dry in February 2023.

#### 2.2.1.1 Shallow Groundwater Zone

During the February 2023 monitoring event, shallow wells 46WW01, 46WW04, 46WW10, 46WW12, 46WW13, 46WW15, LHSMW17 (and alternate well LHSMW18), and LHSMW22 were dry. Wells 46WW11, LHSMW19, and LHSMW21 could be gauged for groundwater in the shallow zone. Well 46WW17 straddles the shallow and intermediate zone depth range such that the groundwater elevation is representative of the intermediate zone. **Figure 2-2** presents the groundwater potentiometric surface for the shallow groundwater zone, as interpreted during the February 2023 monitoring event. Based on the gauging data collected during the February 2023 event, the groundwater flow was generally to the east and southeast.

The groundwater elevations at 46WW11, LHSMW19, and LHSMW21 have been relatively consistent over the years and have generally not changed more than 1 to 2 feet from one event to the next between 2013 and 2023 (**Table 2-3**).

For the 2023 RA-O evaluation, the screened interval depths in the 11 historically dry shallow wells were evaluated to determine where the bottom of these wells are vertically located relative to the top of the intermediate groundwater zone. The evaluation used the boring logs from the shallow wells and the nearest intermediate zone wells. **Table 2-4** presents the results of the evaluation. At five of the wells (46WW01, LHSMW17, LHSMW18, LHSMW20, and LHSMW22) shaded in green on the table, the bottom of the shallow well screen was greater than 10 feet above the top of the intermediate groundwater zone

at the nearest intermediate zone well. The distance to the nearest intermediate zone well ranged from 23 feet at 46WW01 to 496 feet at LHSMW17, with an average of 259 feet. These locations are generally in the central and southern portion of the site. At two of the shallow well locations (46WW04 and 46WW10 [shaded blue in **Table 2-4**]), the bottom of the well screen was less than 10 feet above the top of the intermediate groundwater zone, with the distance to the nearest intermediate zone well ranging from 22 feet at 46WW04 to 325 feet at 46WW10. Both of those locations are along the western edge of the site. The four remaining wells (46WW12, 46WW13, 46WW15, and LHSMW24) (shaded gray in **Table 2-4**) have bottom of screen elevations that overlapped the top of the intermediate groundwater zone in the nearest intermediate well by 2.61 to 5.19 feet. The distance to the nearest intermediate zone well in those four locations ranged from 136 feet at 46WW15 to 256 feet at LHSMW24. Locations 46WW12, 46WW13, and LHSMW-24 are located to the east of the center of the site, and LHSMW15 is located 1050 feet west of the site boundary.

The groundwater elevations in the shallow groundwater zone in the eastern and northern portions of the site, where measurable groundwater was present, ranged from 185.22 to 188.32 feet above mean sea level (amsl). The top of the intermediate zone in the nearest intermediate well for the five wells screened at least 10 feet above the top of the intermediate groundwater zone ranged from 166.37 to 174.16. This indicates that there may be enough depth below the bottom of the existing screened interval to redrill new wells screened at least five to 10 feet deeper in the shallow groundwater zone without intersecting the top of the intermediate groundwater zone in the central and southern portion of the site.

#### 2.2.1.2 Intermediate Groundwater Zone

Water was present in each of the intermediate zone wells gauged during the February 2023 gauging event. **Figure 2-3** presents the groundwater potentiometric surface. The groundwater elevation in 46WW08 was not used in developing the contour maps because the groundwater elevation appears to be anomalously high relative to other intermediate zone wells, as has been observed in previous years. The groundwater elevation in 46WW08 continues to be similar to the shallow zone elevation. It is possible that there is leakage from the shallow zone in this area of the site or that the grout seal is leaking, such that the groundwater elevation at 46WW08 reflects shallow zone conditions. The groundwater flow direction in the intermediate groundwater zone interpreted from the February 2023 data is generally to the north and northwest, consistent with the flow direction presented in previous RA-O reports.

#### 2.2.1.3 Deep Groundwater Zone

Well 46WW03 is the only well screened in the deep groundwater zone. Therefore, a potentiometric surface map for the deep zone was not constructed.

#### 2.2.1.4 Vertical Gradients

For the shallow and intermediate zones, well pair 46WW04/46WW06 has been used in the past to evaluate the vertical gradient. However, shallow well 46WW04 was dry in February 2023. For the

intermediate and deep zones, well pair 46WW02/46WW03 has been used to evaluate the vertical gradient.

For the intermediate to deep zone evaluation of the vertical gradient was conducted between collocated intermediate and deep zone wells 46WW02 and 46WW03 in February 2023. The groundwater elevations in February 2023 were 172.88 feet amsl in the intermediate well (46WW02) and 169.69 feet amsl in the deep well (46WW03), indicating a difference of 3.19 feet between these two zones with a downward vertical gradient. The head differential between the two zones indicates that there is hydraulic separation between these two units, but the layer between the zones may be more permeable than the layer between the shallow and intermediate zones.

### 2.2.2 Groundwater Analytical Results

VOC and MNA parameter analytical results and field parameter measurements for the 2023 annual samples are presented in **Table 2-5**. **Table 2-6** provides historical results for LHAAP-46 COCs. Laboratory reports are provided in **Appendix D**. During the ninth year RA-O monitoring events, TCE was detected at concentrations above the MCL (5 micrograms per liter [µg/L]) in the shallow and intermediate zones at five of the sampled monitoring wells (46WW02, 46WW05, 46WW11, LHSMW19, and LHSMW21). The COCs, cis-1,2-DCE and VC, were detected at concentrations above their respective MCLs in one well (LHSMW21). As noted in **Table 2-5**, samples collected for nitrates analysis on February 7 and February 9, 2023, from wells 46WW05, 46WW09, and 46WW11 could not be analyzed within the holding time due to an instrument outage at the laboratory. The three affected wells were resampled on February 28, 2023, and the nitrate concentrations were all below 1.0 milligram per liter (mg/L).

**Figure 2-4** depicts the shallow zone COC results for wells sampled during the ninth year RA-O sampling events. TCE was detected above the MCL in all three of the shallow or shallow/intermediate wells where a sufficient volume of water was present to collect a sample. At 46WW11, the TCE concentration increased from 8.5 µg/L in February 2022 to 22 µg/L in February 2023. The TCE concentration at LHSMW19 increased slightly to 24 µg/L (26 µg/L in the field duplicate sample) in February 2023 from 21 µg/L in February 2022. The February 2023 TCE concentration of 61 µg/L (up from 49 J [estimated concentration] µg/L in February 2022) represents the highest concentration detected at LHSMW21 in monitoring data dating back to 1996. The cis-1,2-DCE concentration at LHSMW21 increased from 180 µg/L in 2022 to 200 µg/L in 2023; while the VC concentration increased from 4.9 J µg/L in February 2022 to 8 µg/L in February 2023. The increases in DCE and VC concentrations suggest that biological degradation may be occurring upgradient of LHSMW21.

**Figure 2-5** depicts the intermediate zone COC data for wells sampled in February 2023. TCE continued to be detected above the MCL in two intermediate wells (46WW02 and 46WW05) in 2023. At 46WW02, the TCE concentration remained constant at 29 µg/L in February 2022 and February 2023. At 46WW05, the TCE concentration increased from 18 µg/L in February 2022 to 33 µg/L in February 2023. No COCs were detected above the laboratory reporting limits in shallow/intermediate well 46WW17.

No COCs were detected above the laboratory reporting limits in the deep zone well 46WW03.

## 2.3 Surface Water Sampling

**Figure 2-1** shows the surface water locations associated with site LHAAP-46. Surface water sample location 46SW10 is located in a tributary of Goose Prairie Creek. The location is downgradient of the intermediate zone groundwater plume but cross gradient from the shallow zone groundwater plume (**Figures 2-4** and **2-5**).

To determine if groundwater can potentially influence surface water, groundwater elevations are compared to the elevation at the bottom of the creek. The elevation of the bottom of the creek at surface water sampling location 46SW10 is 197.27 feet amsl. Well LHSMW21 is the nearest shallow zone well to the surface water sampling location. The groundwater elevation was gauged in February 2023, during the ninth annual RA-O sampling period. At LHSMW21, the groundwater elevation in February 2023 was 188.32 feet amsl, which was below the bottom of the creek. Groundwater was not discharging to the creek; therefore, a surface water sample was not collected.

## 2.4 Groundwater Monitoring Network

As approved in the Sixth Annual RA-O Report (Bhate 2021), 46WW17 was added to the sampling network beginning with the Year 7 annual sampling in March 2021. No changes to the groundwater monitoring network are planned for Year 10 (**Figure 2-6**). Year 10 RA-O sampling locations are listed in **Table 2-7**.

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# 3.0 NATURAL ATTENUATION EVALUATION

This section presents the results of the natural attenuation evaluation for LHAAP-46 groundwater COCs as described in the Final RD (Shaw 2011). Samples were collected in February 2023 from 15 of the 24 wells planned for the annual sampling event. Field parameters were recorded during the sampling of each of these wells. In addition, samples from two shallow zone wells and four intermediate zone wells were analyzed for additional parameters used to evaluate MNA. The analytical results are summarized in **Table 2-5**. The three lines of evidence to evaluate MNA are presented in **Sections 3.1** through **3.3**.

## 3.1 First Line of Evidence: Change in COC Concentrations

Natural attenuation is the combination of multiple mechanisms, including biodegradation, volatilization, dilution, advection, and adsorption that decrease contaminant concentrations. The first line of evidence evaluates the decrease in COC concentrations over time and distance. As with previous RA-O events at LHAAP-46, the inability to sample many of the shallow wells due to dry conditions hinders a full evaluation of MNA at the site. However, evaluation of the groundwater elevation trends indicated that the declining elevations were not related to lack of rainfall. Rebound of the elevations has not occurred despite abundant rainfall for the last several years, including during the winter of 2020/2021. COC concentrations for the ninth year of RA-O sampling events are provided on **Figures 2-4** and **2-5** as well as in **Tables 2-5** and **2-6**.

During the ninth annual RA-O sampling, TCE was detected at concentrations above the MCL of 5 µg/L in three shallow (46WW11, LHSMW19, and LHSMW21) and two intermediate (46WW02 and 46WW05) monitoring wells. At LHSMW21, the TCE degradation daughter products, cis-1,2-DCE and VC, were observed above their respective MCLs, suggesting that biological degradation may be occurring in the groundwater near this well.

Mann-Kendall analysis for the ninth annual RA-O monitoring period was completed for TCE. The results are presented in **Appendix E** in graphical format, with statistical results presented on the bottom of the page. The GSI Mann-Kendall Tool Kit was used for this analysis. The concentrations of COCs are presented in µg/L. Half the reporting limit was used for nondetect results. For duplicate samples, the primary sample result was used. The level of significance is calculated for each analysis and provided on the trend analysis sheet. A summary table of the Mann-Kendall results is provided in **Table 3-1**. Historical COC results for all wells are presented in **Table 2-6**.

### 3.1.1 Shallow Zone

In February 2023, three shallow wells had a sufficient amount of water to collect samples. Analytical results from two wells, 46WW11 and LHSMW19, indicated TCE concentrations above the MCL of 5 µg/L and analytical results from the third well, LHSMW21, indicated the presence of TCE, cis-1,2-DCE, and VC at concentrations above their respective MCLs. At 46WW17, which screens a combined shallow/

intermediate zone, no COCs were observed above their laboratory detection limits. The lack of shallow zone saturation observed during the drilling of 46WW17 currently delineates the northeastern plume boundary. However, as recommended in the Year 7 and 8 RA-O Reports, installation of an additional well in the shallow zone (based on screened elevation) may be advisable in the future to confirm the absence of shallow zone saturation and/or contamination to the northeast of LHSMW21.

**Well 46WW11**

VOC groundwater results since August 2013 are available for well 46WW11 (**Table 2-6**). TCE concentrations in this well have decreased over time from a high of 90.6 µg/L in July 2014 to a low at 8.5 µg/L in February 2022, but increased to 22 µg/L in February 2023 (**Figure 3-1a**). Since 2018, cis-1,2-DCE and VC have remained below the laboratory reporting limit. The Mann-Kendall trend analysis in 46WW11 still indicates a statistically significant decrease in TCE concentrations over time with a confidence factor greater than 99.9 percent (**Table 3-1** and **Appendix E**).

**Figure 3-1** shows a graph of TCE concentration and groundwater elevation versus time in 46WW11. The historical decrease in TCE concentrations and the lack of cis-1,2-DCE and VC indicates abiotic processes are likely to be the primary mechanism for the decrease in COCs rather than anaerobic biodegradation of TCE (**Table 2-6**).

**Well LHSMW19**

VOC groundwater results since December 1994 are available for well LHSMW19 (**Table 2-6**). TCE levels in this well increased from 26 µg/L in December 1994 to a high of 85.5 µg/L in February 2007. Since 2007, TCE levels have decreased to a low of 2.4 µg/L in February 2018 and have since rebounded to 24 µg/L in February 2023 (**Figure 3-1b**). The TCE degradation product cis-1,2-DCE has fluctuated over the years at low levels and was not detected in February 2018. The cis-1,2-DCE concentrations have slowly increased in concentration since 2018 with the February 2023 concentration of 11 µg/L still well below the MCL of 70 µg/L. VC has remained below laboratory reporting limits since 1996. Even with the rebound in TCE concentrations since 2018, the Mann-Kendall trend analysis of the analytical data for monitoring well LHSMW19 indicates a statistically significant decrease in TCE concentrations over time with a confidence factor of 99.6 percent (**Table 3-1** and **Appendix E**).

**Figure 3-1** includes a graph of TCE concentrations and groundwater elevations over time in LHSMW19. The fluctuating TCE concentrations over time and the presence of cis-1,2-DCE during the ninth year RA-O period indicate limited biodegradation is occurring. However, other MNA processes, including dilution and dispersion, may be the primary mechanisms for the decrease in TCE.

**Well LHSMW21**

VOC groundwater results are available for well LHSMW21 since February 1996 (**Table 2-6**). The TCE concentrations in this well have increased over time, from below the detection limit from 1996 to 1998, to below the MCL of 5 µg/L in 2013, and to 61 µg/L in February 2023 (**Figure 3-1c**). Since 1996, cis-1,2-DCE has also increased from below the detection limit in 1998 and below the MCL in 2013 to 200 µg/L in

February 2023. VC has continued to slowly increase recently and was detected at the highest concentration of 8 µg/L during the ninth RA-O sampling event. The Mann-Kendall trend analysis in LHSMW21 for TCE, cis-1,2-DCE, and VC indicates a statistically significant increasing trend with a confidence factor greater than 99.9 percent for each COC, as shown in **Table 3-1** and **Appendix E**. The increasing concentration trend in LHSMW21 correlate with an increasing trend in the groundwater elevation, as shown on **Figure 3-1**.

**Figure 3-1** shows a graph of TCE, cis-1,2-DCE, and VC concentrations along with groundwater elevation versus time at LHSMW21. The presence of cis-1,2-DCE and VC during the ninth year RA-O period indicates biodegradation is likely occurring. Monitoring well 46WW17, located to the northeast of LHSMW21, currently bounds the plume in this direction based on the lack of observed shallow groundwater saturation and the lack of a confining layer underlying the shallow permeable strata. However, it may be advisable to install a well screened only in the shallow permeable strata at a depth comparable to LHSMW21 in the future to confirm the absence of saturation and/or contamination downgradient of LHSMW21.

**Other Shallow Zone Wells**

Historically, COCs have been below their respective MCLs at the other shallow zone wells, except for 46WW01 and LHSMW18. During the third year RA-O period, groundwater was present at 46WW01 and LHSMW18, and COC concentrations were below their respective MCLs for each of these wells. There has been insufficient water present in 46WW01 for sampling since the third year RA-O period. There was no water present in LHSMW18 during the February 2023 sampling event.

**Shallow Zone COCs and Distance**

Based on the direction of groundwater flow, which is generally to the east or east-southeast based on limited potentiometric data in the shallow zone (**Figure 2-3**), monitoring well 46WW10 is considered a background well for the shallow zone, although 46WW10 was dry in February 2023. TCE at downgradient well LHSMW19 has fluctuated and was below the MCL for the first time in February 2018 but continues to rebound, reaching 24 µg/L in 2023. The next downgradient well from LHSMW19 is 46WW11, where the TCE concentrations have declined from 90.6 µg/L in July 2014 to 8.5 µg/L in 2022 but rebounded to 22 µg/L in 2023. Monitoring wells downgradient of LHSMW19 and 46WW11 were dry in 2023. Monitoring well LHSMW21, which is cross gradient of these wells, did have sufficient water for sampling. Based on the concentrations of COCs present in well LHSMW21 above MCLs, it appears concentrations were increasing away from the historical center of the contaminant plume. There may be a northward component to the plume migration that is not visible in the potentiometric surface contours due to the limited groundwater elevation data available. Monitoring well 46WW17 was installed in July 2020 and is located to the east-northeast of LHSMW21. This well is considered a shallow/intermediate well. Concentrations of COCs in 46WW17 are below their detection limits, and the lack of shallow saturation encountered there currently defines the northeastern edge of the shallow plume near LHSMW21.

### 3.1.2 Intermediate Zone

Groundwater samples were collected from nine wells in the intermediate zone during the ninth year RA-O. TCE was detected above the MCL in two wells, 46WW02 and 46WW05, which are the focus of this section.

**Well 46WW02**

At 46WW02, COCs have been detected above the MCLs since November 1998 (**Table 2-6**), and TCE was detected above the MCL during the ninth year RA-O monitoring period. The TCE concentrations in this well decreased from 38.2 µg/L to 15 µg/L between November 2014 and February 2020, before increasing to 29 µg/L in February 2022 and remaining stable at 29 µg/L in 2023. The 15 µg/L TCE concentration detected during the sixth year RA-O was the lowest observed to date. During the past several RA-O sampling events, the TCE degradation product cis-1,2-DCE has been present at low levels (below 3 µg/L). In February 2023, VC was detected slightly below laboratory reporting limit at 0.43 µg/L. **Figure 3-1d** includes a graph of TCE, cis-1,2-DCE, and VC concentrations over time and shows decreasing concentrations of TCE through 2020 prior to increasing to current stable levels in 2022 and 2023, with consistently low concentrations of cis-1,2-DCE and VC. A Mann-Kendall trend analysis was conducted for TCE, the only COC above the MCL. The results are presented in **Appendix E**. The Mann-Kendall trend analysis in 46WW02 indicates a statistically significant decrease in TCE concentrations over time with a confidence factor of 96.6 percent.

The historical decrease in TCE concentrations and the minimal cis-1,2-DCE and VC concentrations indicate abiotic processes are likely to be the primary mechanism for the decrease in TCE, rather than anaerobic biodegradation.

**Well 46WW05**

VOC groundwater results are available for 46WW05 from October 2008 through the ninth year RA-O monitoring period in 2023 (**Table 2-6**). TCE, cis-1,2-DCE, VC, and 1,1-DCE have historically been detected in 46WW05; however, only TCE has been detected above its MCL since November 2014. The highest level of TCE was 144 µg/L in May 2013, and concentrations decreased to their lowest level at 6.4 µg/L in August 2018. Concentrations rebounded to 62 µg/L in August 2019 and appear to be fluctuating since, with a detection of 33 µg/L in February 2023. **Figure 3-1e** includes a graph of concentrations of TCE, cis-1,2-DCE, and VC in monitoring well 46WW05 over time and shows an overall decrease in TCE concentrations since February 2016. A Mann-Kendall trend analysis was conducted for TCE, the only COC currently above the MCL. The results are presented in **Table 3-1** and **Appendix E**. The trend analysis for TCE in 46WW05 indicates that there is a statistically significant decrease in TCE concentrations over time with a greater than 99.9 percent confidence factor.

The decrease in TCE concentrations over time and the presence of cis-1,2-DCE indicate limited biodegradation is likely occurring. Other MNA processes, including dilution and dispersion, are likely to be the primary mechanisms reducing COC concentrations in the vicinity of well 46WW05.

**Other Intermediate Zone Wells**

Historically, COCs have been below their respective MCLs at the remaining intermediate zone monitoring wells included in the RA-O monitoring program.

**Intermediate Zone COCs and Distance**

The direction of groundwater flow in the intermediate zone is generally to the north and northwest (**Figure 2-3**). During the ninth year RA-O sampling event, no COCs were observed in shallow/intermediate well 46WW17. Two independent plumes exist in the intermediate zone at 46WW02 and 46WW05, separated by 46WW09 (**Figure 2-5**), where no COCs have been detected. COCs have not been detected in wells 46WW09 or 46WW16, downgradient of wells 46WW02 and 46WW05, respectively. The data from wells in the intermediate zone indicate that TCE is degrading over distance within the individual plumes.

### 3.1.3 Deep Zone

No COCs were detected at deep zone monitoring well 46WW03 during the ninth year RA-O sampling events. COCs have not been observed at this well since the well was installed and first sampled in 1998.

### 3.1.4 Plume Stability

Plume maps completed for the February 2023 sampling event are presented for the shallow zone and the intermediate zone on **Figures 2-4** and **2-5**, respectively. Analysis of the historical COC data indicates a decreasing trend in shallow zone monitoring wells 46WW11 and LHSMW19. However, the increasing trends for TCE, cis-1,2-DCE, and VC at LHSMW21 indicate that the horizontal extent of the shallow zone plume may be fluctuating or migrating northeastward. COCs are below their detection limits at 46WW17, and the plume is bound in this direction, based on the lack of a separate shallow saturated zone noted during drilling. However, installation of an additional well at a depth comparable to LHSMW21 may be desirable to confirm the absence of shallow groundwater or contamination downgradient of LHSMW21. Although groundwater elevations could only be measured from three wells during the February 2023 sampling event, shallow groundwater flow appears to generally be toward the east and southeast, which is consistent with the historical easterly groundwater flow direction.

In the intermediate zone, COCs were detected above MCLs in only two wells, 46WW02 and 46WW05. Based on the general direction of intermediate groundwater flow (generally to the north and northwest), the following wells are considered to be along the groundwater flowpath: 46WW02, 46WW09, 46WW05, and 46WW16 (**Figure 2-3**). Contaminated groundwater in the vicinity of wells 46WW02 and 46WW05 occurs in two separate, isolated plumes (**Figure 2-5**); however, no COCs have been detected above MCLs at wells downgradient of these two wells. Therefore, based on the inferred flowpath, COC levels are not increasing with distance from the source area. Concentrations of COCs in wells surrounding the most impacted wells (46WW02 and 46WW05) are decreasing over time, indicating the intermediate zone plume is not migrating.

Due to the potential for expansion of the shallow plume beyond LHSMW21, the intermediate well 46WW14 was added to the monitoring network beginning with the March 2021 annual sampling event. All three COCs were below the laboratory detection limit at 46WW14 during the February 2023 sampling event, indicating that shallow contamination at LHSMW21 has not migrated to the intermediate zone in that area.

## 3.2 Second Line of Evidence: Geochemical Indicators

To aid in determining if the groundwater is favorable for MNA processes, geochemical indicators are evaluated. During groundwater sampling, field parameters were collected and include dissolved oxygen (DO), oxidation-reduction potential (ORP), pH, conductivity, turbidity, and temperature. Select monitoring wells were sampled for additional MNA parameters, as shown in **Table 2-2**. **Table 2-5** provides the geochemical data used to determine if the site groundwater is favorable for MNA biological degradation processes. The MNA parameters analyzed during the ninth year of RA-O include anions (chloride, nitrate, and sulfate), total organic carbon (TOC), and dissolved gases (ethene, ethane, methane, and carbon dioxide).

**Dissolved Oxygen**

DO is the most thermodynamically favored electron acceptor used by microbes for biodegradation of organic carbon, whether natural or anthropogenic (EPA 1998). Anaerobic bacteria, which are the primary microbes able to degrade the site COCs, may be inhibited at DO concentrations greater than 0.5 mg/L. In monitoring wells where COCs are above the MCL, the DO concentrations during the ninth year RA-O ranged from 0.02 to 0.09 mg/L, with an average of 0.06 mg/L. The low DO levels (<0.5 mg/L) observed in each of the impacted wells are favorable for reductive dechlorination.

**Oxidation-Reduction Potential**

The ORP levels indicate the oxidative or reductive potential in the aquifer and aid in determining if conditions are conducive for biodegradation. ORP values less than 50 millivolts (mV) indicate that the aquifer is favorable for biological reductive dechlorination of chlorinated ethenes and ethanes. During the ninth year RA-O monitoring, the ORP measurements ranged from 32 to 275 mV, with an average of 137 mV. In February 2023, the ORP measurements were above 50 mV at four of the five impacted wells, suggesting that groundwater conditions are oxidative within most of the plume area.

**Nitrate**

After DO has been depleted by microbes in the treatment zone, nitrate may be used as an electron acceptor and is reduced to nitrite. Nitrate levels above 1.0 mg/L may compete with reductive dechlorination (EPA 1998). The nitrate concentrations were all below 1.0 mg/L during the ninth year RA-O. The nitrate levels are not expected to inhibit the anaerobic degradation of site COCs.

**Sulfate**

After DO, nitrate, and iron have been depleted in the groundwater, sulfate is used as an electron acceptor and is reduced to sulfide. Concentrations of sulfate greater than 20 mg/L may compete with reductive dechlorination of the site COCs. However, in many plumes with high concentrations of sulfate, reductive dechlorination still occurs (EPA 1998). Sulfate was sampled in monitoring wells designated for MNA analysis during the ninth year RA-O and ranged from 265 to 4,440 mg/L. The elevated sulfate concentrations observed at the site indicate sulfate may compete as an electron acceptor with site COCs.

**Methane**

Methanogenesis occurs in highly reducing conditions and generally occurs after oxygen, nitrate, iron, and sulfate have been depleted. Methane levels above 500 µg/L are considered indicative of methanogenic conditions (EPA 1998). Methane concentrations were less than 25 µg/L during the ninth year RA-O and suggest that methanogenic conditions are not present in the groundwater.

**Total Organic Carbon**

Regardless of the electron acceptor being used, organic carbon is a required source of reduced carbon and energy to sustain microbial activity. TOC is utilized as an energy and hydrogen source to support reductive dechlorination of the chlorinated COCs. TOC concentrations greater than 20 mg/L are considered adequate to support microbial activity (EPA 1998). The highest level of TOC observed during the ninth year RA-O sampling event was 10.3 mg/L, indicating that carbon concentrations in the groundwater are not supportive of reductive dechlorination.

**pH**

The pH of the groundwater can affect the activity of microbial populations. Microbes capable of degrading chlorinated aliphatic hydrocarbons generally prefer pH values from 6 to 8 standard units (EPA 1998). The pH levels in the shallow and intermediate zones ranged from 4.36 to 10.57 standard units, with an average of 6.43 standard units during the ninth year RA-O sampling. The measured pH was below 6.0 standard units in 6 of the 22 readings collected during the ninth year RA-O sampling event and continues to be low (4.36 and 5.29) in the impacted intermediate zone wells, which is likely to be inhibiting the potential for degradation by dechlorinating bacteria.

**Ethene and Ethane**

Ethane and ethene are two final degradation products of the reductive dechlorination pathways for chlorinated ethanes and ethenes. During the ninth year RA-O, ethane concentrations continue to be below the laboratory reporting limit of 0.5 µg/L in each of the primary groundwater samples analyzed, though it was detected at 0.958 µg/L in a field duplicate sample. Ethene was detected above the detection limit at two of the six locations analyzed in 2023, with a maximum detection of 1.32 µg/L in 46WW05. While small concentrations of ethene were detected in two wells, the data indicate that widespread complete reductive dechlorination is not likely to be occurring.

**Geochemical Indicator MNA Parameter Summary**

The qualitative assessment of groundwater geochemical indicators collected during the ninth year RA-O period continues to indicate that current groundwater conditions are not favorable for MNA processes via biological reduction. The minimal presence of the degradation products, cis-1,2-DCE, VC, and ethene suggests that limited but complete biological degradation may be occurring. However, the primary MNA processes responsible for reducing concentrations appear to be abiotic.

## 3.3 Third Line of Evidence: Predictive Analysis and Microbial Analysis

If the first two lines of evidence for MNA are deemed inadequate or inconclusive and/or the need for a contingency remedy is evaluated, data from field or microcosm studies will be necessary to establish the third line of evidence for MNA. The COC and geochemistry data indicate that abiotic degradation of the site contaminants is the primary mechanism reducing concentrations, and therefore, the microbial analysis is not required. Dechlorinating bacteria such as *Dehalococcoides ethenogenes* and associated functional genes have not been measured at this site and could not be used to assess whether they exist naturally at the site.

Also, predictive analysis using degradation rates can be used as a third line of evidence to estimate the time required to reach the MCL. Using Mann-Kendall trend analysis, TCE concentrations showed a significant decrease over time in shallow zone wells 46WW11 and LHSMW19 and intermediate zone wells 46WW02 and 46WW05 (**Table 3-1** and **Appendix E**). The calculated first order rate constants and the times to achieve the MCL of 5 µg/L are included in **Appendix F**.

At shallow groundwater well 46WW11, the first order rate constant was calculated at 0.0006 $day^{-1}$ and the time to achieve the MCL of 5 µg/L from the February 2023 concentration of 22 µg/L is estimated at 6.8 years. For LHSMW19, the first order rate constant is 0.0002 $day^{-1}$ and the time to achieve the MCL of 5 µg/L from the February 2023 concentration of 24 µg/L is estimated at 34.3 years. At intermediate zone well 46WW05, the first order rate constant is 0.0007 $day^{-1}$ and the time to achieve the MCL of 5 µg/L from the February 2023 concentration of 33 µg/L is estimated at 7.4 years. At intermediate zone well 46WW02, the first order rate constant is 0.0001 $day^{-1}$ and the time to achieve the MCL of 5 µg/L from the February 2023 concentration of 29 µg/L is estimated at 48.2 years.

These determinations assume that the decrease in concentrations will continue at the same rate as calculated from recent data. The predictive analysis estimates that TCE may decrease to below the MCL in areas where decreasing concentrations are observed in 48.2 years at LHAAP-46. The ninth annual RA-O estimate of predictive analysis cleanup time based on the wells with decreasing trends increased from the eighth annual RA-O estimate of 24.1 years due to steady concentrations at 46WW02 that resulted in a decrease in the first order rate constant from 0.0002 to 0.0001. In addition, this analysis only applies to wells with a decreasing trend, and currently there are increasing trends for TCE,

cis-1,2-DCE, and VC at LHSMW21, so the time to reach the MCL throughout the site groundwater cannot be determined at this time.

While these calculations provide an estimated time to achieve the MCL at each location with a decreasing trend, given lithologic variability and groundwater elevation fluctuations that may influence COC concentrations, the time necessary to achieve the MCL may vary by an order of magnitude or more. Additionally, the rate of reduction could diminish over time as the residual concentrations decrease, and the time frames to achieve the MCL may be longer than estimated by these calculations.

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# 4.0 CONCLUSIONS AND RECOMENDATIONS

During the ninth year RA-O monitoring at LHAAP-46, samples were collected from shallow, intermediate, and deep zone wells in February 2023. Samples were analyzed for VOCs and geochemical parameters to evaluate effectiveness of MNA as a site remedy. Reductions in COC concentrations over time and with distance were evaluated. The results of the evaluation and the conclusions are summarized below:

- During the ninth annual reporting period, four wells were observed to have peeling paint (LHSMW17, LHSMW20, LHSMW22, and LHSMW24). These wells will be repainted during the tenth annual RA-O activities. No other issues or concerns were noted during the annual well inspections, and no damage to well bollards, pads, or protective well casings was observed.
- Consistent with previous years, groundwater flow direction appears to be to the east and southeast in the shallow zone and generally to the north and northwest in the intermediate zone. However, the potentiometric contours are based on relatively few locations and may not accurately depict small differences in the flow directions that exist at the site.
- TCE, cis-1,2-DCE, and VC are the only COCs detected in the groundwater at concentrations exceeding the MCLs in 2023.
- In the shallow groundwater zone, wells 46WW11, LHSMW19, LHSMW21, and recent shallow/intermediate monitoring well 46WW17 are the only wells where sufficient water was present to collect samples. The groundwater elevation at 46WW17 indicates that it is likely representative of the intermediate zone. However, the absence of shallow saturation or a confining layer underlying the permeable intervals observed during drilling indicates that saturation and/or contamination may not be present in the shallow zone interval east-northeast of LHSMW21. As recommended in the Year 7 and 8 RA-O reports (Bhate 2022 and Bhate 2023), consideration should be given to confirming this in the future by installing a shallow well near 46WW17 with a screened interval elevation similar to LHSMW21 to determine if saturated conditions and/or contamination are present.
- TCE concentrations demonstrate a decreasing trend in wells 46WW11 and LHSMW19 based on Mann-Kendall trend analysis. The Mann-Kendall analysis at well LHSMW21 indicates increasing trends for TCE, cis-1,2-DCE, and VC. Future sampling will aid in determining if these trends continue.
- In the intermediate zone, COC concentrations show a decreasing trend. Groundwater elevations have shown a loose correlation with the COC concentrations, and dilution is not apparent when groundwater elevations have increased. COCs have not increased with distance from the most impacted wells, 46WW02 and 46WW05, and no new detection of COCs at boundary area wells have been reported, indicating plume migration is not

occurring. Due to the presence of COCs detected at shallow well LHSMW21, 46WW14 was added to the annual sampling to assess potential downward migration into the intermediate zone. COCs continued to be below the laboratory detection limit in February 2023 at 46WW14.

- No COCs were detected in the one deep well (46WW03).
- The assessment of geochemical parameters indicates that groundwater conditions are not favorable for biological reductive dechlorination in most areas and that abiotic MNA processes appear to be primarily responsible for declining concentrations.
- The predictive analysis estimates that TCE concentrations may decrease to below the MCL at LHAAP-46 in 48.2 years where COCs are decreasing; however, based on the increasing concentrations at LHSMW21, it is not possible to determine when COCs will reach the MCL in all areas of the site. Also, given lithologic variability at the site, the potential for plume migration, and other factors affecting the concentration trends, the time for all COCs to reach the MCL may vary by an order of magnitude or more.

No compliance issues or concerns were noted during the annual LUC inspection for LHAAP-46 conducted on June 23, 2023. LHSMW23 was replaced by LHSMW23R in August 2019. Monitoring well LHSMW21 was added to the monitoring network in place of LHSMW20 due to the persistent dry conditions at LHSMW20. As COCs were detected in LHSMW21, the installation of the downgradient well 46WW17 was completed in June 2020. Intermediate zone monitoring well 46WW14 was added to assess downward migration near shallow well LHSMW21. Wells 46WW14, LHSMW23R, and 46WW17 will continue to be sampled as part of the tenth annual RA-O sampling.

The trend analysis of COC concentrations in wells with sufficient historical data was conducted. In four of the five wells where COCs were observed above the MCL, concentrations are decreasing. At the one monitoring well where COCs have increased recently (LHSMW21), the 2023 TCE concentration (61 µg/L) is the highest concentration that has been detected at that location. The increasing COC concentrations since 2016 suggest that the shallow groundwater plume may be expanding or migrating. MNA with LUCs is still considered an appropriate remedy at this time. The MNA monitoring will continue on an annual basis in the tenth annual RA-O, in accordance with the RACR (AECOM 2015a). The MNA parameter list is shown in the notes in **Table 2-7**. The wells to be sampled during the tenth annual RA-O monitoring event are shown in **Table 2-7** and illustrated on **Figure 2-6**. To gather additional information regarding the potentiometric surface and the extent of dry conditions in the shallow aquifer, groundwater elevations will continue to be measured in LHSMW20 and LHSMW24 during each sampling event, as shown in **Table 2-7**.

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# Tables

## Table 2-1
## Well Maintenance Activities Year 9 RA-O

| Well ID | Date Inspected | Pads | Bollards | Protective Casings | Locks | Date Mowed | Photos | Comments |
|---|---|---|---|---|---|---|---|---|
| 46WW01 | 2/6/2023 | Good | Good | Good | In Place | | Yes | |
| 46WW02 | 2/6/2023 | Good | Good | Good | In Place | | Yes | |
| 46WW03 | 2/6/2023 | Good | Good | Good | In Place | | Yes | |
| 46WW04 | 2/9/2023 | Good | Good | Good | In Place | | Yes | |
| 46WW05 | 2/7/2023 | Good | Good | Good | In Place | | Yes | |
| 46WW06 | 2/9/2023 | Good | Good | Good | In Place | | Yes | |
| 46WW07 | 2/6/2023 | Good | Good | Good | In Place | | Yes | |
| 46WW08 | 2/9/2023 | Good | Good | Good | In Place | | Yes | |
| 46WW09 | 2/7/2023 | Good | Good | Good | In Place | | Yes | |
| 46WW10 | 2/9/2023 | Good | Good | Good | In Place | | Yes | |
| 46WW11 | 2/9/2023 | Good | Good | Good | In Place | | Yes | |
| 46WW12 | 2/6/2023 | Good | Good | Good | In Place | | Yes | |
| 46WW13 | 2/6/2023 | Good | Good | Good | In Place | | Yes | |
| 46WW14 | 2/6/2023 | Good | Good | Good | In Place | | Yes | |
| 46WW15 | 2/9/2023 | Good | Good | Good | In Place | | No | |
| 46WW16 | 2/6/2023 | Good | Good | Good | In Place | | Yes | |
| 46WW17 | 2/9/2023 | Good | Good | Good | In Place | | Yes | |
| LHSMW17 | 2/9/2023 | Good | Good | Good | In Place | | Yes | Paint peeling |
| LHSMW18 | 2/9/2023 | Good | Good | Good | In Place | | Yes | |
| LHSMW19 | 2/9/2023 | Good | Good | Good | In Place | | Yes | |
| LHSMW20 | 2/9/2023 | Good | Good | Good | In Place | | Yes | Paint peeling |
| LHSMW21 | 2/6/2023 | Good | Good | Good | In Place | | Yes | |
| LHSMW22 | 2/6/2023 | Good | Good | Good | In Place | | Yes | Paint peeling |
| LHSMW23R | 2/9/2023 | Good | Good | Good | In Place | | Yes | |
| LHSMW24 | N/A | Good | Good | Good | In Place | | Yes | No inspection form completed, condition assessed from photograph; paint peeling |
| LHSMW25 | 2/9/2023 | Good | Good | Good | In Place | | Yes | |

Notes:

See also Appendix B - Photographic Log and Well Inspection Forms

ID - identifier

N/A - not applicable

RA-O - remedial action operation

## Table 2-2
## Year 9 Annual RA-O Sampling Locations

| Well ID | Groundwater Zone | VOC | Field Parameters | MNA | Water Present? |
|---|---|---|---|---|---|
| 46WW01 | Shallow | X | X | | No |
| 46WW04 | Shallow | X | X | | No |
| 46WW10 | Shallow | X | X | | No |
| 46WW11 | Shallow | X | X | X | Yes |
| 46WW12 | Shallow | X | X | | No |
| 46WW13 | Shallow | X | X | | No |
| 46WW15 | Shallow | X | X | | No |
| 46WW17 | Shallow/ Intermediate | X | X | | Yes |
| LHSMW17 | Shallow | X | X | | No |
| LHSMW18 [a] | Shallow | | | | No |
| LHSMW19 | Shallow | X | X | | Yes |
| LHSMW20 | Shallow | Groundwater Elevation Only | | | No |
| LHSMW21 | Shallow | X | X | X | Yes |
| LHSMW22 | Shallow | X | X | | No |
| LHSMW24 | Shallow | Groundwater Elevation Only | | | No |
| 46WW02 | Intermediate | X | X | X | Yes |
| 46WW05 | Intermediate | X | X | X | Yes |
| 46WW06 | Intermediate | X | X | | Yes |
| 46WW07 | Intermediate | X | X | | Yes |
| 46WW08 | Intermediate | X | X | | Yes |
| 46WW09 | Intermediate | X | X | X | Yes |
| 46WW14 | Intermediate | X | X | | Yes |
| 46WW16 | Intermediate | X | X | X | Yes |
| LHSMW23R | Intermediate | X | X | | Yes |
| LHSMW25 | Intermediate | X | X | | Yes |
| 46WW03 | Deep | X | X | | Yes |
| 46SW10 [b] | Surface Water | X | X | | NS |

Notes:

Field parameters to be monitored for all wells: pH, temperature, conductivity, turbidity, oxidation-reduction potential (ORP), and dissolved oxygen (DO).

MNA parameters include nitrate, sulfate, chloride, TOC, dissolved iron (field), and dissolved gases (methane, ethane, ethene, and carbon dioxide).

[a] LHSMW18 only sampled if LHSMW17 is dry.

[b] 46SW10 is only sampled if surface water is present and the GW elevation at either LHSMW21 or 46WW16 exceeds 197 feet.

X - well will be analyzed for that parameter

GW - groundwater

ID - identification

MNA - monitored natural attenuation

NM - Not measured

NS - not sampled due to water level was below the creek bottom

RA-O - remedial action operation

TOC - total organic carbon

VOC - volatile organic compounds

**Table 2-3**
**Groundwater Elevation Data**

| Well ID | Zone | Sampling Date | Screen Interval (ft BTOC) Top | Screen Interval (ft BTOC) Bottom | Top of Casing Elevation (ft MSL) | Ground Surface Elevation (ft MSL) | Depth to Water (ft BTOC) | Groundwater Elevation (ft MSL) |
|---|---|---|---|---|---|---|---|---|
| 46WW01 | S | 01/16/02 | 17.07 | 27.07 | 212.82 | 209.75 | Dry | Dry |
| | | 03/15/02 | 17.07 | 27.07 | 212.82 | 209.75 | Dry | Dry |
| | | 02/13/05 | 17.07 | 27.07 | 212.82 | 209.75 | 26.00 | 186.82 |
| | | 05/15/05 | 17.07 | 27.07 | 212.82 | 209.75 | Dry | Dry |
| | | 02/19/07 | 17.07 | 27.07 | 212.82 | 209.75 | 22.65 | 190.16 |
| | | 03/16/08 | 17.07 | 27.07 | 212.82 | 209.75 | 25.45 | 187.37 |
| | | 05/15/08 | 17.07 | 27.07 | 212.82 | 209.75 | Dry | Dry |
| | | 10/13/08 | 17.07 | 27.07 | 212.82 | 209.75 | Dry | Dry |
| | | 05/02/13 | 17.07 | 27.07 | 212.82 | 209.75 | 26.00 | 186.82 |
| | | 05/28/13 | 17.07 | 27.07 | 212.82 | 209.75 | Dry | Dry |
| | | 08/10/13 | 17.07 | 27.07 | 212.82 | 209.75 | Dry | Dry |
| | | 09/20/13 | 17.07 | 27.07 | 212.82 | 209.75 | Dry | Dry |
| | | 01/25/14 | 17.07 | 27.07 | 212.82 | 209.75 | Dry | Dry |
| | | 07/15/14 | 17.07 | 27.07 | 212.82 | 209.75 | Dry | Dry |
| | | 11/18/14 | 17.07 | 27.07 | 212.82 | 209.75 | Dry | Dry |
| | | 02/03/15 | 17.07 | 27.07 | 212.82 | 209.75 | Dry | Dry |
| | | 05/05/15 | 17.07 | 27.07 | 212.82 | 209.75 | Dry | Dry |
| | | 08/05/15 | 17.07 | 27.07 | 212.82 | 209.75 | Dry | Dry |
| | | 02/01/16 | 17.07 | 27.07 | 212.82 | 209.75 | Dry | Dry |
| | | 03/28/16 | 17.07 | 27.07 | 212.82 | 209.75 | 24.85 | 187.97 |
| | | 08/03/16 | 17.07 | 27.07 | 212.82 | 209.75 | 25.45 | 187.37 |
| | | 02/20/18 | 17.07 | 27.07 | 212.82 | 209.75 | Dry | Dry |
| | | 08/27/18 | 17.07 | 27.07 | 212.82 | 209.75 | Dry | Dry |
| | | 02/20/19 | 17.07 | 27.07 | 212.82 | 209.75 | Dry | Dry |
| | | 08/12/19 | 17.07 | 27.07 | 212.82 | 209.75 | Dry | Dry |
| | | 02/19/20 | 17.07 | 27.07 | 212.82 | 209.75 | Dry | Dry |
| | | 03/18/21 | 17.07 | 27.07 | 212.82 | 209.75 | Dry | Dry |
| | | 02/14/22 | 17.07 | 27.07 | 212.82 | 209.75 | Dry | Dry |
| | | 02/06/23 | 17.07 | 27.07 | 212.82 | 209.75 | Dry | Dry |
| 46WW02 | I | 01/16/02 | 38.05 | 48.05 | 212.21 | 209.16 | 37.11 | 175.10 |
| | | 05/15/02 | 38.05 | 48.05 | 212.21 | 209.16 | 37.30 | 174.91 |
| | | 02/13/05 | 38.05 | 48.05 | 212.21 | 209.16 | 35.90 | 176.31 |
| | | 06/15/05 | 38.05 | 48.05 | 212.21 | 209.16 | 37.00 | 175.21 |
| | | 02/20/07 | 38.05 | 48.05 | 212.21 | 209.16 | 31.49 | 180.72 |
| | | 04/07/08 | 38.05 | 48.05 | 212.21 | 209.16 | 32.30 | 179.91 |
| | | 04/16/08 | 38.05 | 48.05 | 212.21 | 209.16 | 37.25 | 174.96 |
| | | 05/15/08 | 38.05 | 48.05 | 212.21 | 209.16 | 37.03 | 175.18 |
| | | 05/02/13 | 38.05 | 48.05 | 212.21 | 209.16 | 35.90 | 176.31 |
| | | 05/28/13 | 38.05 | 48.05 | 212.21 | 209.16 | 35.85 | 176.36 |
| | | 08/14/13 | 38.05 | 48.05 | 212.21 | 209.16 | 36.15 | 176.06 |
| | | 08/17/13 | 38.05 | 48.05 | 212.21 | 209.16 | 36.20 | 176.01 |
| | | 09/19/13 | 38.05 | 48.05 | 212.21 | 209.16 | 36.33 | 175.88 |
| | | 01/27/14 | 38.05 | 48.05 | 212.21 | 209.16 | 36.52 | 175.69 |
| | | 07/15/14 | 38.05 | 48.05 | 212.21 | 209.16 | 36.63 | 175.58 |
| | | 11/18/14 | 38.05 | 48.05 | 212.21 | 209.16 | 37.37 | 174.84 |
| | | 02/05/15 | 38.05 | 48.05 | 212.21 | 209.16 | 37.30 | 174.91 |
| | | 05/06/15 | 38.05 | 48.05 | 212.21 | 209.16 | 37.00 | 175.21 |
| | | 08/05/15 | 38.05 | 48.05 | 212.21 | 209.16 | 37.03 | 175.18 |

**Table 2-3**
**Groundwater Elevation Data**

| Well ID | Zone | Sampling Date | Screen Interval (ft BTOC) Top | Screen Interval (ft BTOC) Bottom | Top of Casing Elevation (ft MSL) | Ground Surface Elevation (ft MSL) | Depth to Water (ft BTOC) | Groundwater Elevation (ft MSL) |
|---|---|---|---|---|---|---|---|---|
| 46WW02 | I | 02/01/16 | 38.05 | 48.05 | 212.21 | 209.16 | 37.11 | 175.10 |
| | | 08/04/16 | 38.05 | 48.05 | 212.21 | 209.16 | 37.25 | 174.96 |
| | | 02/20/18 | 38.05 | 48.05 | 212.21 | 209.16 | 37.76 | 174.45 |
| | | 08/29/18 | 38.05 | 48.05 | 212.21 | 209.16 | 38.25 | 173.96 |
| | | 02/21/19 | 38.05 | 48.05 | 212.21 | 209.16 | 46WW02 contained water and a sample was collected. The sample collection log was misplaced and no water level information is available. | |
| | | 08/12/19 | 38.05 | 48.05 | 212.21 | 209.16 | 38.23 | 173.98 |
| | | 02/13/20 | 38.05 | 48.05 | 212.21 | 209.16 | 38.74 | 173.47 |
| | | 03/16/21 | 38.05 | 48.05 | 212.21 | 209.16 | 38.57 | 173.64 |
| | | 02/15/22 | 38.05 | 48.05 | 212.21 | 209.16 | 39.10 | 173.11 |
| | | 02/06/23 | 38.05 | 48.05 | 212.21 | 209.16 | 39.33 | 172.88 |
| 46WW03 | D | 03/16/02 | 92.67 | 102.67 | 212.47 | 209.80 | 40.69 | 171.78 |
| | | 05/15/02 | 92.67 | 102.67 | 212.47 | 209.80 | 40.60 | 171.87 |
| | | 06/15/05 | 92.67 | 102.67 | 212.47 | 209.80 | 40.32 | 172.15 |
| | | 04/16/08 | 92.67 | 102.67 | 212.47 | 209.80 | 40.77 | 171.70 |
| | | 05/15/08 | 92.67 | 102.67 | 212.47 | 209.80 | 40.71 | 171.76 |
| | | 05/30/13 | 92.67 | 102.67 | 212.47 | 209.80 | 39.81 | 172.66 |
| | | 08/17/13 | 92.67 | 102.67 | 212.47 | 209.80 | 40.34 | 172.13 |
| | | 09/26/13 | 92.67 | 102.67 | 212.47 | 209.80 | 46.48 | 165.99 |
| | | 01/25/14 | 92.67 | 102.67 | 212.47 | 209.80 | 40.61 | 171.86 |
| | | 07/17/14 | 92.67 | 102.67 | 212.47 | 209.80 | 40.47 | 172.00 |
| | | 11/20/14 | 92.67 | 102.67 | 212.47 | 209.80 | 41.00 | 171.47 |
| | | 02/05/15 | 92.67 | 102.67 | 212.47 | 209.80 | 40.60 | 171.87 |
| | | 05/06/15 | 92.67 | 102.67 | 212.47 | 209.80 | 40.32 | 172.15 |
| | | 08/05/15 | 92.67 | 102.67 | 212.47 | 209.80 | 40.71 | 171.76 |
| | | 02/03/16 | 92.67 | 102.67 | 212.47 | 209.80 | 40.69 | 171.78 |
| | | 08/04/16 | 92.67 | 102.67 | 212.47 | 209.80 | 40.77 | 171.70 |
| | | 02/26/18 | 92.67 | 102.67 | 212.47 | 209.80 | 41.47 | 171.00 |
| | | 08/27/18 | 92.67 | 102.67 | 212.47 | 209.80 | 42.05 | 170.42 |
| | | 02/20/19 | 92.67 | 102.67 | 212.47 | 209.80 | 41.20 | 171.27 |
| | | 08/12/19 | 92.67 | 102.67 | 212.47 | 209.80 | 41.19 | 171.28 |
| | | 02/19/20 | 92.67 | 102.67 | 212.47 | 209.80 | 41.75 | 170.72 |
| | | 03/18/21 | 92.67 | 102.67 | 212.47 | 209.80 | 41.50 | 170.97 |
| | | 02/15/22 | 92.67 | 102.67 | 212.47 | 209.80 | 41.93 | 170.54 |
| | | 02/06/23 | 92.67 | 102.67 | 212.47 | 209.80 | 42.78 | 169.69 |
| 46WW04 | S | 02/16/02 | 16.92 | 26.92 | 215.39 | 212.47 | 25.67 | 189.72 |
| | | 03/15/02 | 16.92 | 26.92 | 215.39 | 212.47 | Dry | Dry |
| | | 02/13/05 | 16.92 | 26.92 | 215.39 | 212.47 | 24.86 | 190.53 |
| | | 05/15/05 | 16.92 | 26.92 | 215.39 | 212.47 | 24.48 | 190.91 |
| | | 02/19/07 | 16.92 | 26.92 | 215.39 | 212.47 | 21.31 | 194.08 |
| | | 03/16/08 | 16.92 | 26.92 | 215.39 | 212.47 | 25.04 | 190.35 |
| | | 04/15/08 | 16.92 | 26.92 | 215.39 | 212.47 | 24.13 | 191.26 |
| | | 09/13/08 | 16.92 | 26.92 | 215.39 | 212.47 | 25.48 | 189.91 |
| | | 05/02/13 | 16.92 | 26.92 | 215.39 | 212.47 | 24.86 | 190.53 |
| | | 05/24/13 | 16.92 | 26.92 | 215.39 | 212.47 | 24.90 | 190.49 |
| | | 08/09/13 | 16.92 | 26.92 | 215.39 | 212.47 | 25.48 | 189.91 |
| | | 09/20/13 | 16.92 | 26.92 | 215.39 | 212.47 | 26.00 | 189.39 |

**Table 2-3**
**Groundwater Elevation Data**

| Well ID | Zone | Sampling Date | Screen Interval (ft BTOC) Top | Screen Interval (ft BTOC) Bottom | Top of Casing Elevation (ft MSL) | Ground Surface Elevation (ft MSL) | Depth to Water (ft BTOC) | Groundwater Elevation (ft MSL) |
|---|---|---|---|---|---|---|---|---|
| 46WW04 | S | 01/25/14 | 16.92 | 26.92 | 215.39 | 212.47 | 25.90 | 189.49 |
| | | 07/17/14 | 16.92 | 26.92 | 215.39 | 212.47 | 24.68 | 190.71 |
| | | 11/19/14 | 16.92 | 26.92 | 215.39 | 212.47 | 26.00 | 189.39 |
| | | 02/03/15 | 16.92 | 26.92 | 215.39 | 212.47 | Dry | Dry |
| | | 05/05/15 | 16.92 | 26.92 | 215.39 | 212.47 | 24.48 | 190.91 |
| | | 08/04/15 | 16.92 | 26.92 | 215.39 | 212.47 | 24.13 | 191.26 |
| | | 02/02/16 | 16.92 | 26.92 | 215.39 | 212.47 | 25.67 | 189.72 |
| | | 08/03/16 | 16.92 | 26.92 | 215.39 | 212.47 | 25.04 | 190.35 |
| | | 02/22/18 | 16.92 | 26.92 | 215.39 | 212.47 | Dry | Dry |
| | | 08/29/18 | 16.92 | 26.92 | 215.39 | 212.47 | Dry | Dry |
| | | 02/20/19 | 16.92 | 26.92 | 215.39 | 212.47 | Dry | Dry |
| | | 08/13/19 | 16.92 | 26.92 | 215.39 | 212.47 | Dry | Dry |
| | | 02/18/20 | 16.92 | 26.92 | 215.39 | 212.47 | Dry | Dry |
| | | 03/15/21 | 16.92 | 26.92 | 215.39 | 212.47 | Dry | Dry |
| | | 02/13/22 | 16.92 | 26.92 | 215.39 | 212.47 | 26.4 | 188.99 |
| | | 02/09/23 | 16.92 | 26.92 | 215.39 | 212.47 | Dry | Dry |
| 46WW05 | I | 01/16/02 | 36.65 | 46.65 | 208.24 | 205.59 | 38.08 | 170.16 |
| | | 05/15/02 | 36.65 | 46.65 | 208.24 | 205.59 | 37.45 | 170.79 |
| | | 05/15/05 | 36.65 | 46.65 | 208.24 | 205.59 | 38.03 | 170.21 |
| | | 03/16/08 | 36.65 | 46.65 | 208.24 | 205.59 | 38.35 | 169.89 |
| | | 06/15/08 | 36.65 | 46.65 | 208.24 | 205.59 | 37.05 | 171.19 |
| | | 05/30/13 | 36.65 | 46.65 | 208.24 | 205.59 | 37.25 | 170.99 |
| | | 08/14/13 | 36.65 | 46.65 | 208.24 | 205.59 | 37.65 | 170.59 |
| | | 08/17/13 | 36.65 | 46.65 | 208.24 | 205.59 | 37.73 | 170.51 |
| | | 09/24/13 | 36.65 | 46.65 | 208.24 | 205.59 | 37.75 | 170.49 |
| | | 01/28/14 | 36.65 | 46.65 | 208.24 | 205.59 | 38.20 | 170.04 |
| | | 07/16/14 | 36.65 | 46.65 | 208.24 | 205.59 | 37.83 | 170.41 |
| | | 11/19/14 | 36.65 | 46.65 | 208.24 | 205.59 | 38.48 | 169.76 |
| | | 02/05/15 | 36.65 | 46.65 | 208.24 | 205.59 | 37.45 | 170.79 |
| | | 05/05/15 | 36.65 | 46.65 | 208.24 | 205.59 | 38.03 | 170.21 |
| | | 08/06/15 | 36.65 | 46.65 | 208.24 | 205.59 | 37.05 | 171.19 |
| | | 02/01/16 | 36.65 | 46.65 | 208.24 | 205.59 | 38.08 | 170.16 |
| | | 08/03/16 | 36.65 | 46.65 | 208.24 | 205.59 | 38.35 | 169.89 |
| | | 02/26/18 | 36.65 | 46.65 | 208.24 | 205.59 | 39.03 | 169.21 |
| | | 08/28/18 | 36.65 | 46.65 | 208.24 | 205.59 | 39.25 | 168.99 |
| | | 02/25/19 | 36.65 | 46.65 | 208.24 | 205.59 | 39.14 | 169.10 |
| | | 08/13/19 | 36.65 | 46.65 | 208.24 | 205.59 | 38.45 | 169.79 |
| | | 02/13/20 | 36.65 | 46.65 | 208.24 | 205.59 | 39.32 | 168.92 |
| | | 03/16/21 | 36.65 | 46.65 | 208.24 | 205.59 | 39.00 | 169.24 |
| | | 02/15/22 | 36.65 | 46.65 | 208.24 | 205.59 | 39.65 | 168.59 |
| | | 02/07/23 | 36.65 | 46.65 | 208.24 | 205.59 | 40.05 | 168.19 |
| 46WW06 | I | 02/16/02 | 40.60 | 50.60 | 213.84 | 211.24 | 39.76 | 174.08 |
| | | 06/15/02 | 40.60 | 50.60 | 213.84 | 211.24 | 39.93 | 173.91 |
| | | 01/15/05 | 40.60 | 50.60 | 213.84 | 211.24 | 39.91 | 173.93 |
| | | 04/15/08 | 40.60 | 50.60 | 213.84 | 211.24 | 39.90 | 173.94 |
| | | 04/16/08 | 40.60 | 50.60 | 213.84 | 211.24 | 40.23 | 173.61 |
| | | 05/24/13 | 40.60 | 50.60 | 213.84 | 211.24 | 38.98 | 174.86 |
| | | 08/16/13 | 40.60 | 50.60 | 213.84 | 211.24 | 39.12 | 174.72 |
| | | 09/25/13 | 40.60 | 50.60 | 213.84 | 211.24 | 39.10 | 174.74 |

**Table 2-3**
**Groundwater Elevation Data**

| Well ID | Zone | Sampling Date | Screen Interval (ft BTOC) Top | Screen Interval (ft BTOC) Bottom | Top of Casing Elevation (ft MSL) | Ground Surface Elevation (ft MSL) | Depth to Water (ft BTOC) | Groundwater Elevation (ft MSL) |
|---|---|---|---|---|---|---|---|---|
| 46WW06 | I | 01/25/14 | 40.60 | 50.60 | 213.84 | 211.24 | 39.28 | 174.56 |
| | | 07/17/14 | 40.60 | 50.60 | 213.84 | 211.24 | 39.55 | 174.29 |
| | | 11/19/14 | 40.60 | 50.60 | 213.84 | 211.24 | 39.91 | 173.93 |
| | | 02/06/15 | 40.60 | 50.60 | 213.84 | 211.24 | 39.93 | 173.91 |
| | | 05/01/15 | 40.60 | 50.60 | 213.84 | 211.24 | 39.91 | 173.93 |
| | | 08/04/15 | 40.60 | 50.60 | 213.84 | 211.24 | 39.90 | 173.94 |
| | | 02/02/16 | 40.60 | 50.60 | 213.84 | 211.24 | 39.76 | 174.08 |
| | | 08/04/16 | 40.60 | 50.60 | 213.84 | 211.24 | 40.23 | 173.61 |
| | | 02/26/18 | 40.60 | 50.60 | 213.84 | 211.24 | 39.91 | 173.93 |
| | | 08/27/18 | 40.60 | 50.60 | 213.84 | 211.24 | 41.10 | 172.74 |
| | | 02/20/19 | 40.60 | 50.60 | 213.84 | 211.24 | 41.05 | 172.79 |
| | | 08/13/19 | 40.60 | 50.60 | 213.84 | 211.24 | 39.80 | 174.04 |
| | | 02/18/20 | 40.60 | 50.60 | 213.84 | 211.24 | 41.77 | 172.07 |
| | | 03/15/21 | 40.60 | 50.60 | 213.84 | 211.24 | 41.55 | 172.29 |
| | | 02/13/22 | 40.60 | 50.60 | 213.84 | 211.24 | 42.12 | 171.72 |
| | | 02/09/23 | 40.60 | 50.60 | 213.84 | 211.24 | 42.30 | 171.54 |
| 46WW07 | I | 02/16/02 | 41.50 | 51.00 | 207.87 | 205.37 | 35.70 | 172.17 |
| | | 03/15/02 | 41.50 | 51.00 | 207.87 | 205.37 | 35.95 | 171.92 |
| | | 01/15/05 | 41.50 | 51.00 | 207.87 | 205.37 | 35.62 | 172.25 |
| | | 02/16/08 | 41.50 | 51.00 | 207.87 | 205.37 | 35.96 | 171.91 |
| | | 04/15/08 | 41.50 | 51.00 | 207.87 | 205.37 | 35.68 | 172.19 |
| | | 05/25/13 | 41.50 | 51.00 | 207.87 | 205.37 | 35.28 | 172.59 |
| | | 08/16/13 | 41.50 | 51.00 | 207.87 | 205.37 | 35.60 | 172.27 |
| | | 09/19/13 | 41.50 | 51.00 | 207.87 | 205.37 | 35.70 | 172.17 |
| | | 01/27/14 | 41.50 | 51.00 | 207.87 | 205.37 | 36.72 | 171.15 |
| | | 07/18/14 | 41.50 | 51.00 | 207.87 | 205.37 | 35.47 | 172.40 |
| | | 11/19/14 | 41.50 | 51.00 | 207.87 | 205.37 | 36.25 | 171.62 |
| | | 02/03/15 | 41.50 | 51.00 | 207.87 | 205.37 | 35.95 | 171.92 |
| | | 05/01/15 | 41.50 | 51.00 | 207.87 | 205.37 | 35.62 | 172.25 |
| | | 08/04/15 | 41.50 | 51.00 | 207.87 | 205.37 | 35.68 | 172.19 |
| | | 02/02/16 | 41.50 | 51.00 | 207.87 | 205.37 | 35.70 | 172.17 |
| | | 08/02/16 | 41.50 | 51.00 | 207.87 | 205.37 | 35.96 | 171.91 |
| | | 03/23/18 | 41.50 | 51.00 | 207.87 | 205.37 | 36.77 | 171.10 |
| | | 08/27/18 | 41.50 | 51.00 | 207.87 | 205.37 | 31.15 | 176.72 |
| | | 02/20/19 | 41.50 | 51.00 | 207.87 | 205.37 | 36.51 | 171.36 |
| | | 08/12/19 | 41.50 | 51.00 | 207.87 | 205.37 | 36.42 | 171.45 |
| | | 02/18/20 | 41.50 | 51.00 | 207.87 | 205.37 | 36.81 | 171.06 |
| | | 03/18/21 | 41.50 | 51.00 | 207.87 | 205.37 | 36.68 | 171.19 |
| | | 02/11/22 | 41.50 | 51.00 | 207.87 | 205.37 | 36.76 | 171.11 |
| | | 02/06/23 | 41.50 | 51.00 | 207.87 | 205.37 | 37.90 | 169.97 |
| 46WW08 | I | 05/25/13 | 35.72 | 45.22 | 211.73 | 209.51 | 21.35 | 190.38 |
| | | 08/16/13 | 35.72 | 45.22 | 211.73 | 209.51 | 21.55 | 190.18 |
| | | 09/21/13 | 35.72 | 45.22 | 211.73 | 209.51 | 21.75 | 189.98 |
| | | 01/28/14 | 35.72 | 45.22 | 211.73 | 209.51 | 21.85 | 189.88 |

**Table 2-3**
**Groundwater Elevation Data**

| Well ID | Zone | Sampling Date | Screen Interval (ft BTOC) Top | Screen Interval (ft BTOC) Bottom | Top of Casing Elevation (ft MSL) | Ground Surface Elevation (ft MSL) | Depth to Water (ft BTOC) | Groundwater Elevation (ft MSL) |
|---|---|---|---|---|---|---|---|---|
| 46WW08 | I | 07/18/14 | 35.72 | 45.22 | 211.73 | 209.51 | 21.30 | 190.43 |
| | | 11/20/14 | 35.72 | 45.22 | 211.73 | 209.51 | 22.06 | 189.67 |
| | | 02/03/15 | 35.72 | 45.22 | 211.73 | 209.51 | 21.85 | 189.88 |
| | | 05/01/15 | 35.72 | 45.22 | 211.73 | 209.51 | 20.94 | 190.79 |
| | | 08/04/15 | 35.72 | 45.22 | 211.73 | 209.51 | 21.02 | 190.71 |
| | | 02/03/16 | 35.72 | 45.22 | 211.73 | 209.51 | 21.75 | 189.98 |
| | | 08/02/16 | 35.72 | 45.22 | 211.73 | 209.51 | 21.37 | 190.36 |
| | | 02/23/18 | 35.72 | 45.22 | 211.73 | 209.51 | 22.43 | 189.30 |
| | | 08/27/18 | 35.72 | 45.22 | 211.73 | 209.51 | 22.76 | 188.97 |
| | | 02/20/19 | 35.72 | 45.22 | 211.73 | 209.51 | 22.00 | 189.73 |
| | | 08/13/19 | 35.72 | 45.22 | 211.73 | 209.51 | 20.59 | 191.14 |
| | | 02/18/20 | 35.72 | 45.22 | 211.73 | 209.51 | 22.15 | 189.58 |
| | | 03/15/21 | 35.72 | 45.22 | 211.73 | 209.51 | 21.55 | 190.18 |
| | | 02/13/22 | 35.72 | 45.22 | 211.73 | 209.51 | 22.56 | 189.17 |
| | | 02/09/23 | 35.72 | 45.22 | 211.73 | 209.51 | 22.92 | 188.81 |
| 46WW09 | I | 05/30/13 | 31.48 | 40.98 | 210.19 | 207.71 | 34.50 | 175.69 |
| | | 08/13/13 | 31.48 | 40.98 | 210.19 | 207.71 | 36.95 | 173.24 |
| | | 08/17/13 | 31.48 | 40.98 | 210.19 | 207.71 | 36.03 | 174.16 |
| | | 09/24/13 | 31.48 | 40.98 | 210.19 | 207.71 | 32.50 | 177.69 |
| | | 01/27/14 | 31.48 | 40.98 | 210.19 | 207.71 | 33.05 | 177.14 |
| | | 07/15/14 | 31.48 | 40.98 | 210.19 | 207.71 | 38.18 | 172.01 |
| | | 11/19/14 | 31.48 | 40.98 | 210.19 | 207.71 | 36.99 | 173.20 |
| | | 02/05/15 | 31.48 | 40.98 | 210.19 | 207.71 | 35.90 | 174.29 |
| | | 05/05/15 | 31.48 | 40.98 | 210.19 | 207.71 | 36.55 | 173.64 |
| | | 08/06/15 | 31.48 | 40.98 | 210.19 | 207.71 | 37.47 | 172.72 |
| | | 02/02/16 | 31.48 | 40.98 | 210.19 | 207.71 | 37.35 | 172.84 |
| | | 08/03/16 | 31.48 | 40.98 | 210.19 | 207.71 | 37.83 | 172.36 |
| | | 02/22/18 | 31.48 | 40.98 | 210.19 | 207.71 | 38.65 | 171.54 |
| | | 08/28/18 | 31.48 | 40.98 | 210.19 | 207.71 | 38.81 | 171.38 |
| | | 02/25/19 | 31.48 | 40.98 | 210.19 | 207.71 | 38.81 | 171.38 |
| | | 08/12/19 | 31.48 | 40.98 | 210.19 | 207.71 | 38.40 | 171.79 |
| | | 02/13/20 | 31.48 | 40.98 | 210.19 | 207.71 | 38.95 | 171.24 |
| | | 03/16/21 | 31.48 | 40.98 | 210.19 | 207.71 | 38.60 | 171.59 |
| | | 02/15/22 | 31.48 | 40.98 | 210.19 | 207.71 | 39.15 | 171.04 |
| | | 02/07/23 | 31.48 | 40.98 | 210.19 | 207.71 | 39.92 | 170.27 |
| 46WW10 | S | 2/16/2002 | 14.19 | 23.69 | 213.69 | 211.40 | 24.08 | 189.61 |
| | | 3/15/2002 | 14.19 | 23.69 | 213.69 | 211.40 | 23.95 | 189.74 |
| | | 5/15/2005 | 14.19 | 23.69 | 213.69 | 211.40 | 23.80 | 189.89 |
| | | 3/16/2008 | 14.19 | 23.69 | 213.69 | 211.40 | 24.17 | 189.52 |
| | | 4/15/2008 | 14.19 | 23.69 | 213.69 | 211.40 | 23.57 | 190.12 |
| | | 9/13/2008 | 14.19 | 23.69 | 213.69 | 211.40 | 22.00 | 191.69 |
| | | 05/24/13 | 14.19 | 23.69 | 213.69 | 211.40 | 23.20 | 190.49 |
| | | 08/09/13 | 14.19 | 23.69 | 213.69 | 211.40 | 22.00 | 191.69 |
| | | 09/20/13 | 14.19 | 23.69 | 213.69 | 211.40 | 23.42 | 190.27 |

**Table 2-3**
**Groundwater Elevation Data**

| Well ID | Zone | Sampling Date | Screen Interval (ft BTOC) Top | Screen Interval (ft BTOC) Bottom | Top of Casing Elevation (ft MSL) | Ground Surface Elevation (ft MSL) | Depth to Water (ft BTOC) | Groundwater Elevation (ft MSL) |
|---|---|---|---|---|---|---|---|---|
| 46WW10 | S | 01/25/14 | 14.19 | 23.69 | 213.69 | 211.40 | 23.61 | 190.08 |
| | | 07/17/14 | 14.19 | 23.69 | 213.69 | 211.40 | 23.57 | 190.12 |
| | | 11/19/14 | 14.19 | 23.69 | 213.69 | 211.40 | 23.83 | 189.86 |
| | | 02/03/15 | 14.19 | 23.69 | 213.69 | 211.40 | 23.95 | 189.74 |
| | | 05/05/15 | 14.19 | 23.69 | 213.69 | 211.40 | 23.80 | 189.89 |
| | | 08/04/15 | 14.19 | 23.69 | 213.69 | 211.40 | 23.57 | 190.12 |
| | | 02/02/16 | 14.19 | 23.69 | 213.69 | 211.40 | 24.08 | 189.61 |
| | | 08/03/16 | 14.19 | 23.69 | 213.69 | 211.40 | 24.17 | 189.52 |
| | | 02/22/18 | 14.19 | 23.69 | 213.69 | 211.40 | Dry | Dry |
| | | 08/29/18 | 14.19 | 23.69 | 213.69 | 211.40 | Dry | Dry |
| | | 02/20/19 | 14.19 | 23.69 | 213.69 | 211.40 | Dry | Dry |
| | | 08/13/19 | 14.19 | 23.69 | 213.69 | 211.40 | Dry | Dry |
| | | 02/18/20 | 14.19 | 23.69 | 213.69 | 211.40 | Dry | Dry |
| | | 03/15/21 | 14.19 | 23.69 | 213.69 | 211.40 | Dry | Dry |
| | | 02/13/22 | 14.19 | 23.69 | 213.69 | 211.40 | 24.55 | 189.14 |
| | | 02/09/23 | 14.19 | 23.69 | 213.69 | 211.40 | Dry | Dry |
| 46WW11 | S | 1/16/2002 | 22.25 | 32.25 | 212.22 | 209.97 | 25.25 | 186.97 |
| | | 4/15/2002 | 22.25 | 32.25 | 212.22 | 209.97 | 25.37 | 186.85 |
| | | 6/15/2005 | 22.25 | 32.25 | 212.22 | 209.97 | 24.48 | 187.74 |
| | | 3/16/2008 | 22.25 | 32.25 | 212.22 | 209.97 | 25.02 | 187.20 |
| | | 5/15/2008 | 22.25 | 32.25 | 212.22 | 209.97 | 24.37 | 187.85 |
| | | 05/25/13 | 22.25 | 32.25 | 212.22 | 209.97 | Dry | Dry |
| | | 08/14/13 | 22.25 | 32.25 | 212.22 | 209.97 | 25.63 | 186.59 |
| | | 09/19/13 | 22.25 | 32.25 | 212.22 | 209.97 | 25.98 | 186.24 |
| | | 01/28/14 | 22.25 | 32.25 | 212.22 | 209.97 | 25.35 | 186.87 |
| | | 07/16/14 | 22.25 | 32.25 | 212.22 | 209.97 | 24.76 | 187.46 |
| | | 11/18/14 | 22.25 | 32.25 | 212.22 | 209.97 | 25.80 | 186.42 |
| | | 02/04/15 | 22.25 | 32.25 | 212.22 | 209.97 | 25.37 | 186.85 |
| | | 05/06/15 | 22.25 | 32.25 | 212.22 | 209.97 | 24.48 | 187.74 |
| | | 08/05/15 | 22.25 | 32.25 | 212.22 | 209.97 | 24.37 | 187.85 |
| | | 02/01/16 | 22.25 | 32.25 | 212.22 | 209.97 | 25.25 | 186.97 |
| | | 08/03/16 | 22.25 | 32.25 | 212.22 | 209.97 | 25.02 | 187.20 |
| | | 02/20/18 | 22.25 | 32.25 | 212.22 | 209.97 | 25.95 | 186.27 |
| | | 08/29/18 | 22.25 | 32.25 | 212.22 | 209.97 | 27.30 | 184.92 |
| | | 02/21/19 | 22.25 | 32.25 | 212.22 | 209.97 | 46WW11 contained water and a sample was collected. The sample collection log was misplaced and no water level information is available. | |
| | | 08/12/19 | 22.25 | 32.25 | 212.22 | 209.97 | 24.62 | 187.60 |
| | | 02/13/20 | 22.25 | 32.25 | 212.22 | 209.97 | 25.72 | 186.50 |
| | | 03/16/21 | 22.25 | 32.25 | 212.22 | 209.97 | 25.22 | 187.00 |
| | | 02/14/22 | 22.25 | 32.25 | 212.22 | 209.97 | 25.60 | 186.62 |
| | | 02/09/23 | 22.25 | 32.25 | 212.22 | 209.97 | 27.00 | 185.22 |
| 46WW12 | S | 1/16/2002 | 18.97 | 28.47 | 209.57 | 207.10 | Dry | Dry |
| | | 3/15/2002 | 18.97 | 28.47 | 209.57 | 207.10 | Dry | Dry |
| | | 5/15/2005 | 18.97 | 28.47 | 209.57 | 207.10 | Dry | Dry |
| | | 4/15/2008 | 18.97 | 28.47 | 209.57 | 207.10 | Dry | Dry |
| | | 4/16/2008 | 18.97 | 28.47 | 209.57 | 207.10 | Dry | Dry |
| | | 10/13/2008 | 18.97 | 28.47 | 209.57 | 207.10 | Dry | Dry |

**Table 2-3**
**Groundwater Elevation Data**

| Well ID | Zone | Sampling Date | Screen Interval (ft BTOC) Top | Screen Interval (ft BTOC) Bottom | Top of Casing Elevation (ft MSL) | Ground Surface Elevation (ft MSL) | Depth to Water (ft BTOC) | Groundwater Elevation (ft MSL) |
|---|---|---|---|---|---|---|---|---|
| 46WW12 | S | 05/28/13 | 18.97 | 28.47 | 209.57 | 207.10 | Dry | Dry |
| | | 08/10/13 | 18.97 | 28.47 | 209.57 | 207.10 | Dry | Dry |
| | | 09/20/13 | 18.97 | 28.47 | 209.57 | 207.10 | Dry | Dry |
| | | 01/25/14 | 18.97 | 28.47 | 209.57 | 207.10 | Dry | Dry |
| | | 07/15/14 | 18.97 | 28.47 | 209.57 | 207.10 | Dry | Dry |
| | | 11/19/14 | 18.97 | 28.47 | 209.57 | 207.10 | Dry | Dry |
| | | 02/03/15 | 18.97 | 28.47 | 209.57 | 207.10 | Dry | Dry |
| | | 05/05/15 | 18.97 | 28.47 | 209.57 | 207.10 | Dry | Dry |
| | | 08/04/15 | 18.97 | 28.47 | 209.57 | 207.10 | Dry | Dry |
| | | 02/01/16 | 18.97 | 28.47 | 209.57 | 207.10 | Dry | Dry |
| | | 08/04/16 | 18.97 | 28.47 | 209.57 | 207.10 | Dry | Dry |
| | | 02/20/18 | 18.97 | 28.47 | 209.57 | 207.10 | Dry | Dry |
| | | 08/27/18 | 18.97 | 28.47 | 209.57 | 207.10 | Dry | Dry |
| | | 02/20/19 | 18.97 | 28.47 | 209.57 | 207.10 | Dry | Dry |
| | | 08/13/19 | 18.97 | 28.47 | 209.57 | 207.10 | Dry | Dry |
| | | 02/18/20 | 18.97 | 28.47 | 209.57 | 207.10 | Dry | Dry |
| | | 03/15/21 | 18.97 | 28.47 | 209.57 | 207.10 | Dry | Dry |
| | | 02/11/22 | 18.97 | 28.47 | 209.57 | 207.10 | Dry | Dry |
| | | 02/06/23 | 18.97 | 28.47 | 209.57 | 207.10 | Dry | Dry |
| 46WW13 | S | 1/16/2002 | 21.42 | 30.92 | 208.38 | 205.96 | Dry | Dry |
| | | 3/15/2002 | 21.42 | 30.92 | 208.38 | 205.96 | Dry | Dry |
| | | 5/15/2005 | 21.42 | 30.92 | 208.38 | 205.96 | Dry | Dry |
| | | 4/16/2008 | 21.42 | 30.92 | 208.38 | 205.96 | Dry | Dry |
| | | 5/15/2008 | 21.42 | 30.92 | 208.38 | 205.96 | Dry | Dry |
| | | 05/28/13 | 21.42 | 30.92 | 208.38 | 205.96 | 30.05 | 178.33 |
| | | 08/13/13 | 21.42 | 30.92 | 208.38 | 205.96 | 30.20 | 178.18 |
| | | 09/23/13 | 21.42 | 30.92 | 208.38 | 205.96 | 30.35 | 178.03 |
| | | 01/27/14 | 21.42 | 30.92 | 208.38 | 205.96 | Dry | Dry |
| | | 07/15/14 | 21.42 | 30.92 | 208.38 | 205.96 | Dry | Dry |
| | | 11/19/14 | 21.42 | 30.92 | 208.38 | 205.96 | Dry | Dry |
| | | 02/03/15 | 21.42 | 30.92 | 208.38 | 205.96 | Dry | Dry |
| | | 05/05/15 | 21.42 | 30.92 | 208.38 | 205.96 | Dry | Dry |
| | | 08/05/15 | 21.42 | 30.92 | 208.38 | 205.96 | Dry | Dry |
| | | 02/01/16 | 21.42 | 30.92 | 208.38 | 205.96 | Dry | Dry |
| | | 08/04/16 | 21.42 | 30.92 | 208.38 | 205.96 | Dry | Dry |
| | | 02/20/18 | 21.42 | 30.92 | 208.38 | 205.96 | Dry | Dry |
| | | 08/27/18 | 21.42 | 30.92 | 208.38 | 205.96 | Dry | Dry |
| | | 02/20/19 | 21.42 | 30.92 | 208.38 | 205.96 | Dry | Dry |
| | | 08/13/19 | 21.42 | 30.92 | 208.38 | 205.96 | Dry | Dry |
| | | 02/18/20 | 21.42 | 30.92 | 208.38 | 205.96 | Dry | Dry |
| | | 03/15/21 | 21.42 | 30.92 | 208.38 | 205.96 | Dry | Dry |
| | | 02/11/22 | 21.42 | 30.92 | 208.38 | 205.96 | Dry | Dry |
| | | 02/06/23 | 21.42 | 30.92 | 208.38 | 205.96 | Dry | Dry |
| 46WW14 | I | 03/15/21 | 44.60 | 54.10 | 204.40 | 201.80 | 33.15 | 171.25 |
| | | 02/11/22 | 44.60 | 54.10 | 204.40 | 201.80 | 33.39 | 171.01 |
| | | 02/06/23 | 44.60 | 54.10 | 204.40 | 201.80 | 34.35 | 170.05 |
| 46WW15 | S | 05/29/13 | 20.45 | 29.95 | 206.96 | 205.01 | Dry | Dry |
| | | 08/10/13 | 20.45 | 29.95 | 206.96 | 205.01 | Dry | Dry |
| | | 09/24/13 | 20.45 | 29.95 | 206.96 | 205.01 | Dry | Dry |
| | | 01/25/14 | 20.45 | 29.95 | 206.96 | 205.01 | Dry | Dry |

**Table 2-3**
**Groundwater Elevation Data**

| Well ID | Zone | Sampling Date | Screen Interval (ft BTOC) Top | Screen Interval (ft BTOC) Bottom | Top of Casing Elevation (ft MSL) | Ground Surface Elevation (ft MSL) | Depth to Water (ft BTOC) | Groundwater Elevation (ft MSL) |
|---|---|---|---|---|---|---|---|---|
| 46WW15 | S | 07/15/14 | 20.45 | 29.95 | 206.96 | 205.01 | Dry | Dry |
| | | 11/19/14 | 20.45 | 29.95 | 206.96 | 205.01 | Dry | Dry |
| | | 02/03/15 | 20.45 | 29.95 | 206.96 | 205.01 | Dry | Dry |
| | | 05/05/15 | 20.45 | 29.95 | 206.96 | 205.01 | Dry | Dry |
| | | 08/04/15 | 20.45 | 29.95 | 206.96 | 205.01 | Dry | Dry |
| | | 02/01/16 | 20.45 | 29.95 | 206.96 | 205.01 | Dry | Dry |
| | | 08/04/16 | 20.45 | 29.95 | 206.96 | 205.01 | Dry | Dry |
| | | 02/20/19 | 20.45 | 29.95 | 206.96 | 205.01 | Dry | Dry |
| | | 08/13/19 | 20.45 | 29.95 | 206.96 | 205.01 | Dry | Dry |
| | | 02/18/20 | 20.45 | 29.95 | 206.96 | 205.01 | Dry | Dry |
| | | 03/15/21 | 20.45 | 29.95 | 206.96 | 205.01 | Dry | Dry |
| | | 02/11/22 | 20.45 | 29.95 | 206.96 | 205.01 | Dry | Dry |
| | | 02/09/23 | 20.45 | 29.95 | 206.96 | 205.01 | Dry | Dry |
| 46WW16 | I | 4/15/2002 | 40.66 | 50.46 | 208.23 | 205.57 | 37.31 | 170.92 |
| | | 5/15/2005 | 40.66 | 50.46 | 208.23 | 205.57 | 37.31 | 170.92 |
| | | 1/14/2007 | 40.66 | 50.46 | 208.23 | 205.57 | 37.00 | 171.23 |
| | | 6/15/2008 | 40.66 | 50.46 | 208.23 | 205.57 | 37.35 | 170.88 |
| | | 07/01/14 | 40.66 | 50.46 | 208.23 | 205.57 | 37.00 | 171.23 |
| | | 07/16/14 | 40.66 | 50.46 | 208.23 | 205.57 | 37.15 | 171.08 |
| | | 11/18/14 | 40.66 | 50.46 | 208.23 | 205.57 | 38.00 | 170.23 |
| | | 02/04/15 | 40.66 | 50.46 | 208.23 | 205.57 | 37.31 | 170.92 |
| | | 05/05/15 | 40.66 | 50.46 | 208.23 | 205.57 | 37.31 | 170.92 |
| | | 08/06/15 | 40.66 | 50.46 | 208.23 | 205.57 | 37.35 | 170.88 |
| | | 02/22/18 | 40.66 | 50.46 | 208.23 | 205.57 | 38.33 | 169.9 |
| | | 08/28/18 | 40.66 | 50.46 | 208.23 | 205.57 | 38.62 | 169.61 |
| | | 02/21/19 | 40.66 | 50.46 | 208.23 | 205.57 | 46WW16 contained water and a sample was collected. The sample collection log was misplaced and no water level information is available. | |
| | | 08/13/19 | 40.66 | 50.46 | 208.23 | 205.57 | 37.95 | 170.28 |
| | | 02/13/20 | 40.66 | 50.46 | 208.23 | 205.57 | 38.62 | 169.61 |
| | | 03/16/21 | 40.66 | 50.46 | 208.23 | 205.57 | 38.15 | 170.08 |
| | | 02/14/22 | 40.66 | 50.46 | 208.23 | 205.57 | 38.85 | 169.38 |
| | | 02/06/23 | 40.66 | 50.46 | 208.23 | 205.57 | 39.42 | 168.81 |
| 46WW17 | S/I | 07/07/20 | 27.69 | 37.69 | 202.54 | 199.85 | 33.95 | 168.59 |
| | | 03/15/21 | 27.69 | 37.69 | 202.54 | 199.85 | 30.63 | 171.91 |
| | | 02/11/22 | 27.69 | 37.69 | 202.54 | 199.85 | 31.42 | 171.12 |
| | | 02/09/23 | 27.69 | 37.69 | 202.54 | 199.85 | 32.45 | 170.09 |
| LHSMW08 | I | 12/1/1994 | 25.52 | 35.52 | 211.73 | 209.51 | 13.52 | 198.21 |
| | | 2/1/1996 | 25.52 | 35.52 | 211.73 | 209.51 | 15.24 | 196.49 |
| | | 12/1/1996 | 25.52 | 35.52 | 211.73 | 209.51 | 15.24 | 196.49 |
| | | 4/7/2008 | 25.52 | 35.52 | 211.73 | 209.51 | 25.78 | 185.95 |
| | | 9/13/2008 | 25.52 | 35.52 | 211.73 | 209.51 | 32.50 | 179.23 |
| | | 05/29/13 | 25.52 | 35.52 | 211.73 | 209.51 | 30.48 | 181.25 |
| | | 08/09/13 | 25.52 | 35.52 | 211.73 | 209.51 | 32.50 | 179.23 |
| | | 09/21/13 | 25.52 | 35.52 | 211.73 | 209.51 | 31.70 | 180.03 |
| LHSMW11 | S | 12/1/1994 | 17.02 | 27.02 | 212.91 | 209.89 | 13.54 | 199.37 |
| | | 2/1/1996 | 17.02 | 27.02 | 212.91 | 209.89 | 15.40 | 197.51 |
| | | 12/1/1996 | 17.02 | 27.02 | 212.91 | 209.89 | 15.40 | 197.51 |
| | | 3/16/2002 | 17.02 | 27.02 | 212.91 | 209.89 | Dry | Dry |

**Table 2-3**
**Groundwater Elevation Data**

| Well ID | Zone | Sampling Date | Screen Interval (ft BTOC) | | Top of Casing Elevation (ft MSL) | Ground Surface Elevation (ft MSL) | Depth to Water (ft BTOC) | Groundwater Elevation (ft MSL) |
|---|---|---|---|---|---|---|---|---|
| | | | Top | Bottom | | | | |
| LHSMW11 | S | 5/16/2008 | 17.02 | 27.02 | 212.91 | 209.89 | 26.46 | 186.45 |
| | | 10/13/2008 | 17.02 | 27.02 | 212.91 | 209.89 | Dry | Dry |
| | | 05/24/13 | 17.02 | 27.02 | 212.91 | 209.89 | Dry | Dry |
| | | 08/10/13 | 17.02 | 27.02 | 212.91 | 209.89 | Dry | Dry |
| | | 09/20/13 | 17.02 | 27.02 | 212.91 | 209.89 | Dry | Dry |
| | | 01/25/14 | 17.02 | 27.02 | 212.91 | 209.89 | Dry | Dry |
| | | 02/03/16 | 17.02 | 27.02 | 212.91 | 209.89 | Dry | Dry |
| | | 08/05/16 | 17.02 | 27.02 | 212.91 | 209.89 | 26.46 | 186.45 |
| | | 02/25/19 | 17.02 | 27.02 | 212.91 | 209.89 | Dry | Dry |
| LHSMW12 | S | 12/1/1994 | 6.64 | 16.64 | 209.02 | 205.98 | 9.66 | 199.36 |
| | | 2/1/1996 | 6.64 | 16.64 | 209.02 | 205.98 | 10.48 | 198.54 |
| | | 12/1/1996 | 6.64 | 16.64 | 209.02 | 205.98 | 10.48 | 198.54 |
| | | 3/16/2002 | 6.64 | 16.64 | 209.02 | 205.98 | Dry | Dry |
| | | 5/16/2008 | 6.64 | 16.64 | 209.02 | 205.98 | Dry | Dry |
| | | 10/13/2008 | 6.64 | 16.64 | 209.02 | 205.98 | Dry | Dry |
| | | 05/24/13 | 6.64 | 16.64 | 209.02 | 205.98 | Dry | Dry |
| | | 08/10/13 | 6.64 | 16.64 | 209.02 | 205.98 | Dry | Dry |
| | | 09/20/13 | 6.64 | 16.64 | 209.02 | 205.98 | Dry | Dry |
| | | 01/25/14 | 6.64 | 16.64 | 209.02 | 205.98 | Dry | Dry |
| | | 02/03/16 | 6.64 | 16.64 | 209.02 | 205.98 | Dry | Dry |
| | | 08/05/16 | 6.64 | 16.64 | 209.02 | 205.98 | Dry | Dry |
| | | 02/25/19 | 6.64 | 16.64 | 209.02 | 205.98 | Dry | Dry |
| LHSMW14 | S | 12/1/1994 | 10.51 | 20.51 | 244.78 | 241.67 | 9.80 | 234.98 |
| | | 2/1/1996 | 10.51 | 20.51 | 244.78 | 241.67 | 9.94 | 234.84 |
| | | 12/1/1996 | 10.51 | 20.51 | 244.78 | 241.67 | 9.94 | 234.84 |
| | | 3/16/2002 | 10.51 | 20.51 | 244.78 | 241.67 | 9.55 | 235.23 |
| | | 9/13/2008 | 10.51 | 20.51 | 244.78 | 241.67 | 14.92 | 229.86 |
| | | 05/24/13 | 10.51 | 20.51 | 244.78 | 241.67 | 12.81 | 231.97 |
| | | 08/09/13 | 10.51 | 20.51 | 244.78 | 241.67 | 14.92 | 229.86 |
| | | 09/24/13 | 10.51 | 20.51 | 244.78 | 241.67 | 15.5 | 229.28 |
| | | 02/03/16 | 10.51 | 20.51 | 244.78 | 241.67 | 9.55 | 235.23 |
| | | 02/25/19 | 10.51 | 20.51 | 244.78 | 241.67 | 8.47 | 236.31 |
| LHSMW15 | S | 12/1/1994 | 14.57 | 24.57 | 226.65 | 223.68 | 16.05 | 210.60 |
| | | 2/1/1996 | 14.57 | 24.57 | 226.65 | 223.68 | 16.60 | 210.05 |
| | | 12/1/1996 | 14.57 | 24.57 | 226.65 | 223.68 | 16.60 | 210.05 |
| | | 3/16/2002 | 14.57 | 24.57 | 226.65 | 223.68 | Dry | Dry |
| | | 5/16/2008 | 14.57 | 24.57 | 226.65 | 223.68 | Dry | Dry |
| | | 10/13/2008 | 14.57 | 24.57 | 226.65 | 223.68 | Dry | Dry |
| | | 05/25/13 | 14.57 | 24.57 | 226.65 | 223.68 | Dry | Dry |
| | | 08/10/13 | 14.57 | 24.57 | 226.65 | 223.68 | Dry | Dry |
| | | 09/20/13 | 14.57 | 24.57 | 226.65 | 223.68 | Dry | Dry |
| | | 01/25/14 | 14.57 | 24.57 | 226.65 | 223.68 | Dry | Dry |
| | | 02/03/16 | 14.57 | 24.57 | 226.65 | 223.68 | Dry | Dry |
| | | 08/05/16 | 14.57 | 24.57 | 226.65 | 223.68 | Dry | Dry |
| | | 02/25/19 | 14.57 | 24.57 | 226.65 | 223.68 | Dry | Dry |

**Table 2-3**
**Groundwater Elevation Data**

| Well ID | Zone | Sampling Date | Screen Interval (ft BTOC) Top | Screen Interval (ft BTOC) Bottom | Top of Casing Elevation (ft MSL) | Ground Surface Elevation (ft MSL) | Depth to Water (ft BTOC) | Groundwater Elevation (ft MSL) |
|---|---|---|---|---|---|---|---|---|
| LHSMW16 | S | 12/1/1994 | 14.49 | 24.49 | 232.19 | 229.30 | 8.25 | 223.94 |
| | | 2/1/1996 | 14.49 | 24.49 | 232.19 | 229.30 | 9.96 | 222.23 |
| | | 12/1/1996 | 14.49 | 24.49 | 232.19 | 229.30 | 9.96 | 222.23 |
| | | 3/16/2002 | 14.49 | 24.49 | 232.19 | 229.30 | 14.22 | 217.97 |
| | | 4/15/2002 | 14.49 | 24.49 | 232.19 | 229.30 | Dry | Dry |
| | | 5/15/2005 | 14.49 | 24.49 | 232.19 | 229.30 | Dry | Dry |
| | | 5/15/2008 | 14.49 | 24.49 | 232.19 | 229.30 | Dry | Dry |
| | | 5/16/2008 | 14.49 | 24.49 | 232.19 | 229.30 | 11.25 | 220.94 |
| | | 10/13/2008 | 14.49 | 24.49 | 232.19 | 229.30 | 18.80 | 213.39 |
| | | 05/29/13 | 14.49 | 24.49 | 232.19 | 229.30 | 16.70 | 215.49 |
| | | 08/10/13 | 14.49 | 24.49 | 232.19 | 229.30 | 18.80 | 213.39 |
| | | 09/25/13 | 14.49 | 24.49 | 232.19 | 229.30 | 20.95 | 211.24 |
| | | 01/29/14 | 14.49 | 24.49 | 232.19 | 229.30 | 20.54 | 211.65 |
| | | 11/19/14 | 14.49 | 24.49 | 232.19 | 229.30 | 21.26 | 210.93 |
| | | 02/04/15 | 14.49 | 24.49 | 232.19 | 229.30 | NM | NM |
| | | 05/05/15 | 14.49 | 24.49 | 232.19 | 229.30 | NM | NM |
| | | 08/05/15 | 14.49 | 24.49 | 232.19 | 229.30 | NM | NM |
| | | 02/03/16 | 14.49 | 24.49 | 232.19 | 229.30 | 14.22 | 217.97 |
| | | 08/05/16 | 14.49 | 24.49 | 232.19 | 229.30 | 11.25 | 220.94 |
| | | 02/22/18 | 14.49 | 24.49 | 232.19 | 229.30 | Dry | Dry |
| | | 08/28/18 | 14.49 | 24.49 | 232.19 | 229.30 | Dry | Dry |
| | | 02/25/19 | 14.49 | 24.49 | 232.19 | 229.30 | 10.32 | 221.87 |
| LHSMW17 | S | 12/1/1994 | 16.68 | 26.68 | 214.58 | 211.50 | 11.24 | 203.34 |
| | | 2/1/1996 | 16.68 | 26.68 | 214.58 | 211.50 | 13.15 | 201.43 |
| | | 12/1/1996 | 16.68 | 26.68 | 214.58 | 211.50 | 13.15 | 201.43 |
| | | 2/16/2002 | 16.68 | 26.68 | 214.58 | 211.50 | Dry | Dry |
| | | 3/15/2002 | 16.68 | 26.68 | 214.58 | 211.50 | Dry | Dry |
| | | 5/15/2005 | 16.68 | 26.68 | 214.58 | 211.50 | Dry | Dry |
| | | 3/16/2008 | 16.68 | 26.68 | 214.58 | 211.50 | Dry | Dry |
| | | 5/15/2008 | 16.68 | 26.68 | 214.58 | 211.50 | Dry | Dry |
| | | 11/18/14 | 16.68 | 26.68 | 214.58 | 211.50 | Dry | Dry |
| | | 02/03/15 | 16.68 | 26.68 | 214.58 | 211.50 | Dry | Dry |
| | | 05/05/15 | 16.68 | 26.68 | 214.58 | 211.50 | NM | NM |
| | | 08/05/15 | 16.68 | 26.68 | 214.58 | 211.50 | Dry | Dry |
| | | 02/02/16 | 16.68 | 26.68 | 214.58 | 211.50 | Dry | Dry |
| | | 08/03/16 | 16.68 | 26.68 | 214.58 | 211.50 | Dry | Dry |
| | | 02/22/18 | 16.68 | 26.68 | 214.58 | 211.50 | Dry | Dry |
| | | 08/29/18 | 16.68 | 26.68 | 214.58 | 211.50 | Dry | Dry |
| | | 02/20/19 | 16.68 | 26.68 | 214.58 | 211.50 | Dry | Dry |
| | | 08/13/19 | 16.68 | 26.68 | 214.58 | 211.50 | Dry | Dry |
| | | 02/18/20 | 16.68 | 26.68 | 214.58 | 211.50 | Dry | Dry |
| | | 03/15/21 | 16.68 | 26.68 | 214.58 | 211.50 | Dry | Dry |
| | | 02/14/22 | 16.68 | 26.68 | 214.58 | 211.50 | 26.65 | 187.93 |
| | | 02/09/23 | 16.68 | 26.68 | 214.58 | 211.50 | Dry | Dry |
| LHSMW18 | S | 12/1/1994 | 17.47 | 27.47 | 215.35 | 212.38 | 13.68 | 201.67 |
| | | 2/1/1996 | 17.47 | 27.47 | 215.35 | 212.38 | 15.07 | 200.28 |
| | | 12/1/1996 | 17.47 | 27.47 | 215.35 | 212.38 | 15.07 | 200.28 |
| | | 2/16/2002 | 17.47 | 27.47 | 215.35 | 212.38 | Dry | Dry |

**Table 2-3**
**Groundwater Elevation Data**

| Well ID | Zone | Sampling Date | Screen Interval (ft BTOC) Top | Screen Interval (ft BTOC) Bottom | Top of Casing Elevation (ft MSL) | Ground Surface Elevation (ft MSL) | Depth to Water (ft BTOC) | Groundwater Elevation (ft MSL) |
|---|---|---|---|---|---|---|---|---|
| LHSMW18 | S | 3/15/2002 | 17.47 | 27.47 | 215.35 | 212.38 | Dry | Dry |
| | | 5/15/2005 | 17.47 | 27.47 | 215.35 | 212.38 | Dry | Dry |
| | | 2/20/2007 | 17.47 | 27.47 | 215.35 | 212.38 | 22.47 | 192.88 |
| | | 3/16/2008 | 17.47 | 27.47 | 215.35 | 212.38 | 24.66 | 190.69 |
| | | 5/15/2008 | 17.47 | 27.47 | 215.35 | 212.38 | Dry | Dry |
| | | 10/13/2008 | 17.47 | 27.47 | 215.35 | 212.38 | Dry | Dry |
| | | 05/28/13 | 17.47 | 27.47 | 215.35 | 212.38 | 25.62 | 189.73 |
| | | 08/10/13 | 17.47 | 27.47 | 215.35 | 212.38 | Dry | Dry |
| | | 09/20/13 | 17.47 | 27.47 | 215.35 | 212.38 | Dry | Dry |
| | | 01/25/14 | 17.47 | 27.47 | 215.35 | 212.38 | Dry | Dry |
| | | 07/17/14 | 17.47 | 27.47 | 215.35 | 212.38 | Dry | Dry |
| | | 11/20/14 | 17.47 | 27.47 | 215.35 | 212.38 | NM | NM |
| | | 02/03/15 | 17.47 | 27.47 | 215.35 | 212.38 | Dry | Dry |
| | | 05/05/15 | 17.47 | 27.47 | 215.35 | 212.38 | Dry | Dry |
| | | 08/05/15 | 17.47 | 27.47 | 215.35 | 212.38 | Dry | Dry |
| | | 02/02/16 | 17.47 | 27.47 | 215.35 | 212.38 | Dry | Dry |
| | | 03/28/16 | 17.47 | 27.47 | 215.35 | 212.38 | 25.15 | 190.20 |
| | | 08/03/16 | 17.47 | 27.47 | 215.35 | 212.38 | 24.66 | 190.69 |
| | | 02/22/18 | 17.47 | 27.47 | 215.35 | 212.38 | Dry | Dry |
| | | 08/29/18 | 17.47 | 27.47 | 215.35 | 212.38 | Dry | Dry |
| | | 02/20/19 | 17.47 | 27.47 | 215.35 | 212.38 | Dry | Dry |
| | | 08/13/19 | 17.47 | 27.47 | 215.35 | 212.38 | Dry | Dry |
| | | 02/18/20 | 17.47 | 27.47 | 215.35 | 212.38 | Dry | Dry |
| | | 03/15/21 | 17.47 | 27.47 | 215.35 | 212.38 | Dry | Dry |
| | | 02/09/23 | 17.47 | 27.47 | 215.35 | 212.38 | Dry | Dry |
| LHSMW19 | S | 12/1/1994 | 19.76 | 29.76 | 212.96 | 209.80 | 11.15 | 201.81 |
| | | 2/1/1996 | 19.76 | 29.76 | 212.96 | 209.80 | 12.35 | 200.61 |
| | | 12/1/1996 | 19.76 | 29.76 | 212.96 | 209.80 | 12.35 | 200.61 |
| | | 1/16/2002 | 19.76 | 29.76 | 212.96 | 209.80 | 24.91 | 188.05 |
| | | 4/15/2002 | 19.76 | 29.76 | 212.96 | 209.80 | 24.90 | 188.06 |
| | | 6/15/2005 | 19.76 | 29.76 | 212.96 | 209.80 | 24.25 | 188.71 |
| | | 2/20/2007 | 19.76 | 29.76 | 212.96 | 209.80 | 20.90 | 192.06 |
| | | 3/16/2008 | 19.76 | 29.76 | 212.96 | 209.80 | 24.84 | 188.12 |
| | | 5/15/2008 | 19.76 | 29.76 | 212.96 | 209.80 | 24.36 | 188.60 |
| | | 05/28/13 | 19.76 | 29.76 | 212.96 | 209.80 | 24.50 | 188.46 |
| | | 08/13/13 | 19.76 | 29.76 | 212.96 | 209.80 | 25.13 | 187.83 |
| | | 09/23/13 | 19.76 | 29.76 | 212.96 | 209.80 | 26.38 | 186.58 |
| | | 01/28/14 | 19.76 | 29.76 | 212.96 | 209.80 | 24.90 | 188.06 |
| | | 07/16/14 | 19.76 | 29.76 | 212.96 | 209.80 | 24.55 | 188.41 |
| | | 11/18/14 | 19.76 | 29.76 | 212.96 | 209.80 | 25.33 | 187.63 |
| | | 02/04/15 | 19.76 | 29.76 | 212.96 | 209.80 | 24.90 | 188.06 |
| | | 05/06/15 | 19.76 | 29.76 | 212.96 | 209.80 | 24.25 | 188.71 |
| | | 08/05/15 | 19.76 | 29.76 | 212.96 | 209.80 | 24.36 | 188.60 |
| | | 02/01/16 | 19.76 | 29.76 | 212.96 | 209.80 | 24.91 | 188.05 |
| | | 08/03/16 | 19.76 | 29.76 | 212.96 | 209.80 | 24.84 | 188.12 |
| | | 02/20/18 | 19.76 | 29.76 | 212.96 | 209.80 | 25.91 | 187.05 |
| | | 08/28/18 | 19.76 | 29.76 | 212.96 | 209.80 | 26.61 | 186.35 |
| | | 02/20/19 | 19.76 | 29.76 | 212.96 | 209.80 | 25.55 | 187.41 |

**Table 2-3**
**Groundwater Elevation Data**

| Well ID | Zone | Sampling Date | Screen Interval (ft BTOC) | | Top of Casing Elevation (ft MSL) | Ground Surface Elevation (ft MSL) | Depth to Water (ft BTOC) | Groundwater Elevation (ft MSL) |
|---|---|---|---|---|---|---|---|---|
| | | | Top | Bottom | | | | |
| LHSMW19 | S | 08/12/19 | 19.76 | 29.76 | 212.96 | 209.80 | 24.70 | 188.26 |
| | | 02/19/20 | 19.76 | 29.76 | 212.96 | 209.80 | 25.35 | 187.61 |
| | | 03/18/21 | 19.76 | 29.76 | 212.96 | 209.80 | 25.08 | 187.88 |
| | | 02/14/22 | 19.76 | 29.76 | 212.96 | 209.80 | 25.20 | 187.76 |
| | | 02/09/23 | 19.76 | 29.76 | 212.96 | 209.80 | 26.10 | 186.86 |
| LHSMW20 | S | 12/1/1994 | 15.08 | 25.08 | 209.29 | 206.21 | 12.60 | 196.69 |
| | | 2/1/1996 | 15.08 | 25.08 | 209.29 | 206.21 | 12.84 | 196.45 |
| | | 12/1/1996 | 15.08 | 25.08 | 209.29 | 206.21 | 12.84 | 196.45 |
| | | 05/28/13 | 15.08 | 25.08 | 209.29 | 206.21 | 24.2 | 185.09 |
| | | 08/10/13 | 15.08 | 25.08 | 209.29 | 206.21 | Dry | Dry |
| | | 09/20/13 | 15.08 | 25.08 | 209.29 | 206.21 | Dry | Dry |
| | | 01/25/14 | 15.08 | 25.08 | 209.29 | 206.21 | Dry | Dry |
| | | 07/17/14 | 15.08 | 25.08 | 209.29 | 206.21 | Dry | Dry |
| | | 11/20/14 | 15.08 | 25.08 | 209.29 | 206.21 | Dry | Dry |
| | | 02/03/15 | 15.08 | 25.08 | 209.29 | 206.21 | Dry | Dry |
| | | 05/05/15 | 15.08 | 25.08 | 209.29 | 206.21 | Dry | Dry |
| | | 08/04/15 | 15.08 | 25.08 | 209.29 | 206.21 | Dry | Dry |
| | | 02/01/16 | 15.08 | 25.08 | 209.29 | 206.21 | Dry | Dry |
| | | 08/04/16 | 15.08 | 25.08 | 209.29 | 206.21 | Dry | Dry |
| | | 02/20/19 | 15.08 | 25.08 | 209.29 | 206.21 | Dry | Dry |
| | | 08/13/19 | 15.08 | 25.08 | 209.29 | 206.21 | Dry | Dry |
| | | 03/18/21 | 15.08 | 25.08 | 209.29 | 206.21 | Dry | Dry |
| | | 02/11/22 | 15.08 | 25.08 | 209.29 | 206.21 | Dry | Dry |
| | | 02/09/23 | 15.08 | 25.08 | 209.29 | 206.21 | Dry | Dry |
| LHSMW21 | S | 12/1/1994 | 19.61 | 29.61 | 207.67 | 204.66 | 10.92 | 196.75 |
| | | 2/1/1996 | 19.61 | 29.61 | 207.67 | 204.66 | 11.70 | 195.97 |
| | | 12/1/1996 | 19.61 | 29.61 | 207.67 | 204.66 | 11.70 | 195.97 |
| | | 05/28/13 | 19.61 | 29.61 | 207.67 | 204.66 | 19.87 | 187.80 |
| | | 08/10/13 | 19.61 | 29.61 | 207.67 | 204.66 | 22.40 | 185.27 |
| | | 09/25/13 | 19.61 | 29.61 | 207.67 | 204.66 | 23.60 | 184.07 |
| | | 02/02/16 | 19.61 | 29.61 | 207.67 | 204.66 | 22.15 | 185.52 |
| | | 08/05/16 | 19.61 | 29.61 | 207.67 | 204.66 | 21.12 | 186.55 |
| | | 02/25/19 | 19.61 | 29.61 | 207.67 | 204.66 | 22.22 | 185.45 |
| | | 08/13/19 | 19.61 | 29.61 | 207.67 | 204.66 | 20.55 | 187.12 |
| | | 02/13/20 | 19.61 | 29.61 | 207.67 | 204.66 | 21.30 | 186.37 |
| | | 03/16/21 | 19.61 | 29.61 | 207.67 | 204.66 | 18.53 | 189.14 |
| | | 02/15/22 | 19.61 | 29.61 | 207.67 | 204.66 | 19.60 | 188.07 |
| | | 02/06/23 | 19.61 | 29.61 | 207.67 | 204.66 | 19.35 | 188.32 |
| LHSMW22 | S | 12/1/1994 | 18.69 | 28.69 | 209.60 | 206.41 | 13.89 | 195.71 |
| | | 2/1/1996 | 18.69 | 28.69 | 209.60 | 206.41 | 15.08 | 194.52 |
| | | 12/1/1996 | 18.69 | 28.69 | 209.60 | 206.41 | 15.08 | 194.52 |
| | | 1/16/2002 | 18.69 | 28.69 | 209.60 | 206.41 | Dry | Dry |
| | | 3/15/2002 | 18.69 | 28.69 | 209.60 | 206.41 | Dry | Dry |
| | | 5/15/2005 | 18.69 | 28.69 | 209.60 | 206.41 | Dry | Dry |
| | | 2/19/2007 | 18.69 | 28.69 | 209.60 | 206.41 | 25.21 | 184.39 |
| | | 4/15/2008 | 18.69 | 28.69 | 209.60 | 206.41 | Dry | Dry |
| | | 4/16/2008 | 18.69 | 28.69 | 209.60 | 206.41 | Dry | Dry |
| | | 10/13/2008 | 18.69 | 28.69 | 209.60 | 206.41 | Dry | Dry |
| | | 05/28/13 | 18.69 | 28.69 | 209.60 | 206.41 | Dry | Dry |
| | | 08/10/13 | 18.69 | 28.69 | 209.60 | 206.41 | Dry | Dry |

**Table 2-3**
**Groundwater Elevation Data**

| Well ID | Zone | Sampling Date | Screen Interval (ft BTOC) Top | Screen Interval (ft BTOC) Bottom | Top of Casing Elevation (ft MSL) | Ground Surface Elevation (ft MSL) | Depth to Water (ft BTOC) | Groundwater Elevation (ft MSL) |
|---|---|---|---|---|---|---|---|---|
| LHSMW22 | S | 09/20/13 | 18.69 | 28.69 | 209.60 | 206.41 | Dry | Dry |
| | | 01/25/14 | 18.69 | 28.69 | 209.60 | 206.41 | Dry | Dry |
| | | 07/17/14 | 18.69 | 28.69 | 209.60 | 206.41 | Dry | Dry |
| | | 11/20/14 | 18.69 | 28.69 | 209.60 | 206.41 | Dry | Dry |
| | | 02/03/15 | 18.69 | 28.69 | 209.60 | 206.41 | Dry | Dry |
| | | 05/05/15 | 18.69 | 28.69 | 209.60 | 206.41 | Dry | Dry |
| | | 08/04/15 | 18.69 | 28.69 | 209.60 | 206.41 | Dry | Dry |
| | | 02/01/16 | 18.69 | 28.69 | 209.60 | 206.41 | Dry | Dry |
| | | 08/04/16 | 18.69 | 28.69 | 209.60 | 206.41 | Dry | Dry |
| | | 02/20/18 | 18.69 | 28.69 | 209.60 | 206.41 | Dry | Dry |
| | | 08/28/18 | 18.69 | 28.69 | 209.60 | 206.41 | Dry | Dry |
| | | 02/20/19 | 18.69 | 28.69 | 209.60 | 206.41 | Dry | Dry |
| | | 08/13/19 | 18.69 | 28.69 | 209.60 | 206.41 | Dry | Dry |
| | | 02/18/20 | 18.69 | 28.69 | 209.60 | 206.41 | Dry | Dry |
| | | 03/15/21 | 18.69 | 28.69 | 209.60 | 206.41 | Dry | Dry |
| | | 02/11/22 | 18.69 | 28.69 | 209.60 | 206.41 | Dry | Dry |
| | | 02/06/23 | 18.69 | 28.69 | 209.60 | 206.41 | Dry | Dry |
| LHSMW23 | I | 12/1/1994 | 21.42 | 41.42 | 208.82 | 205.80 | 15.53 | 193.29 |
| | | 2/1/1996 | 21.42 | 41.42 | 208.82 | 205.80 | 17.02 | 191.80 |
| | | 12/1/1996 | 21.42 | 41.42 | 208.82 | 205.80 | 17.02 | 191.80 |
| | | 1/16/2002 | 21.42 | 41.42 | 208.82 | 205.80 | Dry | Dry |
| | | 3/15/2002 | 21.42 | 41.42 | 208.82 | 205.80 | Dry | Dry |
| | | 5/15/2005 | 21.42 | 41.42 | 208.82 | 205.80 | Dry | Dry |
| | | 2/19/2007 | 21.42 | 41.42 | 208.82 | 205.80 | 26.55 | 182.27 |
| | | 04/07/08 | 21.42 | 41.42 | 208.82 | 205.80 | 27.64 | 181.18 |
| | | 04/15/08 | 21.42 | 41.42 | 208.82 | 205.80 | Dry | Dry |
| | | 04/16/08 | 21.42 | 41.42 | 208.82 | 205.80 | Dry | Dry |
| | | 10/13/08 | 21.42 | 41.42 | 208.82 | 205.80 | Dry | Dry |
| | | 05/25/13 | 21.42 | 41.42 | 208.82 | 205.80 | Dry | Dry |
| | | 08/10/13 | 21.42 | 41.42 | 208.82 | 205.80 | Dry | Dry |
| | | 09/20/13 | 21.42 | 41.42 | 208.82 | 205.80 | Dry | Dry |
| | | 01/25/14 | 21.42 | 41.42 | 208.82 | 205.80 | Dry | Dry |
| | | 07/17/14 | 21.42 | 41.42 | 208.82 | 205.80 | Dry | Dry |
| | | 11/20/14 | 21.42 | 41.42 | 208.82 | 205.80 | Dry | Dry |
| | | 02/03/15 | 21.42 | 41.42 | 208.82 | 205.80 | Dry | Dry |
| | | 05/05/15 | 21.42 | 41.42 | 208.82 | 205.80 | Dry | Dry |
| | | 08/04/15 | 21.42 | 41.42 | 208.82 | 205.80 | Dry | Dry |
| | | 02/01/16 | 21.42 | 41.42 | 208.82 | 205.80 | Dry | Dry |
| | | 03/28/16 | 21.42 | 41.42 | 208.82 | 205.80 | Dry | Dry |
| | | 08/04/16 | 21.42 | 41.42 | 208.82 | 205.80 | Dry | Dry |
| | | 02/20/18 | 21.42 | 41.42 | 208.82 | 205.80 | Dry | Dry |
| | | 08/28/18 | 21.42 | 41.42 | 208.82 | 205.80 | Dry | Dry |
| | | 02/20/19 | 21.42 | 41.42 | 208.82 | 205.80 | Dry | Dry |
| | | 08/13/19 | 21.42 | 41.42 | 208.82 | 205.80 | Dry | Dry |
| LHSMW23R | I | 09/03/19 | 23.09 | 43.09 | 208.84 | 205.75 | 35.80 | 173.04 |
| | | 02/19/20 | 23.09 | 43.09 | 208.84 | 205.75 | 35.90 | 172.94 |
| | | 03/18/21 | 23.09 | 43.09 | 208.84 | 205.75 | 35.95 | 172.89 |
| | | 02/11/22 | 23.09 | 43.09 | 208.84 | 205.75 | 36.13 | 172.71 |
| | | 02/09/23 | 23.09 | 43.09 | 208.84 | 205.75 | 36.73 | 172.11 |

**Table 2-3**
**Groundwater Elevation Data**

| Well ID | Zone | Sampling Date | Screen Interval (ft BTOC) Top | Screen Interval (ft BTOC) Bottom | Top of Casing Elevation (ft MSL) | Ground Surface Elevation (ft MSL) | Depth to Water (ft BTOC) | Groundwater Elevation (ft MSL) |
|---|---|---|---|---|---|---|---|---|
| LHSMW24 | S | 12/1/1994 | 18.96 | 28.96 | 203.84 | 200.52 | 11.90 | 191.94 |
| | | 02/01/96 | 18.96 | 28.96 | 203.84 | 200.52 | 13.84 | 190.00 |
| | | 12/1/1996 | 18.96 | 28.96 | 203.84 | 200.52 | 13.84 | 190.00 |
| | | 2/16/2002 | 18.96 | 28.96 | 203.84 | 200.52 | 27.88 | 175.96 |
| | | 5/16/2008 | 18.96 | 28.96 | 203.84 | 200.52 | Dry | Dry |
| | | 10/13/2008 | 18.96 | 28.96 | 203.84 | 200.52 | Dry | Dry |
| | | 05/28/13 | 18.96 | 28.96 | 203.84 | 200.52 | Dry | Dry |
| | | 08/10/13 | 18.96 | 28.96 | 203.84 | 200.52 | Dry | Dry |
| | | 09/20/13 | 18.96 | 28.96 | 203.84 | 200.52 | Dry | Dry |
| | | 01/25/14 | 18.96 | 28.96 | 203.84 | 200.52 | Dry | Dry |
| | | 07/17/14 | 18.96 | 28.96 | 203.84 | 200.52 | Dry | Dry |
| | | 02/02/16 | 18.96 | 28.96 | 203.84 | 200.52 | 27.88 | 175.96 |
| | | 08/05/16 | 18.96 | 28.96 | 203.84 | 200.52 | Dry | Dry |
| | | 02/25/19 | 18.96 | 28.96 | 203.84 | 200.52 | Dry | Dry |
| | | 03/18/21 | 18.96 | 28.96 | 203.84 | 200.52 | Dry | Dry |
| | | 02/11/22 | 18.96 | 28.96 | 203.84 | 200.52 | Dry | Dry |
| | | 02/09/23 | 18.96 | 28.96 | 203.84 | 200.52 | Dry | Dry |
| LHSMW25 | I | 12/1/1994 | 22.10 | 42.10 | 201.97 | 199.07 | 15.75 | 186.22 |
| | | 2/1/1996 | 22.10 | 42.10 | 201.97 | 199.07 | 17.10 | 184.87 |
| | | 12/1/1996 | 22.10 | 42.10 | 201.97 | 199.07 | 17.10 | 184.87 |
| | | 4/7/2008 | 22.10 | 42.10 | 201.97 | 199.07 | 25.50 | 176.47 |
| | | 02/22/18 | 22.10 | 42.10 | 201.97 | 199.07 | 30.90 | 171.07 |
| | | 08/27/18 | 22.10 | 42.10 | 201.97 | 199.07 | 31.33 | 170.64 |
| | | 02/25/19 | 22.10 | 42.10 | 201.97 | 199.07 | 30.93 | 171.04 |
| | | 08/12/19 | 22.10 | 42.10 | 201.97 | 199.07 | 29.85 | 172.12 |
| | | 02/19/20 | 22.10 | 42.10 | 201.97 | 199.07 | 31.22 | 170.75 |
| | | 03/15/21 | 22.10 | 42.10 | 201.97 | 199.07 | 30.82 | 171.15 |
| | | 02/13/22 | 22.10 | 42.10 | 201.97 | 199.07 | 31.33 | 170.64 |
| | | 02/09/23 | 22.10 | 42.10 | 201.97 | 199.07 | 32.00 | 169.97 |
| LHSMW27 | S | 12/1/1994 | 10.50 | 20.50 | 202.10 | 199.20 | 12.19 | 189.91 |
| | | 2/1/1996 | 10.50 | 20.50 | 202.10 | 199.20 | 14.05 | 188.05 |
| | | 12/1/1996 | 10.50 | 20.50 | 202.10 | 199.20 | 14.05 | 188.05 |
| | | 2/16/2002 | 10.50 | 20.50 | 202.10 | 199.20 | 17.82 | 184.28 |
| | | 5/16/2008 | 10.50 | 20.50 | 202.10 | 199.20 | Dry | Dry |
| | | 10/13/2008 | 10.50 | 20.50 | 202.10 | 199.20 | Dry | Dry |
| | | 05/28/13 | 10.50 | 20.50 | 202.10 | 199.20 | Dry | Dry |
| | | 08/10/13 | 10.50 | 20.50 | 202.10 | 199.20 | Dry | Dry |
| | | 09/20/13 | 10.50 | 20.50 | 202.10 | 199.20 | Dry | Dry |
| | | 01/25/14 | 10.50 | 20.50 | 202.10 | 199.20 | Dry | Dry |
| | | 07/18/14 | 10.50 | 20.50 | 202.10 | 199.20 | Dry | Dry |
| | | 02/02/16 | 10.50 | 20.50 | 202.10 | 199.20 | 17.82 | 184.28 |
| | | 08/05/16 | 10.50 | 20.50 | 202.10 | 199.20 | Dry | Dry |
| | | 02/25/19 | 10.50 | 20.50 | 202.10 | 199.20 | 19.17 | 182.93 |

Notes:

BTOC - below top of casing
D - Deep
ft - feet
I - Intermediate
ID - identifier
MSL - mean sea level
NM - not measured
S - shallow

## Table 2-4
## Evaluation of Screened Intervals for Historically Dry Shallow Groundwater Zone Wells

| Dry Shallow Zone Well ID | Top of Shallow Zone Screen Elevation (ft MSL) | Bottom of Shallow Zone Well Screen Elevation (ft MSL) | Nearest Int. Zone Well ID | Distance to Nearest Int. Zone Well from Dry Shallow Well (ft) | Top of Int. Zone Well Casing Elevation (ft MSL) | Top of Int. Zone Screen Elevation (ft MSL) | Bottom of Int. Zone Screen Elevation (ft MSL) | Depth to Int. Zone Groundwater (ft BTOC) | Int. Zone Groundwater Elevation (ft MSL) | Ground Surface Elevation (ft MSL) | Approximate Top of Intermediate Zone Based on Boring Log (ft MSL) | Approximate Depth from Bottom of Shallow Zone Screen to Top of Intermediate Zone (ft) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 46WW01 | 195.75 | 185.75 | 46WW02 | 23 | 212.21 | 174.16 | 164.16 | 39.33 | 172.88 | 209.16 | 169.16 | 16.59 |
| 46WW04 | 198.47 | 188.47 | 46WW06 | 22 | 213.84 | 173.24 | 163.24 | 42.3 | 171.54 | 211.24 | 182.74 | 5.73 |
| 46WW10 | 199.50 | 190.00 | 46WW06 | 325 | 213.84 | 173.24 | 163.24 | 42.3 | 171.54 | 211.24 | 182.74 | 7.26 |
| 46WW12 | 190.60 | 181.10 | 46WW09 | 224 | 210.19 | 178.71 | 169.21 | 39.92 | 170.27 | 207.71 | 183.71 | -2.61 |
| 46WW13 | 186.96 | 177.46 | LHSMW23R | 170 | 208.84 | 185.75 | 165.75 | 36.73 | 172.11 | 205.75 | 181.75 | -4.29 |
| 46WW15 | 186.51 | 177.01 | LHSMW23R | 136 | 208.84 | 185.75 | 165.75 | 36.73 | 172.11 | 205.75 | 181.75 | -4.74 |
| LHSMW17 | 197.90 | 187.90 | 46WW02 | 496 | 212.21 | 174.16 | 164.16 | 39.33 | 172.88 | 209.16 | 169.16 | 18.74 |
| LHSMW18 | 197.88 | 187.88 | 46WW02 | 306 | 212.21 | 174.16 | 164.16 | 39.33 | 172.88 | 209.16 | 169.16 | 18.72 |
| LHSMW20 | 194.21 | 184.21 | 46WW07 | 155 | 207.87 | 166.37 | 156.87 | 37.9 | 169.97 | 205.37 | 166.37 | 17.84 |
| LHSMW22 | 190.91 | 180.91 | 46WW02 | 317 | 212.21 | 174.16 | 164.16 | 39.33 | 172.88 | 209.16 | 169.16 | 11.75 |
| LHSMW24 | 184.88 | 174.88 | LHSMW25 | 256 | 201.97 | 179.87 | 159.87 | 32 | 169.97 | 199.07 | 180.07 | -5.19 |

Notes:

Green shading indicates the bottom of the shallow groundwater zone well is at least ten feet above the top of the intermediate groundwater zone at the nearest intermediate zone well.

Blue shading indicates the bottom of the shallow groundwater zone well is less than ten feet above the top of the intermediate groundwater zone at the nearest intermediate zone well.

Gray shading indicates the bottom of the shallow groundwater zone well overlaps with the top of the intermediate groundwater zone at the nearest intermediate zone well.

BTOC - below top of casing

ft - feet

ID - identifier

Int. - Intermediate

MSL - mean sea level

## Table 2-5
## Year 9 Groundwater RA-O Sampling Results - February 2023

| | | | Location Code | 46WW02 | | 46WW03 | | 46WW05 | | | | 46WW06 | | 46WW07 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Sample ID | 46WW02-230206 | | 46WW03-230206 | | 46WW05-230207 | | 46WW05R-230228 | | 46WW06-230209 | | 46WW07-230206 | |
| | | | Sample Date | 2/6/2023 | | 2/6/2023 | | 2/7/2023 | | 2/28/2023 | | 2/9/2023 | | 2/6/2023 | |
| | | | Location Description | Site 46 - Central, Within Site Boundary, Intermediate Zone | | Site 46 - Central, Within Site Boundary, Deep Zone | | Site 46 - North, Within Site Boundary, Intermediate Zone | | | | Site 46 - West, Within Site Boundary, Intermediate Zone | | Site 46 - North, Within Site Boundary. Intermediate Zone | |
| **Analyte** | **Units** | **MCL** | | **Result** | **Val Qual** | **Result** | **Val Qual** | **Result** | **Val Qual** | **Result** | **Val Qual** | **Result** | **Val Qual** | **Result** | **Val Qual** |
| **Field Measurements** | | | | | | | | | | | | | | | |
| Dissolved oxygen | mg/L | NV | | 0.02 | | 0.03 | | 0.09 | | 1.64 | | 0.12 | | 0.08 | |
| Oxidation Reduction Potential | mV | NV | | 158 | | -3 | | 275 | | 322 | | 5 | | 112 | |
| pH | Std. Units | NV | | 5.29 | | 8.19 | | 4.36 | | 4.86 | | 6.28 | | 6.57 | |
| **Dissolved Gases (RSK-175)** | | | | | | | | | | | | | | | |
| Carbon dioxide | µg/L | NV | | 90,000 | J | NA | | 150,000 | | NA | | NA | | NA | |
| Ethane | µg/L | NV | | < 0.5 | U | NA | | < 0.5 | U | NA | | NA | | NA | |
| Ethylene | µg/L | NV | | < 0.5 | UJ | NA | | 1.32 | J | NA | | NA | | NA | |
| Methane | µg/L | NV | | 1.74 | | NA | | 3.32 | | NA | | NA | | NA | |
| **General Chemistry (SM5310B/SW9056A)** | | | | | | | | | | | | | | | |
| Chloride | mg/L | NV | | 54.4 | | NA | | 172 | | NA | | NA | | NA | |
| Nitrate | mg/L | NV | | < 0.05 | U | NA | | NA[1] | | < 0.25 | U | NA | | NA | |
| Sulfate | mg/L | NV | | 270 | | NA | | 4,440 | | NA | | NA | | NA | |
| Total organic carbon | mg/L | NV | | 10.3 | | NA | | 7.38 | | NA | | NA | | NA | |
| **Volatile Organic Compounds (Method SW8260C)** | | | | | | | | | | | | | | | |
| cis-1,2-Dichloroethene | µg/L | 70 | | 1.8 | J | < 0.5 | U | 1.8 | | NA | | < 0.5 | U | < 0.5 | U |
| Trichloroethene | µg/L | 5 | | **29** | | < 0.5 | U | **33** | | NA | | < 0.5 | U | < 0.5 | U |
| Vinyl chloride | µg/L | 2 | | 0.43 | J | < 0.5 | U | < 1 | U | NA | | < 0.5 | U | < 0.5 | U |

**Notes:**

Blue highlighting indicates concentrations above the MCL

1 - Samples for nitrate from 2/7/2023 and 2/9/2023 could not be analyzed within the hold time due to an instrument outage. Samples were recollected for nitrate from the affected locations on 2/28/23.

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

U - Undetected: The analyte was analyzed for, but not detected.

UJ - Undetected estimated: The analyte was analyzed for but, was not detected. Even though the analyte was not detected, certain discrepancies in meeting analyte specific quality control were not met.

MCL - Maximum Contaminant Level

ug/L - micrograms per liter

mg/L - milligrams per liter

mV - millivolts

Std. Units - standard pH units

< - The analyte was not detected above the concentration shown

Val Qual - Validation Qualifier

NA - not analyzed

NV - no value; MCLs only shown for contaminants of concern

ID - identification

FD - field duplicate

## Table 2-5
## Year 9 Groundwater RA-O Sampling Results - February 2023

| | | | Location Code | 46WW08 | | 46WW09 | | | | | | | | 46WW11 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Sample ID | 46WW08-230209 | | 46WW09-230207 | | 46WW09-230207-FD | | 46WW09R-230228 | | 46WW09R-230228-FD | | 46WW11-230209 | | 46WW11R-230228 | |
| | | | Sample Date | 2/9/2023 | | 2/7/2023 | | 2/7/2023 | | 2/28/2023 | | 2/28/2023 | | 2/9/2023 | | 2/28/2023 | |
| | | | Location Description | Site 46 - NNW, Inside Site Boundary. Intermediate Zone | | Site 46 - Central, Within Site Boundary. Intermediate Zone | | | | | | | | Site 46 - Central, Within Site Boundary, Shallow Zone | | | |
| **Analyte** | **Units** | **MCL** | | **Result** | **Val Qual** | **Result** | **Val Qual** | **Result** | **Val Qual** | **Result** | **Val Qual** | **Result** | **Val Qual** | **Result** | **Val Qual** | **Result** | **Val Qual** |
| **Field Measurements** | | | | | | | | | | | | | | | | | |
| Dissolved oxygen | mg/L | NV | | 0.1 | | 0.01 | | 0.01 | | 1.12 | | 1.12 | | 0.04 | | 2.2 | |
| Oxidation Reduction Potential | mV | NV | | -31 | | 204 | | 204 | | 151 | | 151 | | 91 | | 159 | |
| pH | Std. Units | NV | | 6.29 | | 6.29 | | 6.29 | | 6.73 | | 6.73 | | 5.59 | | 5.9 | |
| **Dissolved Gases (RSK-175)** | | | | | | | | | | | | | | | | | |
| Carbon dioxide | µg/L | NV | | NA | | 54,000 | | 59,000 | | NA | | NA | | 66,000 | | NA | |
| Ethane | µg/L | NV | | NA | | < 0.5 | U | 0.958 | J | NA | | NA | | < 0.5 | U | NA | |
| Ethylene | µg/L | NV | | NA | | 1.17 | J | < 0.5 | UJ | NA | | NA | | < 0.5 | UJ | NA | |
| Methane | µg/L | NV | | NA | | 1.85 | J | 1.12 | J | NA | | NA | | 22.9 | | NA | |
| **General Chemistry (SM5310B/SW9056A)** | | | | | | | | | | | | | | | | | |
| Chloride | mg/L | NV | | NA | | 473 | | 465 | | NA | | NA | | 142 | | NA | |
| Nitrate | mg/L | NV | | NA | | NA[1] | | NA[1] | | < 0.25 | U | < 0.25 | U | NA[1] | | < 0.05 | U |
| Sulfate | mg/L | NV | | NA | | 2,270 | | 2,250 | | NA | | NA | | 265 | | NA | |
| Total organic carbon | mg/L | NV | | NA | | 3.95 | | 4.24 | | NA | | NA | | 1.74 | | NA | |
| **Volatile Organic Compounds (Method SW8260C)** | | | | | | | | | | | | | | | | | |
| cis-1,2-Dichloroethene | µg/L | 70 | | < 0.5 | U | < 1 | U | < 1 | U | NA | | NA | | < 1 | U | NA | |
| Trichloroethene | µg/L | 5 | | < 0.5 | U | < 1 | U | < 1 | U | NA | | NA | | **22** | | NA | |
| Vinyl chloride | µg/L | 2 | | < 0.5 | U | < 1 | U | < 1 | U | NA | | NA | | < 1 | U | NA | |

**Notes:**

Blue highlighting indicates concentrations above the MCL

1 - Samples for nitrate from 2/7/2023 and 2/9/2023 could not be analyzed within the hold time due to an instrument outage. Samples were recollected for nitrate from the affected locations on 2/28/23.

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

U - Undetected: The analyte was analyzed for, but not detected.

UJ - Undetected estimated: The analyte was analyzed for but, was not detected. Even though the analyte was not detected, certain discrepancies in meeting analyte specific quality control were not met.

MCL - Maximum Contaminant Level

ug/L - micrograms per liter

mg/L - milligrams per liter

mV - millivolts

Std. Units - standard pH units

< - The analyte was not detected above the concentration shown

Val Qual - Validation Qualifier

NA - not analyzed

NV - no value; MCLs only shown for contaminants of concern

ID - identification

FD - field duplicate

## Table 2-5
## Year 9 Groundwater RA-O Sampling Results - February 2023

| | | | Location Code | 46WW14 | | 46WW16 | | 46WW17 | | LHSMW19 | | | | LHSMW21 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Sample ID | 46WW14-230206 | | 46WW16-230206 | | 46WW17-230209 | | LHSMW19-230209 | | LHSMW19-230209-FD | | LHSMW21-230206 | |
| | | | Sample Date | 2/6/2023 | | 2/6/2023 | | 2/9/2023 | | 2/9/2023 | | 2/9/2023 | | 2/6/2023 | |
| | | | Location Description | Site 45 - Northeast, Within Site Boundary, Intermediate Zone | | Site 46 - North, Within Site Boundary, Intermediate Zone | | Site 46 - Northeast, Within Site Boundary, Shallow/Intermediate Zone | | Site 46 - Central, Within Site Boundary, Shallow Zone | | | | Site 46 - North, Within Site Boundary, Shallow Zone | |
| **Analyte** | **Units** | **MCL** | | **Result** | **Val Qual** | **Result** | **Val Qual** | **Result** | **Val Qual** | **Result** | **Val Qual** | **Result** | **Val Qual** | **Result** | **Val Qual** |
| **Field Measurements** | | | | | | | | | | | | | | | |
| Dissolved oxygen | mg/L | NV | | 0.05 | | 0.04 | | 0.02 | | 0.08 | | 0.08 | | 0.07 | |
| Oxidation Reduction Potential | mV | NV | | -78 | | -126 | | 75 | | 32 | | 32 | | 128 | |
| pH | Std. Units | NV | | 6.77 | | 10.57 | | 6.42 | | 6.53 | | 6.53 | | 6.98 | |
| **Dissolved Gases (RSK-175)** | | | | | | | | | | | | | | | |
| Carbon dioxide | µg/L | NV | | NA | | < 12,000 | U | NA | | NA | | NA | | 46,000 | |
| Ethane | µg/L | NV | | NA | | < 0.5 | U | NA | | NA | | NA | | < 0.5 | U |
| Ethylene | µg/L | NV | | NA | | < 0.5 | UJ | NA | | NA | | NA | | < 0.5 | UJ |
| Methane | µg/L | NV | | NA | | 6.58 | | NA | | NA | | NA | | 1.89 | |
| **General Chemistry (SM5310B/SW9056A)** | | | | | | | | | | | | | | | |
| Chloride | mg/L | NV | | NA | | 266 | | NA | | NA | | NA | | 92.4 | |
| Nitrate | mg/L | NV | | NA | | < 0.05 | U | NA | | NA | | NA | | < 0.05 | U |
| Sulfate | mg/L | NV | | NA | | 569 | | NA | | NA | | NA | | 851 | |
| Total organic carbon | mg/L | NV | | NA | | 5.96 | | NA | | NA | | NA | | 1.61 | |
| **Volatile Organic Compounds (Method SW8260C)** | | | | | | | | | | | | | | | |
| cis-1,2-Dichloroethene | µg/L | 70 | | < 0.5 | U | < 0.5 | U | < 0.5 | U | 11 | | 11 | | **200** | |
| Trichloroethene | µg/L | 5 | | < 0.5 | U | < 0.5 | U | < 0.5 | U | **24** | | **26** | | **61** | |
| Vinyl chloride | µg/L | 2 | | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 1 | U | < 1 | U | **8** | |

**Notes:**

Blue highlighting indicates concentrations above the MCL

1 - Samples for nitrate from 2/7/2023 and 2/9/2023 could not be analyzed within the hold time due to an instrument outage. Samples were recollected for nitrate from the affected locations on 2/28/23.

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

U - Undetected: The analyte was analyzed for, but not detected.

UJ - Undetected estimated: The analyte was analyzed for but, was not detected. Even though the analyte was not detected, certain discrepancies in meeting analyte specific quality control were not met.

MCL - Maximum Contaminant Level

ug/L - micrograms per liter

mg/L - milligrams per liter

mV - millivolts

Std. Units - standard pH units

< - The analyte was not detected above the concentration shown

Val Qual - Validation Qualifier

NA - not analyzed

NV - no value; MCLs only shown for contaminants of concern

ID - identification

FD - field duplicate

## Table 2-5
## Year 9 Groundwater RA-O Sampling Results - February 2023

| | Location Code | LHSMW23R | | | | LHSMW25 | |
|---|---|---|---|---|---|---|---|
| | Sample ID | LHSMW23R-230209 | | LHSMW23R-230209-FD | | LHSMW25-230209 | |
| | Sample Date | 2/9/2023 | | 2/9/2023 | | 2/9/2023 | |
| | Location Description | Site 46 - South, Within Site Boundary, Intermediate Zone | | | | Site 46 - East, Within Site Boundary, Intermediate Zone | |
| **Analyte** | **Units** | **MCL** | **Result** | **Val Qual** | **Result** | **Val Qual** | **Result** | **Val Qual** |
| **Field Measurements** | | | | | | | | |
| Dissolved oxygen | mg/L | NV | 0.03 | | 0.03 | | 0.05 | |
| Oxidation Reduction Potential | mV | NV | 105 | | 105 | | 18 | |
| pH | Std. Units | NV | 5.8 | | 5.8 | | 6.43 | |
| **Dissolved Gases (RSK-175)** | | | | | | | | |
| Carbon dioxide | µg/L | NV | NA | | NA | | NA | |
| Ethane | µg/L | NV | NA | | NA | | NA | |
| Ethylene | µg/L | NV | NA | | NA | | NA | |
| Methane | µg/L | NV | NA | | NA | | NA | |
| **General Chemistry (SM5310B/SW9056A)** | | | | | | | | |
| Chloride | mg/L | NV | NA | | NA | | NA | |
| Nitrate | mg/L | NV | NA | | NA | | NA | |
| Sulfate | mg/L | NV | NA | | NA | | NA | |
| Total organic carbon | mg/L | NV | NA | | NA | | NA | |
| **Volatile Organic Compounds (Method SW8260C)** | | | | | | | | |
| cis-1,2-Dichloroethene | µg/L | 70 | 0.77 | J | 0.86 | J | < 0.5 | U |
| Trichloroethene | µg/L | 5 | 0.76 | J | 0.78 | J | < 0.5 | U |
| Vinyl chloride | µg/L | 2 | < 0.5 | U | < 0.5 | U | < 0.5 | U |

**Notes:**

Blue highlighting indicates concentrations above the MCL

1 - Samples for nitrate from 2/7/2023 and 2/9/2023 could not be analyzed within the hold time due to an instrument outage. Samples were recollected for nitrate from the affected locations on 2/28/23.

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

U - Undetected: The analyte was analyzed for, but not detected.

UJ - Undetected estimated: The analyte was analyzed for but, was not detected. Even though the analyte was not detected, certain discrepancies in meeting analyte specific quality control were not met.

MCL - Maximum Contaminant Level

ug/L - micrograms per liter

mg/L - milligrams per liter

mV - millivolts

Std. Units - standard pH units

< - The analyte was not detected above the concentration shown

Val Qual - Validation Qualifier

NA - not analyzed

NV - no value; MCLs only shown for contaminants of concern

ID - identification

FD - field duplicate

# Table 2-6
## Historical COC Concentrations 1998–2023

| Location Code | | | 46WW01 | | | | | | | | | | | | 46WW02 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | | | 46WW01-981001 | | 46WW01-981107 | | 46WW01-981107FD | | 46WW01-FEB2007 | | 46WW01-032916 | | 46WW01-080416 | | 46WW02-981106 | | 46WW02-FEB2007 | | 46WW02-102808 | | 46WW02-052813 | | 46WW02-091913 | |
| Sample Date | | | 10/1/1998 | | 11/7/1998 | | 11/7/1998 | | 2/19/2007 | | 3/29/2016 | | 8/4/2016 | | 11/6/1998 | | 2/20/2007 | | 10/28/2008 | | 5/28/2013 | | 9/19/2013 | |
| Location Description | | | Site 46 - Central, inside site boundary. Shallow Zone. | | | | | | | | | | | | Site 46 - Central, inside site boundary. Intermediate Zone. | | | | | | | | | |
| Analyte | Units | MCL | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual |
| cis-1,2-Dichloroethene | µg/L | 70 | 1.2 | | < 1 | U | < 1 | U | < 0.83 | U | < 0.5 | U | < 0.5 | U | 1 | | 1.4 | J | 1.45 | | 1.76 | | 1.91 | |
| Trichloroethene | µg/L | 5 | 6.6 | | < 1 | U | < 1 | U | < 0.63 | U | < 0.5 | U | < 0.5 | U | 24 | | 28.9 | | 31.2 | | 30 | | 37.4 | |
| Vinyl chloride | µg/L | 2 | < 1 | U | < 1 | U | < 1 | U | < 0.32 | U | < 0.5 | U | < 0.5 | U | < 1 | U | < 0.32 | U | < 0.25 | U | 0.495 | J | 0.465 | J |

Notes:

Blue Highlighting Indicates concentrations above the MCL/PCL.
Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.
µg/L - micrograms per liter
COC - contaminant of concern
E - east
FD - field duplicate
H - Result may be biased high. Details are provided in the validation report.
ID - Identifier
J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
N - north
NE - northeast
NNW - north-northwest
SE - southeast
SW - southwest
U - Undetected: The analyte was analyzed for, but not detected.
UJ - Undetected estimated: The analyte was analyzed for but, was not detected. Even though the analyte was not detected, certain discrepancies in meeting analyte specific quality control were not met.
MCL - Maximum Contaminant Level
Val Qual - validation qualifier
W - west

# Table 2-6
## Historical COC Concentrations 1998–2023

| Location Code | | | 46WW02 | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | | | 46WW02-012714 | | 46WW02-071514 | | 46WW02-111814 | | 46WW02-020515 | | 46WW02-050615 | | 46WW02-080515 | | 46WW02-020116 | | 46WW02-080416 | | 46WW02-022018 | | 46WW02-180829 | | 46WW02-190221 | |
| Sample Date | | | 1/27/2014 | | 7/15/2014 | | 11/18/2014 | | 2/5/2015 | | 5/6/2015 | | 8/5/2015 | | 2/1/2016 | | 8/4/2016 | | 2/20/2018 | | 8/29/2018 | | 2/21/2019 | |
| Location Description | | | Site 46 - Central, inside site boundary. Intermediate Zone. | | | | | | | | | | | | | | | | | | | | | |
| Analyte | Units | MCL | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual |
| cis-1,2-Dichloroethene | µg/L | 70 | 2.09 | | 1.72 | | 1.97 | | 2.08 | | 1.44 | | 1.37 | | 1.28 | | 1.31 | | 0.52 | J | 1.4 | | 1 | |
| Trichloroethene | µg/L | 5 | 35.2 | | 32.8 | | 38.2 | | 37.6 | | 24 | | 20.3 | | 16.6 | | 20.7 | | 21 | | 24 | | 16 | |
| Vinyl chloride | µg/L | 2 | 0.556 | J | 0.493 | J | 0.501 | J | 0.432 | J | < 0.5 | U | < 0.5 | U | < 0.5 | U | 0.259 | J | < 0.5 | U | < 0.5 | U | < 0.5 | U |

Notes:

Blue Highlighting Indicates concentrations above the MCL/PCL.
Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.
µg/L - micrograms per liter
COC - contaminant of concern
E - east
FD - field duplicate
H - Result may be biased high. Details are provided in the validation report.
ID - Identifier
J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
N - north
NE - northeast
NNW - north-northwest
SE - southeast
SW - southwest
U - Undetected: The analyte was analyzed for, but not detected.
UJ - Undetected estimated: The analyte was analyzed for but, was not detected. Even though the analyte was not detected, certain discrepancies in meeting analyte specific quality control were not met.
MCL - Maximum Contaminant Level
Val Qual - validation qualifier
W - west

# Table 2-6
## Historical COC Concentrations 1998–2023

| Location Code | | | 46WW02 | | | | | | | | 46WW02 | | 46WW03 | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | | | 46WW02-190812 | | 46WW02-200213 | | 46WW02-210316 | | 46WW02-220215 | | 46WW02-230206 | | 46WW03-981106 | | 46WW03-053013 | | 46WW03-053013-FD | | 46WW03-092613 | | 46WW03-012514 | | 46WW03FD-012514 | | 46WW03-071714 | |
| Sample Date | | | 8/12/2019 | | 2/13/2020 | | 3/16/2021 | | 2/15/2022 | | 2/6/2023 | | 11/6/1998 | | 5/30/2013 | | 5/30/2013 | | 9/26/2013 | | 1/25/2014 | | 1/25/2014 | | 7/17/2014 | |
| Location Description | | | Site 46 - Central, inside site boundary. Intermediate Zone. | | | | | | | | | | Site 46 - Central, inside site boundary. Deep Zone | | | | | | | | | | | |
| Analyte | Units | MCL | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual |
| cis-1,2-Dichloroethene | µg/L | 70 | 1.1 | | 1.6 | | 1.4 | | 1.2 | | 1.8 | J | < 1 | U | < 0.25 | U | < 0.25 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U |
| Trichloroethene | µg/L | 5 | 17 | | 15 | | 25 | | 29 | | 29 | | < 1 | U | < 0.25 | U | < 0.25 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U |
| Vinyl chloride | µg/L | 2 | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | 0.43 | J | < 1 | U | < 0.25 | U | < 0.25 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U |

Notes:

Blue Highlighting Indicates concentrations above the MCL/PCL.
Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.

µg/L - micrograms per liter
COC - contaminant of concern
E - east
FD - field duplicate
H - Result may be biased high. Details are provided in the validation report.
ID - Identifier
J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
N - north
NE - northeast
NNW - north-northwest
SE - southeast
SW - southwest
U - Undetected: The analyte was analyzed for, but not detected.
UJ - Undetected estimated: The analyte was analyzed for but, was not detected. Even though the analyte was not detected, certain discrepancies in meeting analyte specific quality control were not met.
MCL - Maximum Contaminant Level
Val Qual - validation qualifier
W - west

## Table 2-6
## Historical COC Concentrations 1998–2023

| Location Code | | | 46WW03 | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | | | 46WW03-112014 | | 46WW03FD-112014 | | 46WW03-020515 | | 46WW03-050615 | | 46WW03-080515 | | 46WW03FD-080515 | | 46WW03-020316 | | 46WW03-080416 | | 46WW03-022618 | | 46WW03-180827 | | 46WW03-190220 | |
| Sample Date | | | 11/20/2014 | | 11/20/2014 | | 2/5/2015 | | 5/6/2015 | | 8/5/2015 | | 8/5/2015 | | 2/3/2016 | | 8/4/2016 | | 2/26/2018 | | 8/27/2018 | | 2/20/2019 | |
| Location Description | | | Site 46 - Central, inside site boundary. Deep Zone. | | | | | | | | | | | | | | | | | | | | | |
| Analyte | Units | MCL | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual |
| cis-1,2-Dichloroethene | µg/L | 70 | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U |
| Trichloroethene | µg/L | 5 | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U |
| Vinyl chloride | µg/L | 2 | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U |

Notes:

Blue Highlighting Indicates concentrations above the MCL/PCL.
Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.

µg/L - micrograms per liter
COC - contaminant of concern
E - east
FD - field duplicate
H - Result may be biased high. Details are provided in the validation report.
ID - Identifier
J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
N - north
NE - northeast
NNW - north-northwest
SE - southeast
SW - southwest
U - Undetected: The analyte was analyzed for, but not detected.
UJ - Undetected estimated: The analyte was analyzed for but, was not detected. Even though the analyte was not detected, certain discrepancies in meeting analyte specific quality control were not met.
MCL - Maximum Contaminant Level
Val Qual - validation qualifier
W - west

# Table 2-6
## Historical COC Concentrations 1998–2023

| Location Code | | | 46WW03 | | | | | | | | | | | | 46WW03 | | 46WW04 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | | | 46WW03-190812 | | 46WW03-200219 | | 46WW03-200219 FD | | 46WW03-210318 | | 46WW03-210318 FD | | 46WW03-220215 | | 46WW03-230206 | | 46WW04-981107 | | 46WW04-FEB2007 | | 46WW04F-052413 | | 46WW04-092113 | | 46WW04-012514 | |
| Sample Date | | | 8/12/2019 | | 2/19/2020 | | 2/19/2020 | | 3/18/2021 | | 3/18/2021 | | 2/15/2022 | | 2/6/2023 | | 11/7/1998 | | 2/19/2007 | | 5/24/2013 | | 9/21/2013 | | 1/25/2014 | |
| Location Description | | | Site 46 - Central, inside site boundary. Deep Zone. | | | | | | | | | | | | | | Site 46 - West, inside site boundary. Shallow Zone. | | | | | | | | | |
| Analyte | Units | MCL | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual |
| cis-1,2-Dichloroethene | µg/L | 70 | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 1 | U | < 0.83 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U |
| Trichloroethene | µg/L | 5 | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | 0.71 | J | < 0.63 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U |
| Vinyl chloride | µg/L | 2 | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 1 | U | < 0.32 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U |

Notes:

Blue Highlighting Indicates concentrations above the MCL/PCL.
Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.
µg/L - micrograms per liter
COC - contaminant of concern
E - east
FD - field duplicate
H - Result may be biased high. Details are provided in the validation report.
ID - Identifier
J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
N - north
NE - northeast
NNW - north-northwest
SE - southeast
SW - southwest
U - Undetected: The analyte was analyzed for, but not detected.
UJ - Undetected estimated: The analyte was analyzed for but, was not detected. Even though the analyte was not detected, certain discrepancies in meeting analyte specific quality control were not met.
MCL - Maximum Contaminant Level
Val Qual - validation qualifier
W - west

## Table 2-6
## Historical COC Concentrations 1998–2023

| Location Code | | | 46WW04 | | | | | | | | | | 46WW05 | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | | | 46WW04-071814 | | 46WW04-050615 | | 46WW04-080515 | | 46WW04-020316 | | 46WW04-220213 | | 46WW05-100908 | | 46WW05-053013 | | 46WW05-092413 | | 46WW05-012814 | | 46WW05-071614 | | 46WW05-111914 | |
| Sample Date | | | 7/18/2014 | | 5/6/2015 | | 8/5/2015 | | 2/3/2016 | | 2/13/2022 | | 10/9/2008 | | 5/30/2013 | | 9/24/2013 | | 1/28/2014 | | 7/16/2014 | | 11/19/2014 | |
| Location Description | | | Site 46 - West, inside site boundary. Shallow Zone. | | | | | | | | | | Site 46 - N, inside site boundary. Intermediate Zone. | | | | | | | | | | | |
| Analyte | Units | MCL | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual |
| cis-1,2-Dichloroethene | µg/L | 70 | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | 1.72 | | 10.2 | | 8.12 | | 10.3 | | 9.74 | | 9.55 | |
| Trichloroethene | µg/L | 5 | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | 5.9 | | 144 | | 112 | | 131 | | 130 | | 128 | |
| Vinyl chloride | µg/L | 2 | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.25 | U | 2.14 | | 1.79 | | 2.53 | | 2.09 | | 1.59 | |

Notes:

Blue Highlighting Indicates concentrations above the MCL/PCL.
Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.
µg/L - micrograms per liter
COC - contaminant of concern
E - east
FD - field duplicate
H - Result may be biased high. Details are provided in the validation report.
ID - Identifier
J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
N - north
NE - northeast
NNW - north-northwest
SE - southeast
SW - southwest
U - Undetected: The analyte was analyzed for, but not detected.
UJ - Undetected estimated: The analyte was analyzed for but, was not detected. Even though the analyte was not detected, certain discrepancies in meeting analyte specific quality control were not met.
MCL - Maximum Contaminant Level
Val Qual - validation qualifier
W - west

## Table 2-6
## Historical COC Concentrations 1998–2023

| Location Code | | | 46WW05 | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | | | 46WW05-020515 | | 46WW05-050515 | | 46WW05-080615 | | 46WW05-020116 | | 46WW05-080316 | | 46WW05-022618 | | 46WW05-022618 FD | | 46WW05-180828 | | 46WW05-190225 | | 46WW05-190813 | | 46WW05-200213 | |
| Sample Date | | | 2/5/2015 | | 5/5/2015 | | 8/6/2015 | | 2/1/2016 | | 8/3/2016 | | 2/26/2018 | | 2/26/2018 | | 8/28/2018 | | 2/25/2019 | | 8/13/2019 | | 2/13/2020 | |
| Location Description | | | Site 46 - N, inside site boundary. Intermediate Zone. | | | | | | | | | | | | | | | | | | | | | |
| Analyte | Units | MCL | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual |
| cis-1,2-Dichloroethene | µg/L | 70 | 10.9 | | 7 | | 3.87 | | 3.12 | | 1.86 | | < 0.5 | U | 0.62 | J | < 0.5 | U | 2.2 | | 4.8 | | 1.6 | |
| Trichloroethene | µg/L | 5 | 143 | | 80.5 | | 34 | | 46.4 | | 23.6 | | 14 | | 14 | | 6.4 | | 27 | | 62 | | 19 | |
| Vinyl chloride | µg/L | 2 | 1.72 | | 0.956 | J | 0.274 | J | 0.832 | J | 0.522 | J | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | 1.2 | | 0.65 | J |

Notes:

Blue Highlighting Indicates concentrations above the MCL/PCL.
Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.

µg/L - micrograms per liter
COC - contaminant of concern
E - east
FD - field duplicate
H - Result may be biased high. Details are provided in the validation report.
ID - Identifier
J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
N - north
NE - northeast
NNW - north-northwest
SE - southeast
SW - southwest
U - Undetected: The analyte was analyzed for, but not detected.
UJ - Undetected estimated: The analyte was analyzed for but, was not detected. Even though the analyte was not detected, certain discrepancies in meeting analyte specific quality control were not met.
MCL - Maximum Contaminant Level
Val Qual - validation qualifier
W - west

## Table 2-6
## Historical COC Concentrations 1998–2023

| | Location Code | 46WW05 | | | 46WW05 | | | 46WW06 | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Sample ID | 46WW05-210316 | | 46WW05-220215 | | | 46WW05-230207 | | 46WW06-100908 | | 46WW06-052413 | | 46WW06-092513 | | 46WW06-012514 | | 46WW06-071714 | | 46WW06FD-071714 | | 46WW06-111914 | | 46WW06FD-111914 | | 46WW06-020615 | |
| | Sample Date | 3/16/2021 | | 2/15/2022 | | | 2/7/2023 | | 10/9/2008 | | 5/24/2013 | | 9/25/2013 | | 1/25/2014 | | 7/17/2014 | | 7/17/2014 | | 11/19/2014 | | 11/19/2014 | | 2/6/2015 | |
| | Location Description | Site 46 - N, inside site boundary. Intermediate Zone. | | | | | | | Site 46 - W, inside site boundary. Intermediate Zone. | | | | | | | | | | | | | | | | | |
| Analyte | Units | MCL | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual |
| cis-1,2-Dichloroethene | µg/L | 70 | 1.6 | | 0.7 | J | 1.8 | | < 0.25 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U |
| Trichloroethene | µg/L | 5 | 20 | | 18 | | 33 | | < 0.25 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U |
| Vinyl chloride | µg/L | 2 | < 0.5 | U | < 0.5 | U | < 1 | U | < 0.25 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U |

Notes:

Blue Highlighting Indicates concentrations above the MCL/PCL.
Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.
µg/L - micrograms per liter
COC - contaminant of concern
E - east
FD - field duplicate
H - Result may be biased high. Details are provided in the validation report.
ID - Identifier
J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
N - north
NE - northeast
NNW - north-northwest
SE - southeast
SW - southwest
U - Undetected: The analyte was analyzed for, but not detected.
UJ - Undetected estimated: The analyte was analyzed for but, was not detected. Even though the analyte was not detected, certain discrepancies in meeting analyte specific quality control were not met.
MCL - Maximum Contaminant Level
Val Qual - validation qualifier
W - west

## Table 2-6
## Historical COC Concentrations 1998–2023

| Location Code | | | 46WW06 | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | | | 46WW06-050115 | | 46WW06-080415 | | 46WW06-020216 | | 46WW06-080416 | | 46WW06FD-080416 | | 46WW06-022618 | | 46WW06-180827 | | 46WW06-190220 | | 46WW06-190813 | | 46WW06-200219 | | 46WW06-210315 | |
| Sample Date | | | 5/1/2015 | | 8/4/2015 | | 2/2/2016 | | 8/4/2016 | | 8/4/2016 | | 2/26/2018 | | 8/27/2018 | | 2/20/2019 | | 8/13/2019 | | 2/19/2020 | | 3/15/2021 | |
| Location Description | | | Site 46 - W, inside site boundary. Intermediate Zone. | | | | | | | | | | | | | | | | | | | | | |
| Analyte | Units | MCL | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual |
| cis-1,2-Dichloroethene | µg/L | 70 | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U |
| Trichloroethene | µg/L | 5 | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | 0.65 | J | < 0.5 | U |
| Vinyl chloride | µg/L | 2 | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U |

Notes:

Blue Highlighting Indicates concentrations above the MCL/PCL.
Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.

µg/L - micrograms per liter
COC - contaminant of concern
E - east
FD - field duplicate
H - Result may be biased high. Details are provided in the validation report.
ID - Identifier
J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
N - north
NE - northeast
NNW - north-northwest
SE - southeast
SW - southwest
U - Undetected: The analyte was analyzed for, but not detected.
UJ - Undetected estimated: The analyte was analyzed for but, was not detected. Even though the analyte was not detected, certain discrepancies in meeting analyte specific quality control were not met.
MCL - Maximum Contaminant Level
Val Qual - validation qualifier
W - west

# Table 2-6
## Historical COC Concentrations 1998–2023

| | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Location Code | | | 46WW06 | | 46WW06 | | 46WW07 | | | | | | | | | | | | | | | | |
| Sample ID | | | 46WW06-220213 | | 46WW06-230209 | | 46WW07-052513 | | 46WW07-052513-FD | | 46WW07-091913 | | 46WW07-012714 | | 46WW07-071814 | | 46WW07FD-071814 | | 46WW07-112014 | | 46WW07-020315 | | 46WW07-050115 | |
| Sample Date | | | 2/13/2022 | | 2/9/2023 | | 5/25/2013 | | 5/25/2013 | | 9/21/2013 | | 1/27/2014 | | 7/18/2014 | | 7/18/2014 | | 11/20/2014 | | 2/3/2015 | | 5/1/2015 | |
| Location Description | | | Site 46 - W, inside site boundary. Intermediate Zone. | | | | Site 46 - N, inside site boundary. Intermediate Zone. | | | | | | | | | | | | | | | | | |
| Analyte | Units | MCL | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual |
| cis-1,2-Dichloroethene | µg/L | 70 | < 0.5 | U | < 1 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U |
| Trichloroethene | µg/L | 5 | < 0.5 | U | < 1 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U |
| Vinyl chloride | µg/L | 2 | < 0.5 | U | < 1 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U |

Notes:

Blue Highlighting Indicates concentrations above the MCL/PCL.
Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.
µg/L - micrograms per liter
COC - contaminant of concern
E - east
FD - field duplicate
H - Result may be biased high. Details are provided in the validation report.
ID - Identifier
J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
N - north
NE - northeast
NNW - north-northwest
SE - southeast
SW - southwest
U - Undetected: The analyte was analyzed for, but not detected.
UJ - Undetected estimated: The analyte was analyzed for but, was not detected. Even though the analyte was not detected, certain discrepancies in meeting analyte specific quality control were not met.
MCL - Maximum Contaminant Level
Val Qual - validation qualifier
W - west

## Table 2-6
## Historical COC Concentrations 1998–2023

| Location Code | | | 46WW07 | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | | | 46WW07-080415 | | 46WW07-020216 | | 46WW07-080216 | | 46WW07-022318 | | 46WW07-180827 | | 46WW07-190220 | | 46WW07-190812 | | 46WW07-200218 | | 46WW07-200218-FD | | 46WW07-210318 | | 46WW07-210318-FD | |
| Sample Date | | | 8/4/2015 | | 2/2/2016 | | 8/2/2016 | | 2/23/2018 | | 8/27/2018 | | 2/20/2019 | | 8/12/2019 | | 2/18/2020 | | 2/18/2020 | | 3/18/2021 | | 3/18/2021 | |
| Location Description | | | Site 46 - N, inside site boundary. Intermediate Zone. | | | | | | | | | | | | | | | | | | | | | |
| Analyte | Units | MCL | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual |
| cis-1,2-Dichloroethene | µg/L | 70 | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U |
| Trichloroethene | µg/L | 5 | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U |
| Vinyl chloride | µg/L | 2 | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U |

Notes:

Blue Highlighting Indicates concentrations above the MCL/PCL.
Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.

µg/L - micrograms per liter
COC - contaminant of concern
E - east
FD - field duplicate
H - Result may be biased high. Details are provided in the validation report.
ID - Identifier
J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
N - north
NE - northeast
NNW - north-northwest
SE - southeast
SW - southwest
U - Undetected: The analyte was analyzed for, but not detected.
UJ - Undetected estimated: The analyte was analyzed for but, was not detected. Even though the analyte was not detected, certain discrepancies in meeting analyte specific quality control were not met.
MCL - Maximum Contaminant Level
Val Qual - validation qualifier
W - west

# Table 2-6
## Historical COC Concentrations 1998–2023

| | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Location Code | | | 46WW07 | | 46WW07 | | 46WW08 | | | | | | | | | | | | | | | | | | | |
| Sample ID | | | 46WW07-220211 | | 46WW07-230206 | | 46WW08-052513 | | 46WW08-092113 | | 46WW08-092113-FD | | 46WW08-012814 | | 46WW08FD-012814 | | 46WW08-071814 | | 46WW08-112014 | | 46WW08-020315 | | 46WW08FD-020315 | | 46WW08-050115 | |
| Sample Date | | | 2/11/2022 | | 2/6/2023 | | 5/25/2013 | | 9/21/2013 | | 9/21/2013 | | 1/28/2014 | | 1/28/2014 | | 7/18/2014 | | 11/20/2014 | | 2/3/2015 | | 2/3/2015 | | 5/1/2015 | |
| Location Description | | | Site 46 - N, inside site boundary. Intermediate Zone. | | | | Site 46 - NNW, inside site boundary. Intermediate Zone. | | | | | | | | | | | | | | | | | | | |
| Analyte | Units | MCL | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual |
| cis-1,2-Dichloroethene | µg/L | 70 | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U |
| Trichloroethene | µg/L | 5 | 1 | J | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U |
| Vinyl chloride | µg/L | 2 | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U |

Notes:

Blue Highlighting Indicates concentrations above the MCL/PCL.

Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.

µg/L - micrograms per liter

COC - contaminant of concern

E - east

FD - field duplicate

H - Result may be biased high. Details are provided in the validation report.

ID - Identifier

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

N - north

NE - northeast

NNW - north-northwest

SE - southeast

SW - southwest

U - Undetected: The analyte was analyzed for, but not detected.

UJ - Undetected estimated: The analyte was analyzed for but, was not detected. Even though the analyte was not detected, certain discrepancies in meeting analyte specific quality control were not met.

MCL - Maximum Contaminant Level

Val Qual - validation qualifier

W - west

# Table 2-6
## Historical COC Concentrations 1998–2023

| Location Code | | | 46WW08 | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | | | 46WW08FD-050115 | | 46WW08-080415 | | 46WW08-020316 | | 46WW08-080216 | | 46WW08-022318 | | 46WW08-022318-FD | | 46WW08-180827 | | 46WW08-180827FD | | 46WW08-190220 | | 46WW08-190813 | | 46WW08-190813-FD | |
| Sample Date | | | 5/1/2015 | | 8/4/2015 | | 2/3/2016 | | 8/2/2016 | | 2/23/2018 | | 2/23/2018 | | 8/27/2018 | | 8/27/2018 | | 2/20/2019 | | 8/13/2019 | | 8/13/2019 | |
| Location Description | | | Site 46 - NNW, inside site boundary. Intermediate Zone. | | | | | | | | | | | | | | | | | | | | | |
| Analyte | Units | MCL | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual |
| cis-1,2-Dichloroethene | µg/L | 70 | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U |
| Trichloroethene | µg/L | 5 | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U |
| Vinyl chloride | µg/L | 2 | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U |

Notes:

Blue Highlighting Indicates concentrations above the MCL/PCL.
Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.

µg/L - micrograms per liter
COC - contaminant of concern
E - east
FD - field duplicate
H - Result may be biased high. Details are provided in the validation report.
ID - Identifier
J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
N - north
NE - northeast
NNW - north-northwest
SE - southeast
SW - southwest
U - Undetected: The analyte was analyzed for, but not detected.
UJ - Undetected estimated: The analyte was analyzed for but, was not detected. Even though the analyte was not detected, certain discrepancies in meeting analyte specific quality control were not met.
MCL - Maximum Contaminant Level
Val Qual - validation qualifier
W - west

# Table 2-6
## Historical COC Concentrations 1998–2023

| Location Code | | | 46WW08 | | | | | | 46WW08 | | 46WW09 | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | | | 46WW08-200218 | | 46WW08-210315 | | 46WW08-220213 | | 46WW08-230209 | | 46WW09-092413 | | 46WW09-012714 | | 46WW09-071514 | | 46WW09-111914 | | 46WW09-020515 | | 46WW09-050515 | | 46WW09-080615 | | 46WW09-020216 | |
| Sample Date | | | 2/18/2020 | | 3/15/2021 | | 2/13/2022 | | 2/9/2023 | | 9/24/2013 | | 1/27/2014 | | 7/15/2014 | | 11/19/2014 | | 2/5/2015 | | 5/5/2015 | | 8/6/2015 | | 2/2/2016 | |
| Location Description | | | Site 46 - NNW, inside site boundary. Intermediate Zone. | | | | | | | | Site 46 - Central, within site boundary. Intermediate Zone. | | | | | | | | | | | | | | | |
| Analyte | Units | MCL | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual |
| cis-1,2-Dichloroethene | µg/L | 70 | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 1 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U |
| Trichloroethene | µg/L | 5 | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 1 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U |
| Vinyl chloride | µg/L | 2 | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 1 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U |

Notes:

Blue Highlighting Indicates concentrations above the MCL/PCL.
Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.
µg/L - micrograms per liter
COC - contaminant of concern
E - east
FD - field duplicate
H - Result may be biased high. Details are provided in the validation report.
ID - Identifier
J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
N - north
NE - northeast
NNW - north-northwest
SE - southeast
SW - southwest
U - Undetected: The analyte was analyzed for, but not detected.
UJ - Undetected estimated: The analyte was analyzed for but, was not detected. Even though the analyte was not detected, certain discrepancies in meeting analyte specific quality control were not met.
MCL - Maximum Contaminant Level
Val Qual - validation qualifier
W - west

# Table 2-6
## Historical COC Concentrations 1998–2023

| Location Code | | | 46WW09 | | | | | | | | | | | | | | | | | | 46WW09 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | | | 46WW09-080316 | | 46WW09-022218 | | 46WW09-180828 | | 46WW09-190225 | | 46WW09-190225 FD | | 46WW09-190812 | | 46WW09-200213 | | 46WW09-220215 | | 46WW09-220215-FD | | 46WW09-230207 | | 46WW09-230207-FD | |
| Sample Date | | | 8/3/2016 | | 2/22/2018 | | 8/28/2018 | | 2/25/2019 | | 2/25/2019 | | 8/12/2019 | | 2/13/2020 | | 2/15/2022 | | 2/15/2022 | | 2/7/2023 | | 2/7/2023 | |
| Location Description | | | Site 46 - Central, within site boundary. Intermediate Zone. | | | | | | | | | | | | | | | | | | Site 46 - Central, Within Site Boundary. Intermediate Zone | | | |
| Analyte | Units | MCL | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual |
| cis-1,2-Dichloroethene | µg/L | 70 | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 1 | U | < 1 | U |
| Trichloroethene | µg/L | 5 | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 1 | U | < 1 | U |
| Vinyl chloride | µg/L | 2 | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 1 | U | < 1 | U |

Notes:

Blue Highlighting Indicates concentrations above the MCL/PCL.
Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.
µg/L - micrograms per liter
COC - contaminant of concern
E - east
FD - field duplicate
H - Result may be biased high. Details are provided in the validation report.
ID - Identifier
J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
N - north
NE - northeast
NNW - north-northwest
SE - southeast
SW - southwest
U - Undetected: The analyte was analyzed for, but not detected.
UJ - Undetected estimated: The analyte was analyzed for but, was not detected. Even though the analyte was not detected, certain discrepancies in meeting analyte specific quality control were not met.
MCL - Maximum Contaminant Level
Val Qual - validation qualifier
W - west

## Table 2-6
## Historical COC Concentrations 1998–2023

| Location Code | | | 46WW10 | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | | | 46WW10-052513 | | 46WW10-092113 | | 46WW10-012514 | | 46WW10-071714 | | 46WW10-112014 | | 46WW10-020415 | | 46WW10-050615 | | 46WW10FD-050615 | | 46WW10-080515 | | 46WW10-020316 | | 46WW10-080416 | |
| Sample Date | | | 5/25/2013 | | 9/21/2013 | | 1/25/2014 | | 7/17/2014 | | 11/20/2014 | | 2/4/2015 | | 5/6/2015 | | 5/6/2015 | | 8/5/2015 | | 2/3/2016 | | 8/4/2016 | |
| Location Description | | | Site 46 - West, inside site boundary. Shallow Zone. | | | | | | | | | | | | | | | | | | | | | |
| Analyte | Units | MCL | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual |
| cis-1,2-Dichloroethene | µg/L | 70 | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U |
| Trichloroethene | µg/L | 5 | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U |
| Vinyl chloride | µg/L | 2 | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U |

Notes:

Blue Highlighting Indicates concentrations above the MCL/PCL.
Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.

µg/L - micrograms per liter
COC - contaminant of concern
E - east
FD - field duplicate
H - Result may be biased high. Details are provided in the validation report.
ID - Identifier
J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
N - north
NE - northeast
NNW - north-northwest
SE - southeast
SW - southwest
U - Undetected: The analyte was analyzed for, but not detected.
UJ - Undetected estimated: The analyte was analyzed for but, was not detected. Even though the analyte was not detected, certain discrepancies in meeting analyte specific quality control were not met.
MCL - Maximum Contaminant Level
Val Qual - validation qualifier
W - west

## Table 2-6
## Historical COC Concentrations 1998–2023

| Location Code | | | 46WW10 | | 46WW11 | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | | | 46WW10-220213 | | 46WW11-081413 | | 46WW11-091913 | | 46WW11-012814 | | 46WW11-071614 | | 46WW11-111814 | | 46WW11-020415 | | 46WW11-050615 | | 46WW11-080515 | | 46WW11-020116 | | 46WW11-080316 | |
| Sample Date | | | 2/13/2022 | | 8/14/2013 | | 9/19/2013 | | 1/28/2014 | | 7/16/2014 | | 11/18/2014 | | 2/4/2015 | | 5/6/2015 | | 8/5/2015 | | 2/1/2016 | | 8/3/2016 | |
| Location Description | | | Site 46 - West, inside site boundary. Shallow Zone. | | Site 46 - Central, within site boundary. Shallow Zone. | | | | | | | | | | | | | | | | | | | |
| Analyte | Units | MCL | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual |
| cis-1,2-Dichloroethene | µg/L | 70 | < 0.5 | U | 1.56 | | 1.11 | | 2.04 | | 2.12 | | 1.28 | | 1.99 | | 1.4 | | 0.749 | J | 0.578 | J | 0.325 | J |
| Trichloroethene | µg/L | 5 | < 0.5 | U | 85.9 | | 79.8 | | 87.5 | | 90.6 | | 70.7 | | 63.6 | | 45.3 | | 26.3 | | 20.5 | | 21.2 | |
| Vinyl chloride | µg/L | 2 | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U |

Notes:

Blue Highlighting Indicates concentrations above the MCL/PCL.
Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.

µg/L - micrograms per liter

COC - contaminant of concern

E - east

FD - field duplicate

H - Result may be biased high. Details are provided in the validation report.

ID - Identifier

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

N - north

NE - northeast

NNW - north-northwesl

SE - southeast

SW - southwest

U - Undetected: The analyte was analyzed for, but not detected.

UJ - Undetected estimated: The analyte was analyzed for but, was not detected. Even though the analyte was not detected, certain discrepancies in meeting analyte specific quality control were not met.

MCL - Maximum Contaminant Level

Val Qual - validation qualifier

W - west

## Table 2-6
## Historical COC Concentrations 1998–2023

| Location Code | | | 46WW11 | | | | | | | | | | | | | | | | | | | | | | 46WW11 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | | | 46WW11-022018 | | 46WW11-180829 | | 46WW11-180829FD | | 46WW11-190221 | | 46WW11-190812 | | 46WW11-190812FD | | 46WW11-200213 | | 46WW11-200213FD | | 46WW11-210316 | | 46WW11-210316FD | | 46WW11-220214 | | 46WW11-230209 | |
| Sample Date | | | 2/20/2018 | | 8/29/2018 | | 8/29/2018 | | 2/21/2019 | | 8/12/2019 | | 8/12/2019 | | 2/13/2020 | | 2/13/2020 | | 3/16/2021 | | 3/16/2021 | | 2/14/2022 | | 2/9/2023 | |
| Location Description | | | Site 46 - Central, within site boundary. Shallow Zone. | | | | | | | | | | | | | | | | | | | | | | Site 46 - Central, Within Site Boundary, Shallow Zone | |
| Analyte | Units | MCL | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual |
| cis-1,2-Dichloroethene | µg/L | 70 | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 1 | U |
| Trichloroethene | µg/L | 5 | 18 | | 13 | | 12 | | 13 | | 24 | | 24 | | 14 | | 14 | | 19 | | 19 | | 8.5 | | 22 | |
| Vinyl chloride | µg/L | 2 | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 1 | U |

Notes:

Blue Highlighting Indicates concentrations above the MCL/PCL.
Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.
µg/L - micrograms per liter
COC - contaminant of concern
E - east
FD - field duplicate
H - Result may be biased high. Details are provided in the validation report.
ID - Identifier
J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
N - north
NE - northeast
NNW - north-northwest
SE - southeast
SW - southwest
U - Undetected: The analyte was analyzed for, but not detected.
UJ - Undetected estimated: The analyte was analyzed for but, was not detected. Even though the analyte was not detected, certain discrepancies in meeting analyte specific quality control were not met.
MCL - Maximum Contaminant Level
Val Qual - validation qualifier
W - west

## Table 2-6
## Historical COC Concentrations 1998–2023

| Location Code | | | 46WW13 | | | | 46WW14 | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | | | 46WW13-052913 | | 46WW13-092413 | | 46WW14-052913 | | 46WW14-091913 | | 46WW14-012714 | | 46WW14-071514 | | 46WW14-111914 | | 46WW14-020615 | | 46WW14FD-020615 | | 46WW14-050515 | | 46WW14-020216 | |
| Sample Date | | | 5/29/2013 | | 9/24/2013 | | 5/29/2013 | | 9/19/2013 | | 1/27/2014 | | 7/15/2014 | | 11/19/2014 | | 2/6/2015 | | 2/6/2015 | | 5/5/2015 | | 2/2/2016 | |
| Location Description | | | Site 46 - SE, within site boundary. Shallow Zone. | | | | Site 46 - NE, within site boundary. Intermediate Zone. | | | | | | | | | | | | | | | | | |
| Analyte | Units | MCL | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual |
| cis-1,2-Dichloroethene | µg/L | 70 | 37.3 | | 35.5 | | < 0.25 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U |
| Trichloroethene | µg/L | 5 | 107 | | 103 | | < 0.25 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U |
| Vinyl chloride | µg/L | 2 | 13.1 | | 9.83 | | < 0.25 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U |

Notes:

Blue Highlighting Indicates concentrations above the MCL/PCL.
Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.
µg/L - micrograms per liter
COC - contaminant of concern
E - east
FD - field duplicate
H - Result may be biased high. Details are provided in the validation report.
ID - Identifier
J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
N - north
NE - northeast
NNW - north-northwest
SE - southeast
SW - southwest
U - Undetected: The analyte was analyzed for, but not detected.
UJ - Undetected estimated: The analyte was analyzed for but, was not detected. Even though the analyte was not detected, certain discrepancies in meeting analyte specific quality control were not met.
MCL - Maximum Contaminant Level
Val Qual - validation qualifier
W - west

# Table 2-6
## Historical COC Concentrations 1998–2023

| Location Code | | | 46WW14 | | | | | | | | | | 46WW14 | | 46WW16 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | | | 46WW14FD-020216 | | 46WW14-080216 | | 46WW14FD-080216 | | 46WW14-210315 | | 46WW14-220211 | | 46WW14-230206 | | 46WW16-070114 | | 46WW16-071614 | | 46WW16-111814 | | 46WW16-050515 | | 46WW16-080615 | | 46WW16-020116 | |
| Sample Date | | | 2/2/2016 | | 8/2/2016 | | 8/2/2016 | | 3/15/2021 | | 2/11/2022 | | 2/6/2023 | | 7/1/2014 | | 7/16/2014 | | 11/18/2014 | | 5/5/2015 | | 8/6/2015 | | 2/1/2016 | |
| Location Description | | | Site 46 - NE, within site boundary. Intermediate Zone. | | | | | | | | | | Site 45 - Northeast, Within Site Boundary, Intermediate Zone | | Site 46 - N, within site boundary. Intermediate Zone. | | | | | | | | | |
| Analyte | Units | MCL | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual |
| cis-1,2-Dichloroethene | µg/L | 70 | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U |
| Trichloroethene | µg/L | 5 | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U |
| Vinyl chloride | µg/L | 2 | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U |

Notes:

Blue Highlighting Indicates concentrations above the MCL/PCL.
Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.

µg/L - micrograms per liter
COC - contaminant of concern
E - east
FD - field duplicate
H - Result may be biased high. Details are provided in the validation report.
ID - Identifier
J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
N - north
NE - northeast
NNW - north-northwest
SE - southeast
SW - southwest
U - Undetected: The analyte was analyzed for, but not detected.
UJ - Undetected estimated: The analyte was analyzed for but, was not detected. Even though the analyte was not detected, certain discrepancies in meeting analyte specific quality control were not met.
MCL - Maximum Contaminant Level
Val Qual - validation qualifier
W - west

# Table 2-6
## Historical COC Concentrations 1998–2023

| Location Code | | | 46WW16 | | | | | | | | | | | | | | | | 46WW16 | | 46WW17 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | | | 46WW16-080316 | | 46WW16-022218 | | 46WW16-180828 | | 46WW16-190221 | | 46WW16-190813 | | 46WW16-200213 | | 46WW16-210316 | | 46WW16-220214 | | 46WW16-230206 | | 46WW17-200707 | | 46WW17-210315 | | 46WW17-220211 | | 46WW17-220211-FD | |
| Sample Date | | | 8/3/2016 | | 2/22/2018 | | 8/28/2018 | | 2/21/2019 | | 8/13/2019 | | 2/13/2020 | | 3/16/2021 | | 2/14/2022 | | 2/6/2023 | | 7/7/2020 | | 3/15/2021 | | 2/11/2022 | | 2/11/2022 | |
| Location Description | | | Site 46 - N, within site boundary. Intermediate Zone. | | | | | | | | | | | | | | | | Site 46 - North, Within Site Boundary, Intermediate Zone | | Site 46 - Northeast, Within Site Boundary, Shallow/Intermediate Zone. | | | | | | | |
| Analyte | Units | MCL | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual |
| cis-1,2-Dichloroethene | µg/L | 70 | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | UJ | < 0.5 | U | < 0.5 | U | 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U |
| Trichloroethene | µg/L | 5 | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U |
| Vinyl chloride | µg/L | 2 | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U |

Notes:

Blue Highlighting Indicates concentrations above the MCL/PCL.
Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.

µg/L - micrograms per liter
COC - contaminant of concern
E - east
FD - field duplicate
H - Result may be biased high. Details are provided in the validation report.
ID - Identifier
J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
N - north
NE - northeast
NNW - north-northwest
SE - southeast
SW - southwest
U - Undetected: The analyte was analyzed for, but not detected.
UJ - Undetected estimated: The analyte was analyzed for but, was not detected. Even though the analyte was not detected, certain discrepancies in meeting analyte specific quality control were not met.
MCL - Maximum Contaminant Level
Val Qual - validation qualifier
W - west

# Table 2-6
## Historical COC Concentrations 1998–2023

| Location Code | | | 46WW17 | | LHSMW08 | | | | | | | | LHSMW11 | | | | | | | | LHSMW12 | | | | LHSMW14 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | | | 46WW17-230209 | | LHSMW08-960813 | | LHSMW08-960813FD | | LHSMW08-980513 | | LHSMW08-092113 | | LHSMW11-960813 | | LHSMW11-980514 | | LHSMW11-980514FD | | LHSMW11-031508 | | LHSMW12-960813 | | LHSMW12-980514 | | LHSMW14-941129 | | LHSMW14-960206 | |
| Sample Date | | | 2/9/2023 | | 8/13/1996 | | 8/13/1996 | | 5/13/1998 | | 9/21/2013 | | 8/13/1996 | | 5/14/1998 | | 5/14/1998 | | 3/15/2008 | | 8/13/1996 | | 5/14/1998 | | 11/29/1994 | | 2/6/1996 | |
| Location Description | | | | | Site 46 - South, outside of site boundary. Intermediate Zone. | | | | | | | | Site 46 - South, outside of site boundary. Shallow Zone. | | | | | | | | Site 46 - South, outside of site boundary. Shallow Zone. | | | | Site 46 - West, outside of site boundary. Shallow Zone. | | | |
| Analyte | Units | MCL | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual |
| cis-1,2-Dichloroethene | µg/L | 70 | < 1 | U | < 0.2 | U | < 0.2 | U | < 1 | U | < 0.5 | U | < 0.2 | U | < 1 | U | < 1 | U | < 0.25 | U | < 0.2 | U | < 1 | U | | | < 1 | U |
| Trichloroethene | µg/L | 5 | < 1 | U | < 0.25 | U | < 0.25 | U | < 1 | U | < 0.5 | U | < 0.25 | U | < 1 | U | < 1 | U | < 0.25 | U | < 0.25 | U | < 1 | U | < 5 | U | < 1 | U |
| Vinyl chloride | µg/L | 2 | < 1 | U | < 0.24 | U | < 0.24 | U | < 1 | U | < 0.5 | U | < 0.24 | U | < 1 | U | < 1 | U | < 0.25 | U | < 0.24 | U | < 1 | U | | | < 1 | U |

Notes:

Blue Highlighting Indicates concentrations above the MCL/PCL.
Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.

µg/L - micrograms per liter
COC - contaminant of concern
E - east
FD - field duplicate
H - Result may be biased high. Details are provided in the validation report.
ID - Identifier
J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
N - north
NE - northeast
NNW - north-northwest
SE - southeast
SW - southwest
U - Undetected: The analyte was analyzed for, but not detected.
UJ - Undetected estimated: The analyte was analyzed for but, was not detected. Even though the analyte was not detected, certain discrepancies in meeting analyte specific quality control were not met.
MCL - Maximum Contaminant Level
Val Qual - validation qualifier
W - west

# Table 2-6
## Historical COC Concentrations 1998–2023

| Location Code | | | LHSMW14 | | | | | | | | LHSMW15 | | | | | | | | LHSMW16 | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | | | LHSMW14-960814 | | LHSMW14-960814FD | | LHSMW14-980514 | | LHSMW14-092413 | | LHSMW15-960206 | | LHSMW15-960815 | | LHSMW15-980514 | | LHSMW15-102708 | | LHSMW16-941129 | | LHSMW16-960206 | | LHSMW16-960815 | | LHSMW16-980514 | |
| Sample Date | | | 8/14/1996 | | 8/14/1996 | | 5/14/1998 | | 9/24/2013 | | 2/6/1996 | | 8/15/1996 | | 5/14/1998 | | 10/27/2008 | | 11/29/1994 | | 2/6/1996 | | 8/15/1996 | | 5/14/1998 | |
| Location Description | | | Site 46 - West, outside of site boundary. Shallow Zone. | | | | | | | | Site 46 - West, outside of site boundary. Shallow Zone. | | | | | | | | Site 46 - West, outside of site boundary. Shallow Zone. | | | | | | | |
| Analyte | Units | MCL | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual |
| cis-1,2-Dichloroethene | µg/L | 70 | < 0.2 | U | < 0.2 | U | < 1 | U | < 0.5 | U | < 1 | U | < 0.2 | U | < 1 | U | < 0.25 | U | | | < 1 | U | < 0.2 | U | < 1 | U |
| Trichloroethene | µg/L | 5 | < 0.25 | U | < 0.25 | U | < 1 | U | < 0.5 | U | < 1 | U | < 0.25 | U | < 1 | U | < 0.25 | U | < 5 | U | < 1 | U | < 0.25 | U | < 1 | U |
| Vinyl chloride | µg/L | 2 | < 0.24 | U | < 0.24 | U | < 1 | U | < 0.5 | U | < 1 | U | < 0.24 | U | < 1 | U | < 0.25 | U | | | < 1 | U | < 0.24 | U | < 1 | U |

Notes:

Blue Highlighting Indicates concentrations above the MCL/PCL.
Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.
µg/L - micrograms per liter
COC - contaminant of concern
E - east
FD - field duplicate
H - Result may be biased high. Details are provided in the validation report.
ID - Identifier
J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
N - north
NE - northeast
NNW - north-northwest
SE - southeast
SW - southwest
U - Undetected: The analyte was analyzed for, but not detected.
UJ - Undetected estimated: The analyte was analyzed for but, was not detected. Even though the analyte was not detected, certain discrepancies in meeting analyte specific quality control were not met.
MCL - Maximum Contaminant Level
Val Qual - validation qualifier
W - west

## Table 2-6
## Historical COC Concentrations 1998–2023

| Location Code | | | LHSMW17 | | | | | | | | | | | | | | | | LHSMW18 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | | | LHSMW17-960212 | | LHSMW17-960815 | | LHSMW17-980514 | | LHSMW17-000524 | | LHSMW17-000524FD | | LHSMW17-001002FD | | LHSMW17-001003 | | LHSMW17-220214 | | LHSMW18-941202 | | LHSMW18-960212 | | LHSMW18-960815 | |
| Sample Date | | | 2/12/1996 | | 8/15/1996 | | 5/14/1998 | | 5/24/2000 | | 5/24/2000 | | 10/2/2000 | | 10/3/2000 | | 2/14/2022 | | 12/2/1994 | | 2/12/1996 | | 8/15/1996 | |
| Location Description | | | Site 46 - SW, inside site boundary. Shallow Zone. | | | | | | | | | | | | | | | | Site 46 - Central, inside site boundary. Shallow Zone. | | | | | |
| Analyte | Units | MCL | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual |
| cis-1,2-Dichloroethene | µg/L | 70 | < 1 | U | < 0.2 | U | < 1 | U | < 1 | U | 100 | J | < 1 | U | < 1 | U | < 0.5 | U | | | 4.5 | | 6.1 | |
| Trichloroethene | µg/L | 5 | < 1 | U | < 0.25 | U | < 1 | U | < 1 | U | 1 | | < 1 | U | < 1 | U | < 0.5 | U | 14 | | 21 | | 27.5 | |
| Vinyl chloride | µg/L | 2 | < 1 | U | < 0.24 | U | < 1 | U | < 1 | U | < 1 | U | < 1 | U | < 1 | U | < 0.5 | U | | | < 1 | U | 0.68 | |

Notes:

Blue Highlighting Indicates concentrations above the MCL/PCL.
Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.

µg/L - micrograms per liter
COC - contaminant of concern
E - east
FD - field duplicate
H - Result may be biased high. Details are provided in the validation report.
ID - Identifier
J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
N - north
NE - northeast
NNW - north-northwest
SE - southeast
SW - southwest
U - Undetected: The analyte was analyzed for, but not detected.
UJ - Undetected estimated: The analyte was analyzed for but, was not detected. Even though the analyte was not detected, certain discrepancies in meeting analyte specific quality control were not met.
MCL - Maximum Contaminant Level
Val Qual - validation qualifier
W - west

# Table 2-6
## Historical COC Concentrations 1998–2023

| Location Code | | | LHSMW18 | | | | | | LHSMW19 | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | | | LHSMW18-980514 | | LHSMW18-FEB2007 | | LHSMW18-032916 | | LHSMW19-941202 | | LHSMW19-960206 | | LHSMW19-960815 | | LHSMW19-980515 | | LHSMW19-FEB2007 | | LHSMW19-110620 | | LHSMW19-052813 | | LHSMW19-092413 | |
| Sample Date | | | 5/14/1998 | | 2/20/2007 | | 3/29/2016 | | 12/2/1994 | | 2/6/1996 | | 8/15/1996 | | 5/15/1998 | | 2/20/2007 | | 6/20/2011 | | 5/28/2013 | | 9/24/2013 | |
| Location Description | | | Site 46 - Central, inside site boundary. Shallow Zone. | | | | | | Site 46 - Central, within site boundary. Shallow Zone. | | | | | | | | | | | | | | | |
| Analyte | Units | MCL | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual |
| cis-1,2-Dichloroethene | µg/L | 70 | 9.8 | | 1.5 | J | 1.28 | | | | < 3 | U | < 0.2 | U | < 1 | U | < 0.83 | U | 2.98 | | 1.45 | | 2.44 | |
| Trichloroethene | µg/L | 5 | 38 | | 4.8 | | 3.35 | | 26 | | 77 | | 47.1 | | 70 | | 85.5 | | 66.4 | | 32.3 | | 40.9 | |
| Vinyl chloride | µg/L | 2 | 0.71 | J | < 0.32 | U | < 0.5 | U | | | < 3 | U | < 0.24 | U | < 1 | U | < 0.32 | U | < 0.25 | U | < 0.25 | U | < 0.5 | U |

Notes:

Blue Highlighting Indicates concentrations above the MCL/PCL.
Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.
µg/L - micrograms per liter
COC - contaminant of concern
E - east
FD - field duplicate
H - Result may be biased high. Details are provided in the validation report.
ID - Identifier
J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
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NNW - north-northwest
SE - southeast
SW - southwest
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UJ - Undetected estimated: The analyte was analyzed for but, was not detected. Even though the analyte was not detected, certain discrepancies in meeting analyte specific quality control were not met.
MCL - Maximum Contaminant Level
Val Qual - validation qualifier
W - west

## Table 2-6
## Historical COC Concentrations 1998–2023

| Location Code | | | LHSMW19 | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | | | LHSMW19-012814 | | LHSMW19-071614 | | LHSMW19-111814 | | LHSMW19-020415 | | LHSMW19-050615 | | LHSMW19-080515 | | LHSMW19-020116 | | LHSMW19-080316 | | LHSMW19-022018 | | LHSMW19-180828 | | LHSMW19-190220 | |
| Sample Date | | | 1/28/2014 | | 7/16/2014 | | 11/18/2014 | | 2/4/2015 | | 5/6/2015 | | 8/5/2015 | | 2/1/2016 | | 8/3/2016 | | 2/20/2018 | | 8/28/2018 | | 2/20/2019 | |
| Location Description | | | Site 46 - Central, within site boundary. Shallow Zone. | | | | | | | | | | | | | | | | | | | | | |
| Analyte | Units | MCL | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual |
| cis-1,2-Dichloroethene | µg/L | 70 | 2.15 | | 1.52 | | 1.59 | | 1.9 | | 0.944 | J | 2.3 | | 1.92 | | 0.967 | J | < 0.5 | U | 1.7 | | 3.9 | |
| Trichloroethene | µg/L | 5 | 33.5 | | 28.6 | | 31.2 | | 31.3 | | 13.4 | | 26.2 | | 24.2 | | 8.53 | | 2.4 | | 8.8 | | 16 | |
| Vinyl chloride | µg/L | 2 | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U |

Notes:

Blue Highlighting Indicates concentrations above the MCL/PCL.
Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.
µg/L - micrograms per liter
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E - east
FD - field duplicate
H - Result may be biased high. Details are provided in the validation report.
ID - Identifier
J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
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NE - northeast
NNW - north-northwest
SE - southeast
SW - southwest
U - Undetected: The analyte was analyzed for, but not detected.
UJ - Undetected estimated: The analyte was analyzed for but, was not detected. Even though the analyte was not detected, certain discrepancies in meeting analyte specific quality control were not met.
MCL - Maximum Contaminant Level
Val Qual - validation qualifier
W - west

# Table 2-6
## Historical COC Concentrations 1998–2023

| Location Code | | | LHSMW19 | | | | | | | | LHSMW19 | | | | LHSMW20 | | | | | | | | LHSMW21 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | | | LHSMW19-190812 | | LHSMW19-200219 | | LHSMW19-210318 | | LHSMW19-220214 | | LHSMW19-230209 | | LHSMW19-230209-FD | | LHSMW20-960207 | | LHSMW20-960815 | | LHSMW20-980515 | | LHSMW20-102708 | | LHSMW21-960207 | | LHSMW21-960815 | | LHSMW21-980515 | |
| Sample Date | | | 8/12/2019 | | 2/19/2020 | | 3/18/2021 | | 2/14/2022 | | 2/9/2023 | | 2/9/2023 | | 2/7/1996 | | 8/15/1996 | | 5/15/1998 | | 10/27/2008 | | 2/7/1996 | | 8/15/1996 | | 5/15/1998 | |
| Location Description | | | Site 46 - Central, within site boundary. Shallow Zone. | | | | | | | | Site 46 - Central, Within Site Boundary, Shallow Zone | | | | Site 46 - N, inside site boundary. Shallow Zone. | | | | | | | | Site 46 - NE, inside site boundary. Shallow Zone. | | | | | |
| Analyte | Units | MCL | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual |
| cis-1,2-Dichloroethene | µg/L | 70 | 4.2 | | 5.6 | | 3.9 | | 10 | | 11 | | 11 | | < 1 | U | < 0.2 | U | < 1 | U | < 0.25 | U | < 1 | U | < 0.2 | U | < 1 | U |
| Trichloroethene | µg/L | 5 | 13 | | 19 | | 13 | | 21 | | 24 | | 26 | | < 1 | U | < 0.25 | U | < 1 | U | < 0.25 | U | < 1 | U | < 0.25 | U | < 1 | U |
| Vinyl chloride | µg/L | 2 | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 1 | U | < 1 | U | < 1 | U | < 0.24 | U | < 1 | U | < 0.25 | U | < 1 | U | < 0.24 | U | < 1 | U |

Notes:

Blue Highlighting Indicates concentrations above the MCL/PCL.
Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.

µg/L - micrograms per liter
COC - contaminant of concern
E - east
FD - field duplicate
H - Result may be biased high. Details are provided in the validation report.
ID - Identifier
J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
N - north
NE - northeast
NNW - north-northwest
SE - southeast
SW - southwest
U - Undetected: The analyte was analyzed for, but not detected.
UJ - Undetected estimated: The analyte was analyzed for but, was not detected. Even though the analyte was not detected, certain discrepancies in meeting analyte specific quality control were not met.
MCL - Maximum Contaminant Level
Val Qual - validation qualifier
W - west

# Table 2-6
## Historical COC Concentrations 1998–2023

| Location Code | | | LHSMW21 | | | | | | | | | | | | LHSMW21 | | LHSMW22 | | | | | | LHSMW23 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | | | LHSMW21-092513 | | LHSMW21-190225 | | LHSMW21-190813 | | LHSMW21-200213 | | LHSMW21-210316 | | LHSMW21-220215 | | LHSMW21-230206 | | LHSMW22-960207 | | LHSMW22-960815 | | LHSMW22-980515 | | LHSMW22-FEB2007 | | LHSMW23-941204 | | LHSMW23-941204FD | |
| Sample Date | | | 9/25/2013 | | 2/25/2019 | | 8/13/2019 | | 2/13/2020 | | 3/16/2021 & 4/29/2021 | | 2/15/2022 | | 2/6/2023 | | 2/7/1996 | | 8/15/1996 | | 5/15/1998 | | 2/19/2007 | | 12/4/1994 | | 12/4/1994 | |
| Location Description | | | Site 46 - NE, inside site boundary. Shallow Zone. | | | | | | | | | | | | | | Site 46 - Central, inside site boundary. Shallow Zone. | | | | | | | | Site 46 - SE, inside site boundary. Intermediate Zone. | | | |
| Analyte | Units | MCL | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual |
| cis-1,2-Dichloroethene | µg/L | 70 | 30.6 | | 100 | | 170 | | 170 | | 130 | | 180 | | 200 | | < 1 | U | 0.54 | | 1.1 | | < 0.83 | U | | | | |
| Trichloroethene | µg/L | 5 | 1.64 | | 20 | | 41 | | 36 | | 33 | | 49 | J | 61 | | 1 | | 1.7 | | 3.1 | | < 0.63 | U | < 5 | U | < 5 | U |
| Vinyl chloride | µg/L | 2 | 1.44 | | < 0.5 | U | 0.97 | J | 2.4 | | 3.7 | | 4.9 | J | 8 | | < 1 | U | < 0.24 | U | < 1 | U | < 0.32 | U | | | | |

Notes:

Blue Highlighting Indicates concentrations above the MCL/PCL.
Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.

µg/L - micrograms per liter

COC - contaminant of concern

E - east

FD - field duplicate

H - Result may be biased high. Details are provided in the validation report.

ID - Identifier

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

N - north

NE - northeast

NNW - north-northwest

SE - southeast

SW - southwest

U - Undetected: The analyte was analyzed for, but not detected.

UJ - Undetected estimated: The analyte was analyzed for but, was not detected. Even though the analyte was not detected, certain discrepancies in meeting analyte specific quality control were not met.

MCL - Maximum Contaminant Level

Val Qual - validation qualifier

W - west

## Table 2-6
## Historical COC Concentrations 1998–2023

| Location Code | | | LHSMW23 | | | | | | | | | | | | | | | | | | LHSMW23R | | | | LHSMW24 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | | | LHSMW23-960206 | | LHSMW23-960815 | | LHSMW23-980515 | | LHSMW23-FEB2007 | | LHSMW23-102808 | | LHSMW23R-190903 | | LHSMW23R-200219 | | LHSMW25-210315 | | LHSMW23R-220211 | | LHSMW23R-230209 | | LHSMW23R-230209-FD | | LHSMW24-941204 | | LHSMW24-960207 | |
| Sample Date | | | 2/6/1996 | | 8/15/1996 | | 5/15/1998 | | 2/19/2007 | | 10/28/2008 | | 9/3/2019 | | 2/19/20 | | 3/15/2021 | | 2/11/2022 | | 2/9/2023 | | 2/9/2023 | | 12/4/1994 | | 2/7/1996 | |
| Location Description | | | Site 46 - SE, inside site boundary. Intermediate Zone. | | | | | | | | | | | | | | | | | | Site 46 - South, Within Site Boundary, Intermediate Zone | | | | Site 46 - E, outside of site boundary. Shallow Zone. | | | |
| Analyte | Units | MCL | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual |
| cis-1,2-Dichloroethene | µg/L | 70 | < 1 | U | < 0.2 | U | < 1 | U | < 0.83 | U | 0.614 | J | 0.5 | U | 0.71 | J | < 0.5 | U | 0.8 | J | 0.77 | J | 0.86 | J | | | < 1 | U |
| Trichloroethene | µg/L | 5 | < 1 | U | < 0.25 | U | 1.3 | | 1.4 | J | 2.51 | | 0.5 | U | 0.65 | J | < 0.5 | U | 0.65 | J | 0.76 | J | 0.78 | J | < 5 | U | < 1 | U |
| Vinyl chloride | µg/L | 2 | < 1 | U | < 0.24 | U | < 1 | U | < 0.32 | U | 0.412 | J,H | 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 1 | U | < 1 | U | | | < 1 | U |

Notes:

Blue Highlighting Indicates concentrations above the MCL/PCL.

Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.

µg/L - micrograms per liter

COC - contaminant of concern

E - east

FD - field duplicate

H - Result may be biased high. Details are provided in the validation report.

ID - Identifier

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

N - north

NE - northeast

NNW - north-northwest

SE - southeast

SW - southwest

U - Undetected: The analyte was analyzed for, but not detected.

UJ - Undetected estimated: The analyte was analyzed for but, was not detected. Even though the analyte was not detected, certain discrepancies in meeting analyte specific quality control were not met.

MCL - Maximum Contaminant Level

Val Qual - validation qualifier

W - west

## Table 2-6
## Historical COC Concentrations 1998–2023

| Location Code | | | LHSMW24 | | | | LHSMW25 | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | | | LHSMW24-960820 | | LHSMW24-980515 | | LHSMW25-941204 | | LHSMW25-960207 | | LHSMW25-960820 | | LHSMW25-980515 | | LHSMW25-102808 | | LHSMW25-102808-QA | | LHSMW25-052513 | | LHSMW25-092513 | | LHSMW25-092513-FD | |
| Sample Date | | | 8/20/1996 | | 5/15/1998 | | 12/4/1994 | | 2/7/1996 | | 8/20/1996 | | 5/15/1998 | | 10/28/2008 | | 10/28/2008 | | 5/25/2013 | | 9/25/2013 | | 9/25/2013 | |
| Location Description | | | Site 46 - E, outside of site boundary. Shallow Zone. | | | | Site 46 - E, within site boundary. Intermediate zone. | | | | | | | | | | | | | | | | | |
| Analyte | Units | MCL | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual |
| cis-1,2-Dichloroethene | µg/L | 70 | < 0.2 | U | < 1 | U | | | < 1 | U | < 0.2 | U | < 1 | U | < 0.25 | U | < 0.25 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U |
| Trichloroethene | µg/L | 5 | < 0.25 | U | < 1 | U | < 5 | U | < 1 | U | < 0.25 | U | < 1 | U | < 0.25 | U | < 0.25 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U |
| Vinyl chloride | µg/L | 2 | < 0.24 | U | < 1 | U | | | < 1 | U | < 0.24 | U | < 1 | U | < 0.25 | UJ,H | < 0.25 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U |

Notes:

Blue Highlighting Indicates concentrations above the MCL/PCL.
Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.
µg/L - micrograms per liter
COC - contaminant of concern
E - east
FD - field duplicate
H - Result may be biased high. Details are provided in the validation report.
ID - Identifier
J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
N - north
NE - northeast
NNW - north-northwest
SE - southeast
SW - southwest
U - Undetected: The analyte was analyzed for, but not detected.
UJ - Undetected estimated: The analyte was analyzed for but, was not detected. Even though the analyte was not detected, certain discrepancies in meeting analyte specific quality control were not met.
MCL - Maximum Contaminant Level
Val Qual - validation qualifier
W - west

## Table 2-6
## Historical COC Concentrations 1998–2023

| Location Code | | | LHSMW25 | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | | | LHSMW25-012514 | | LHSMW25-071814 | | LHSMW25-112014 | | LHSMW25-020615 | | LHSMW25-050115 | | LHSMW25-080415 | | LHSMW25FD-080415 | | LHSMW25-020216 | | LHSMW25FD-020216 | | LHSMW25-080416 | | LHSMW25-022218 | |
| Sample Date | | | 1/25/2014 | | 7/18/2014 | | 11/20/2014 | | 2/6/2015 | | 5/1/2015 | | 8/4/2015 | | 8/4/2015 | | 2/2/2016 | | 2/2/2016 | | 8/4/2016 | | 2/22/2018 | |
| Location Description | | | Site 46 - E, within site boundary. Intermediate zone. | | | | | | | | | | | | | | | | | | | | | |
| Analyte | Units | MCL | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual |
| cis-1,2-Dichloroethene | µg/L | 70 | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U |
| Trichloroethene | µg/L | 5 | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U |
| Vinyl chloride | µg/L | 2 | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U |

Notes:

Blue Highlighting Indicates concentrations above the MCL/PCL.
Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.

µg/L - micrograms per liter
COC - contaminant of concern
E - east
FD - field duplicate
H - Result may be biased high. Details are provided in the validation report.
ID - Identifier
J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
N - north
NE - northeast
NNW - north-northwest
SE - southeast
SW - southwest
U - Undetected: The analyte was analyzed for, but not detected.
UJ - Undetected estimated: The analyte was analyzed for but, was not detected. Even though the analyte was not detected, certain discrepancies in meeting analyte specific quality control were not met.
MCL - Maximum Contaminant Level
Val Qual - validation qualifier
W - west

# Table 2-6
## Historical COC Concentrations 1998–2023

| Location Code | | | LHSMW25 | | | | | | | | | | | | LHSMW25 | | LHSMW27 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | | | LHSMW25-180827 | | LHSMW25-190225 | | LHSMW25-190812 | | LHSMW25-200219 | | LHSMW25-210315 | | LHSMW25-220213 | | LHSMW25-230209 | | LHSMW27-960208 | | LHSMW27-960820 | | LHSMW27-980515 | |
| Sample Date | | | 8/27/2018 | | 2/25/2019 | | 8/12/2019 | | 2/19/2020 | | 3/15/2021 | | 2/13/2022 | | 2/9/2023 | | 2/8/1996 | | 8/20/1996 | | 5/15/1998 | |
| Location Description | | | Site 46 - E, within site boundary. Intermediate zone. | | | | | | | | | | | | Site 46 - East, Within Site Boundary, Intermediate Zone | | Site 46 - SE, outside of site boundary. Shallow Zone. | | | | | |
| Analyte | Units | MCL | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual | Result | Val Qual |
| cis-1,2-Dichloroethene | µg/L | 70 | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | UJ | < 1 | U | < 1 | U | < 0.2 | U | < 1 | U |
| Trichloroethene | µg/L | 5 | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | UJ | < 1 | U | < 1 | U | < 0.25 | U | < 1 | U |
| Vinyl chloride | µg/L | 2 | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | U | < 0.5 | UJ | < 1 | U | < 1 | U | < 0.24 | U | < 1 | U |

Notes:

Blue Highlighting Indicates concentrations above the MCL/PCL.
Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.
µg/L - micrograms per liter
COC - contaminant of concern
E - east
FD - field duplicate
H - Result may be biased high. Details are provided in the validation report.
ID - Identifier
J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
N - north
NE - northeast
NNW - north-northwest
SE - southeast
SW - southwest
U - Undetected: The analyte was analyzed for, but not detected.
UJ - Undetected estimated: The analyte was analyzed for but, was not detected. Even though the analyte was not detected, certain discrepancies in meeting analyte specific quality control were not met.
MCL - Maximum Contaminant Level
Val Qual - validation qualifier
W - west

P

## Table 2-7
## Year 10 Annual RA-O Sampling Locations

| Well ID | Groundwater Zone | Groundwater Elevations | VOC | Field Parameters | MNA |
|---|---|---|---|---|---|
| 46WW01 | Shallow | X | X | X | |
| 46WW04 | Shallow | X | X | X | |
| 46WW10 | Shallow | X | X | X | |
| 46WW11 | Shallow | X | X | X | X |
| 46WW12 | Shallow | X | X | X | |
| 46WW13 | Shallow | X | X | X | |
| 46WW15 | Shallow | X | X | X | |
| LHSMW17 | Shallow | X | X | X | |
| LHSMW18 [a] | Shallow | X | X | X | |
| LHSMW19 | Shallow | X | X | X | |
| LHSMW20 | Shallow | X | | | |
| LHSMW21 | Shallow | X | X | X | X |
| LHSMW22 | Shallow | X | X | X | |
| LHSMW24 | Shallow | X | | | |
| 46WW17 | Shallow/Intermediate | X | X | X | |
| 46WW02 | Intermediate | X | X | X | X |
| 46WW05 | Intermediate | X | X | X | X |
| 46WW06 | Intermediate | X | X | X | |
| 46WW07 | Intermediate | X | X | X | |
| 46WW08 | Intermediate | X | X | X | |
| 46WW09 | Intermediate | X | X | X | X |
| 46WW14 | Intermediate | X | X | X | |
| 46WW16 | Intermediate | X | X | X | X |
| LHSMW23R | Intermediate | X | X | X | |
| LHSMW25 | Intermediate | X | X | X | |
| 46WW03 | Deep | X | X | X | |
| 46SW10 [b] | Surface Water | | X | X | |

Notes:

Field parameters to be monitored for all wells: pH, temperature, conductivity, turbidity, oxidation-reduction potential (ORP), and dissolved oxygen (DO).

MNA parameters include nitrate, sulfate, chloride, TOC, dissolved iron (field), and dissolved gases (methane, ethane, ethene, carbon dioxide).

[a] LHSMW18 only sampled if LHSMW17 is dry.

[b] 46SW10 is only sampled if surface water is present and the groundwater elevation at either LHSMW21 or 46WW16 exceeds 197 feet.

X Well will be analyzed for that parameter.

ID - identifier

MNA - monitored natural attenuation

RA-O - remedial action operation

TOC - total organic carbon

VOC - volatile organic compound

**Table 3-1**
**Mann-Kendall Trend Summary**

| Monitoring Well | Groundwater Zone | Statistical TCE Trend | Statistical cis-1,2-DCE Trend | Statistical VC Trend | Confidence Factor |
|---|---|---|---|---|---|
| 46WW11 | Shallow | Decreasing | NA | NA | > 99.9% |
| LHSMW19 | Shallow | Decreasing | NA | NA | 99.6% |
| LHSMW21 | Shallow | Increasing | Increasing | Increasing | > 99.9%, > 99.9%, > 99.9% |
| 46WW02 | Intermediate | Decreasing | NA | NA | 96.6% |
| 46WW05 | Intermediate | Decreasing | NA | NA | > 99.9% |

Notes:

> greater than

DCE - dichloroethene

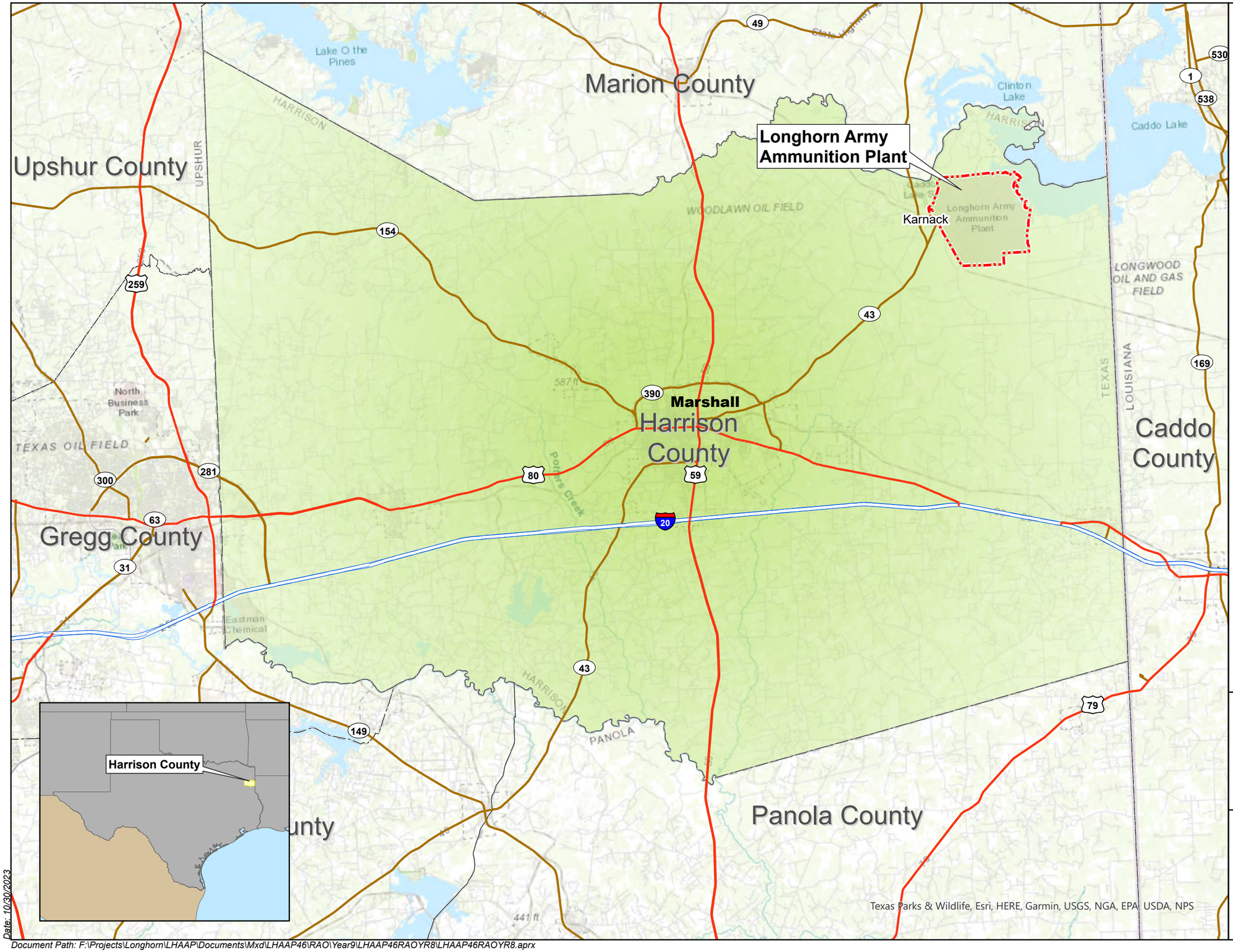
MCL - Maximum Contaminant Level

NA - Not applicable; Trend not calculated because chemical was not detected above the MCL.

TCE - trichloroethene

VC - vinyl chloride

# Figures




Note:
1. RA-O = Remedial Action Operations
2. LHAAP = Longhorn Army Ammunition Plant

N

0 2 4 Miles

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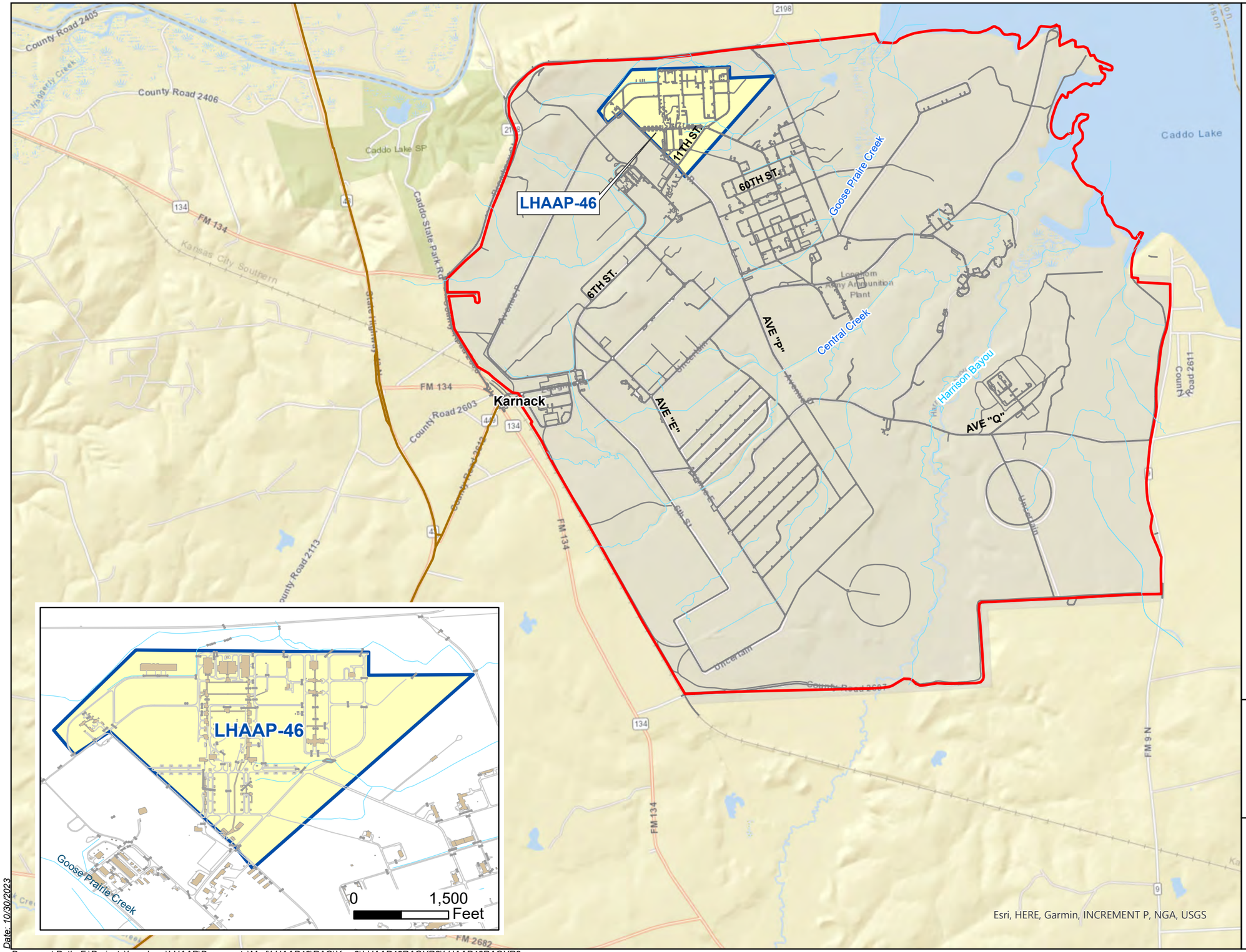
Figure 1-1

LHAAP Location Map
Ninth Annual RA-O Report
LHAAP-46

LONGHORN ARMY AMMUNITION PLANT
KARNACK, TEXAS

Date: 10/30/2023

Document Path: F:\Projects\Longhorn\LHAAP\Documents\Mxd\LHAAP46\RAO\Year9\LHAAP46RAOYR8\LHAAP46RAOYR8.aprx







Stream
Road
LHAAP Boundary
LHAAP-46 Site Boundary

Note:
1. RA-O = Remedial Action Operations
2. LHAAP = Longhorn Army Ammunition Plant

N

0 1,500 3,000
Feet

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TULSA, OKLAHOMA

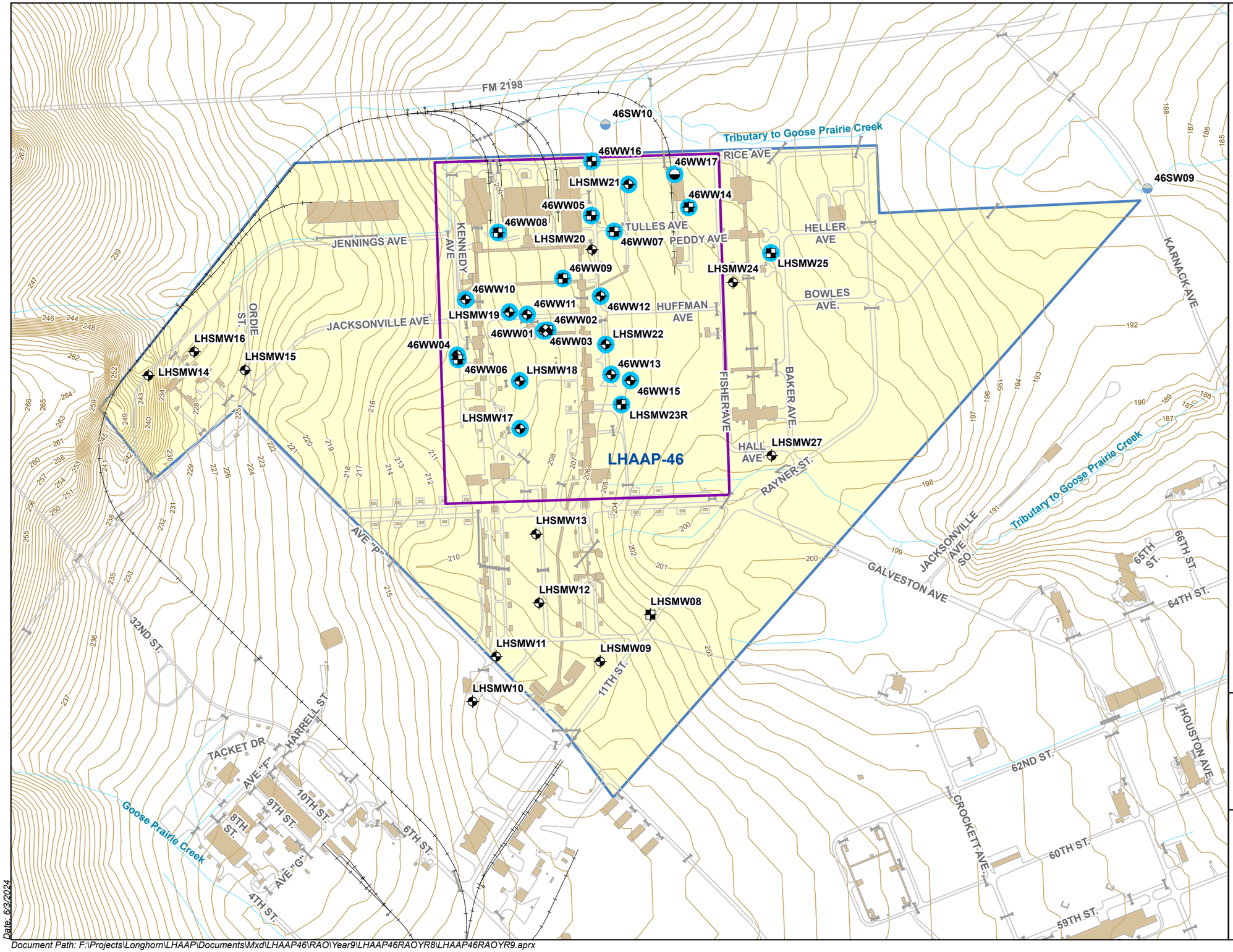
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Figure 1-2

LHAAP Site Vicinity Map
Ninth Annual RA-O Report
LHAAP-46
LONGHORN ARMY AMMUNITION PLANT
KARNACK, TEXAS

Date: 10/30/2023

Document Path: F:\Projects\Longhorn\LHAAP\Documents\Mxd\LHAAP46\RAO\Year9\LHAAP46RAOYR8\LHAAP46RAOYR8.aprx




- Shallow Monitoring Well
- Shallow/Intermediate Monitoring Well
- Intermediate Monitoring Well
- Deep Monitoring Well
- RA-O Monitoring Well
- Surface Water Sample Location
- Former Railroad Location
- Culvert
- Surveyed Land Use Control Boundary
- Stream
- Surface Elevation Lines (in feet above mean sea level)
- Roads
- Former Buildings
- LHAAP-46 Site Boundary

Note:
1. RA-O = Remedial Action Operations
2. LHAAP = Longhorn Army Ammunition Plant

N

0 250 500 Feet

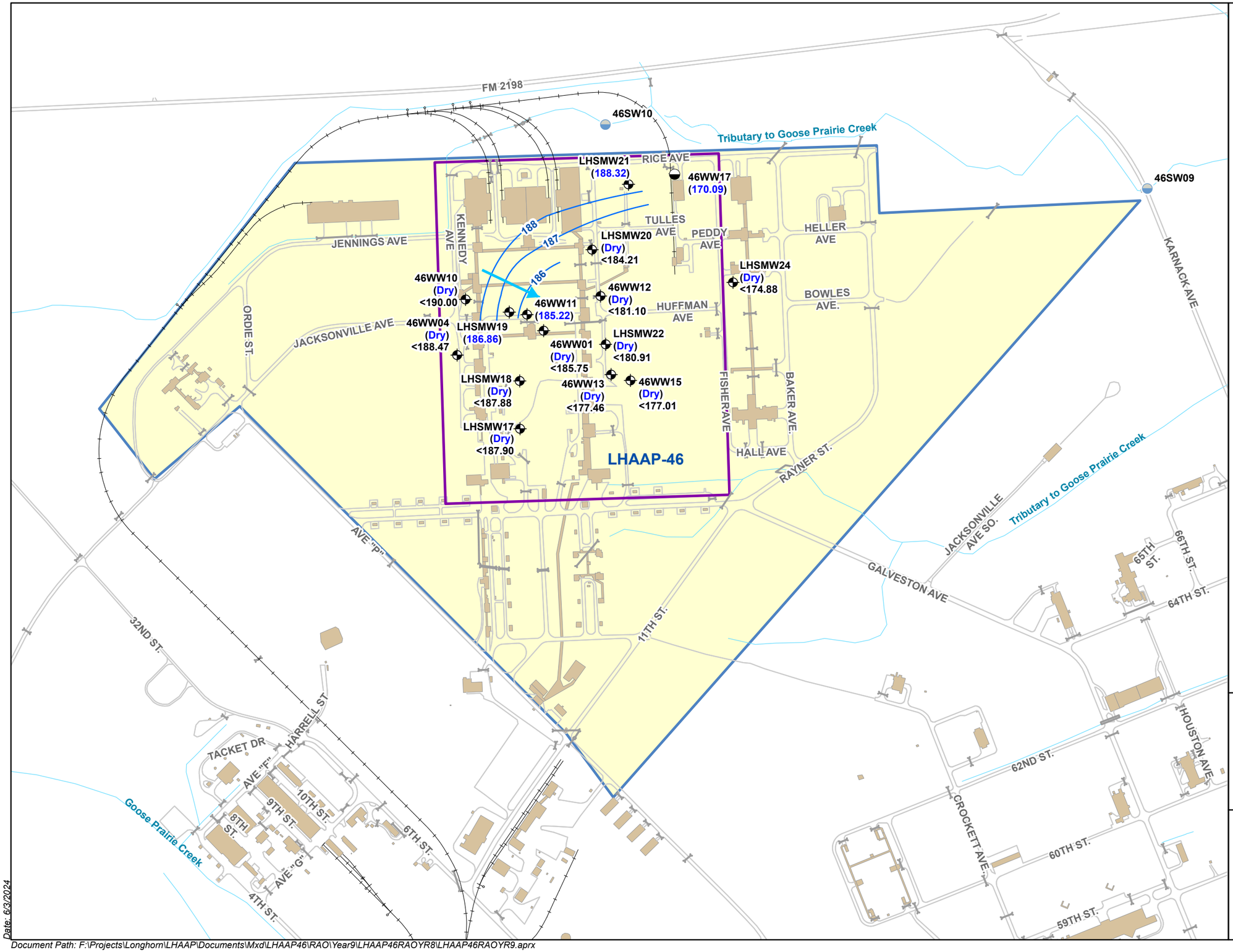
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Figure 2-1
Groundwater Monitoring Wells and Surface Water Locations
Ninth Annual RA-O Report
LHAAP-46
LONGHORN ARMY AMMUNITION PLANT
KARNACK, TEXAS

Date: 6/3/2024

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- Shallow Monitoring Well
- Shallow/Intermediate Monitoring Well
- Surface Water Sample Location
- Former Railroad Location
- Historical Groundwater Flow Direction
- Groundwater Contour (in feet above msl)
- Culvert
- Surveyed Land Use Control Boundary
- Stream
- Roads
- Former Buildings
- LHAAP-46 Site Boundary
- 186.27 Groundwater Elevation (ft msl)

Notes:
1. RA-O = Remedial Action Operations
2. LHAAP = Longhorn Army Ammunition Plant
3. msl = Mean Sea Level
4. ft = feet
5. Monitoring well 46WW17 is a shallow/intermediate well installed in an area with no apparent confining layer between the shallow and intermediate zones. The groundwater elevation shown was not used to develop the shallow zone potentiometric contours.
6. Wells that were dry have their bottom of screen elevation shown.
7. NM = not measured. LHSMW18 was not sampled because LHSMW17 contained enough water to collect a sample.

N

0 250 500 Feet

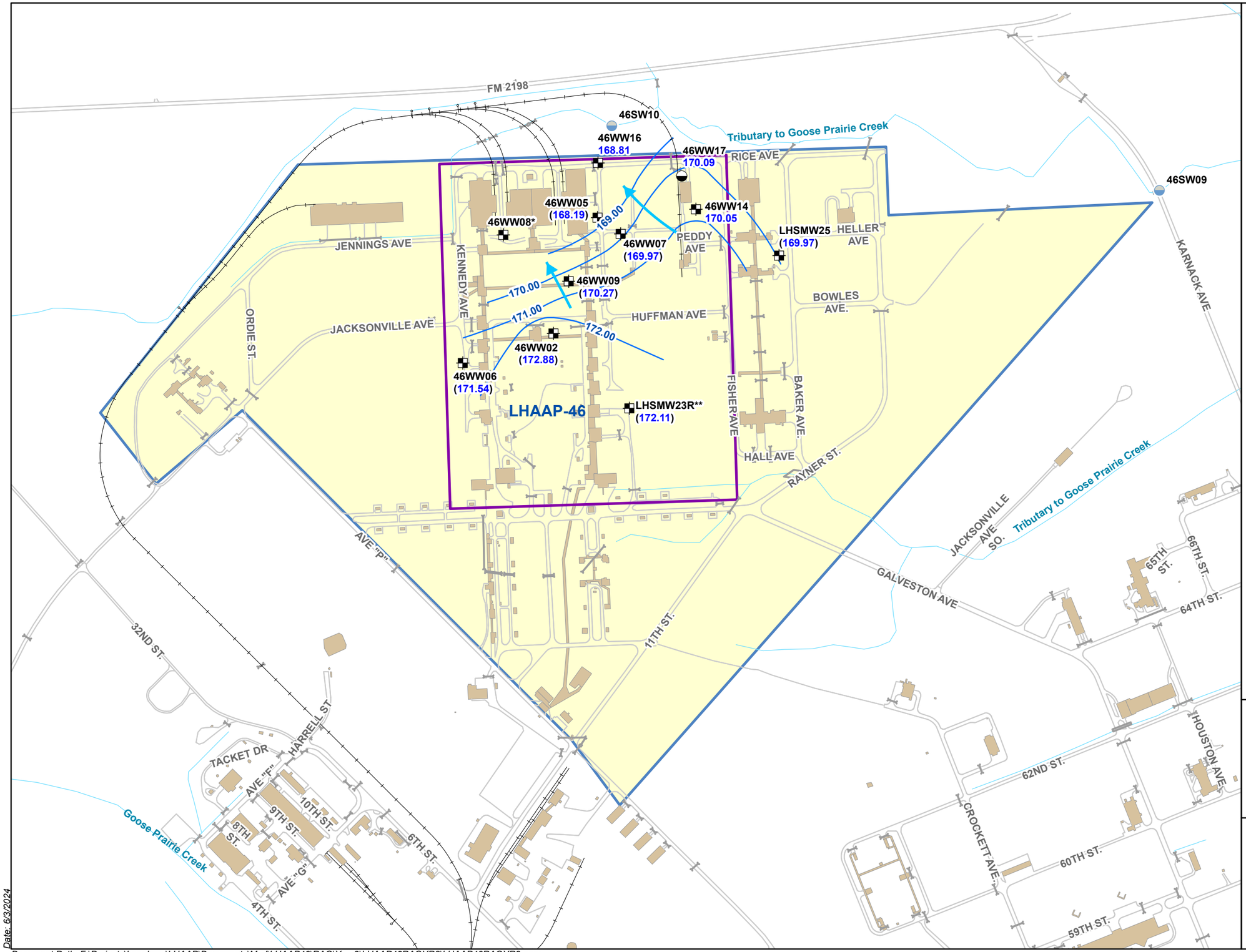
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Figure 2-2
Shallow Zone Potentiometric Map – February 2023
Ninth Annual RA-O Report
LHAAP-46
LONGHORN ARMY AMMUNITION PLANT
KARNACK, TEXAS

Date: 6/3/2024

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- Shallow/Intermediate Monitoring Well
- Intermediate Monitoring Well
- Surface Water Sample Location
- Former Railroad Location
- Groundwater Flow Direction
- Groundwater Contour (in feet above msl)
- Culvert
- Surveyed Land Use Control Boundary
- Stream
- Roads
- Former Buildings
- LHAAP-46 Site Boundary

186.27 Groundwater Elevation (ft msl)

Notes:
1. RA-O = Remedial Action Operations
2. LHAAP = Longhorn Army Ammunition Plant
3. msl = Mean Sea Level
4. ft = feet
5.* = The groundwater elevation in 46WW08 continues to be similar to the shallow zone elevations, despite the well being screened in the intermediate zone. It is possible that there is leakage from the shallow zone to the intermediate zone in this area of the site such that the well reflects shallow zone conditions. Water level elevation from this well was not used for constructing intermediate zone contours.
6.** = LHSMW23R was installed in August 2019 to replace LHSMW23.
7. Monitoring well 46WW17 is a shallow/intermediate well installed in an area with no apparent confining layer between the shallow and intermediate zones. The groundwater elevation shown was not used to develop the intermediate zone potentiometric contours.

N

0 250 500 Feet

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Figure 2-3
Intermediate Zone Potentiometric Map – February 2023
Ninth Annual RA-O Report
LHAAP-46
LONGHORN ARMY AMMUNITION PLANT
KARNACK, TEXAS

Date: 6/3/2024

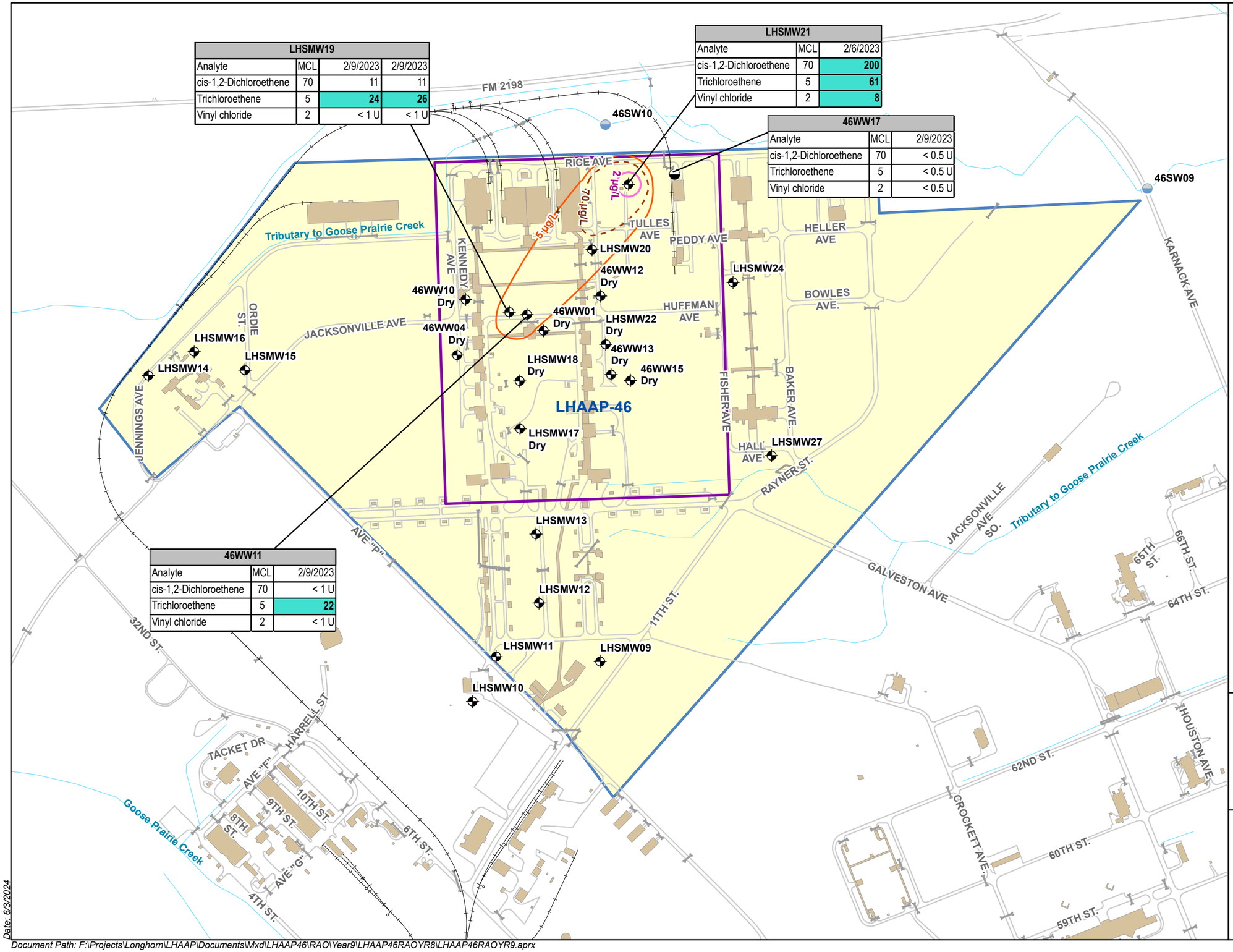
Document Path: F:\Projects\Longhorn\LHAAP\Documents\Mxd\LHAAP46\RAO\Year9\LHAAP46RAOYR8\LHAAP46RAOYR9.aprx

| LHSMW19 | | | |
|---|---|---|---|
| Analyte | MCL | 2/9/2023 | 2/9/2023 |
| cis-1,2-Dichloroethene | 70 | 11 | 11 |
| Trichloroethene | 5 | **24** | **26** |
| Vinyl chloride | 2 | < 1 U | < 1 U |

| LHSMW21 | | |
|---|---|---|
| Analyte | MCL | 2/6/2023 |
| cis-1,2-Dichloroethene | 70 | **200** |
| Trichloroethene | 5 | **61** |
| Vinyl chloride | 2 | **8** |

| 46WW17 | | |
|---|---|---|
| Analyte | MCL | 2/9/2023 |
| cis-1,2-Dichloroethene | 70 | < 0.5 U |
| Trichloroethene | 5 | < 0.5 U |
| Vinyl chloride | 2 | < 0.5 U |

| 46WW11 | | |
|---|---|---|
| Analyte | MCL | 2/9/2023 |
| cis-1,2-Dichloroethene | 70 | < 1 U |
| Trichloroethene | 5 | **22** |
| Vinyl chloride | 2 | < 1 U |




- Shallow Monitoring Well
- Shallow/Intermediate Monitoring Well
- Surface Water Sample Location
- Shallow Zone TCE Plume (*Dashed where inferred*)
- Shallow Zone cis-1,2 DCE Plume (*Dashed where inferred*)
- Shallow Zone VC Plume (*Dashed where inferred*)
- Former Railroad Location
- Culvert
- Surveyed Land Use Control Boundary
- Stream
- Roads
- Former Buildings
- LHAAP-46 Site Boundary

Note:
1. MCL - Maximum Contaminant Level
2. RA-O = Remedial Action Operations
3. LHAAP = Longhorn Army Ammunition Plant
4. Shaded concentrations exceed MCL

N

0 250 500 Feet

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Figure 2-4
Shallow Groundwater Results,
February 2023
Ninth Annual RA-O Report
LHAAP-46
LONGHORN ARMY AMMUNITION PLANT
KARNACK, TEXAS

Date: 6/3/2024

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| 46WW16 | | |
|---|---|---|
| Analyte | MCL | 2/6/2023 |
| cis-1,2-Dichloroethene | 70 | < 0.5 U |
| Trichloroethene | 5 | < 0.5 U |
| Vinyl chloride | 2 | < 0.5 U |

| 46WW05 | | |
|---|---|---|
| Analyte | MCL | 2/7/2023 |
| cis-1,2-Dichloroethene | 70 | 1.8 |
| Trichloroethene | 5 | 33 |
| Vinyl chloride | 2 | < 1 U |

| 46WW08 | | |
|---|---|---|
| Analyte | MCL | 2/9/2023 |
| cis-1,2-Dichloroethene | 70 | < 0.5 |
| Trichloroethene | 5 | < 0.5 |
| Vinyl chloride | 2 | < 0.5 |

| 46WW17 | | |
|---|---|---|
| Analyte | MCL | 2/9/2023 |
| cis-1,2-Dichloroethene | 70 | < 0.5 U |
| Trichloroethene | 5 | < 0.5 U |
| Vinyl chloride | 2 | < 0.5 U |

| 46WW14 | | |
|---|---|---|
| Analyte | MCL | 2/6/2023 |
| cis-1,2-Dichloroethene | 70 | < 0.5 U |
| Trichloroethene | 5 | < 0.5 U |
| Vinyl chloride | 2 | < 0.5 U |

| LHSMW25 | | |
|---|---|---|
| Analyte | MCL | 2/9/2023 |
| cis-1,2-Dichloroethene | 70 | < 0.5 U |
| Trichloroethene | 5 | < 0.5 U |
| Vinyl chloride | 2 | < 0.5 U |

| 46WW02 | | |
|---|---|---|
| Analyte | MCL | 2/6/2023 |
| cis-1,2-Dichloroethene | 70 | 1.8 J |
| Trichloroethene | 5 | 29 |
| Vinyl chloride | 2 | 0.43 J |

| 46WW07 | | |
|---|---|---|
| Analyte | MCL | 2/6/2023 |
| cis-1,2-Dichloroethene | 70 | < 0.5 U |
| Trichloroethene | 5 | < 0.5 U |
| Vinyl chloride | 2 | < 0.5 U |

| 46WW06 | | |
|---|---|---|
| Analyte | MCL | 2/9/2023 |
| cis-1,2-Dichloroethene | 70 | < 0.5 |
| Trichloroethene | 5 | < 0.5 |
| Vinyl chloride | 2 | < 0.5 |

| 46WW09 | | | |
|---|---|---|---|
| Analyte | MCL | 2/7/2023 | 2/7/2023 |
| cis-1,2-Dichloroethene | 70 | < 1 U | < 1 U |
| Trichloroethene | 5 | < 1 U | < 1 U |
| Vinyl chloride | 2 | < 1 U | < 1 U |

| LHSMW23R | | | |
|---|---|---|---|
| Analyte | MCL | 2/9/2023 | 2/9/2023 |
| cis-1,2-Dichloroethene | 70 | 0.77 J | 0.86 J |
| Trichloroethene | 5 | 0.76 J | 0.78 J |
| Vinyl chloride | 2 | < 0.5 U | < 0.5 U |

46SW10

46SW09

LHSMW08

LHAAP-46

5 µg/L

5 µg/L

Tributary to Goose Prairie Creek

Goose Prairie Creek

RICE AVE

TULLES AVE

PEDDY AVE

HELLER AVE

KENNEDY AVE

HUFFMAN AVE

JACKSONVILLE AVE

FISHER AVE

BAKER AVE.

HALL AVE

RAYNER ST

KARNACK AVE

JACKSONVILLE AVE SO.

AVE "P"

32ND ST.

11TH ST.

HARRELL ST

TACKET DR

AVE "F"

9TH ST.

10TH ST.

8TH ST.

6TH ST.

AVE "G"

4TH ST.

65TH ST.

66TH ST.

64TH ST.

62ND ST.

HOUSTON AVE

CROCKETT AVE.

60TH ST.

59TH ST.

Shallow/Intermediate Monitoring Well
Intermediate Monitoring Well
Surface Water Sample Location
Intermediate Zone TCE Plume (*Dashed where inferred*)
Former Railroad Location
Culvert
Surveyed Land Use Control Boundary
Stream
Roads
Former Buildings
LHAAP-46 Site Boundary

Note:
1. MCL - Maximum Contaminant Level
2. RA-O = Remedial Action Operations
3. LHAAP = Longhorn Army Ammunition Plant
4. Shaded concentrations exceed MCL

N

0 250 500 Feet

U.S. ARMY CORP OF ENGINEERS
TULSA DISTRICT
TULSA, OKLAHOMA

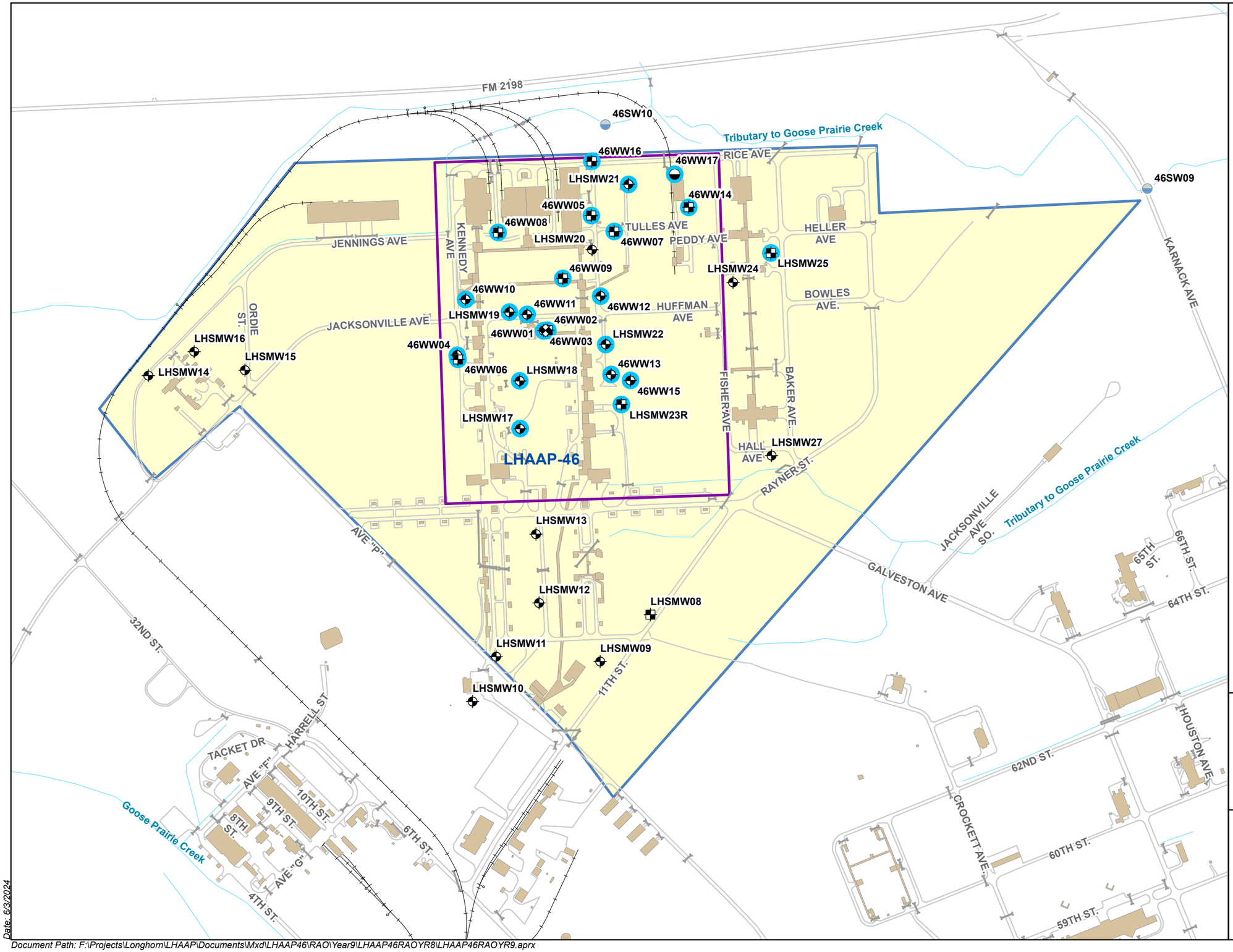
PCIbhate

APTIM

Figure 2-5
Intermediate Groundwater Results, February 2023
Ninth Annual RA-O Report
LHAAP-46
LONGHORN ARMY AMMUNITION PLANT
KARNACK, TEXAS

Date: 6/3/2024

Document Path: F:\Projects\Longhorn\LHAAP\Documents\Mxd\LHAAP46\RAO\Year9\LHAAP46RAOYR8\LHAAP46RAOYR9.aprx




- Shallow Monitoring Well
- Shallow/Intermediate Monitoring Well
- Intermediate Monitoring Well
- Deep Monitoring Well
- RA-O Monitoring Well
- Surface Water Sample Location
- Former Railroad Location
- Culvert
- Surveyed Land Use Control Boundary
- Stream
- Roads
- Former Buildings
- LHAAP-46 Site Boundary

Note:
1. RA-O = Remedial Action Operations
2. LHAAP = Longhorn Army Ammunition Plant

N

0 250 500 Feet

U.S. ARMY CORP OF ENGINEERS
TULSA DISTRICT
TULSA, OKLAHOMA

PCIbhate APTIM

Figure 2-6

Year 10 Annual RA-O Monitoring Locations
Ninth Annual RA-O Report
LHAAP-46
LONGHORN ARMY AMMUNITION PLANT
KARNACK, TEXAS

Date: 6/3/2024

Document Path: F:\Projects\Longhorn\LHAAP\Documents\Mxd\LHAAP46\RAO\Year9\LHAAP46RAOYR8\LHAAP46RAOYR9.aprx

**Figure 3-1a**
**Intermediate Montioring Well 46WW02**

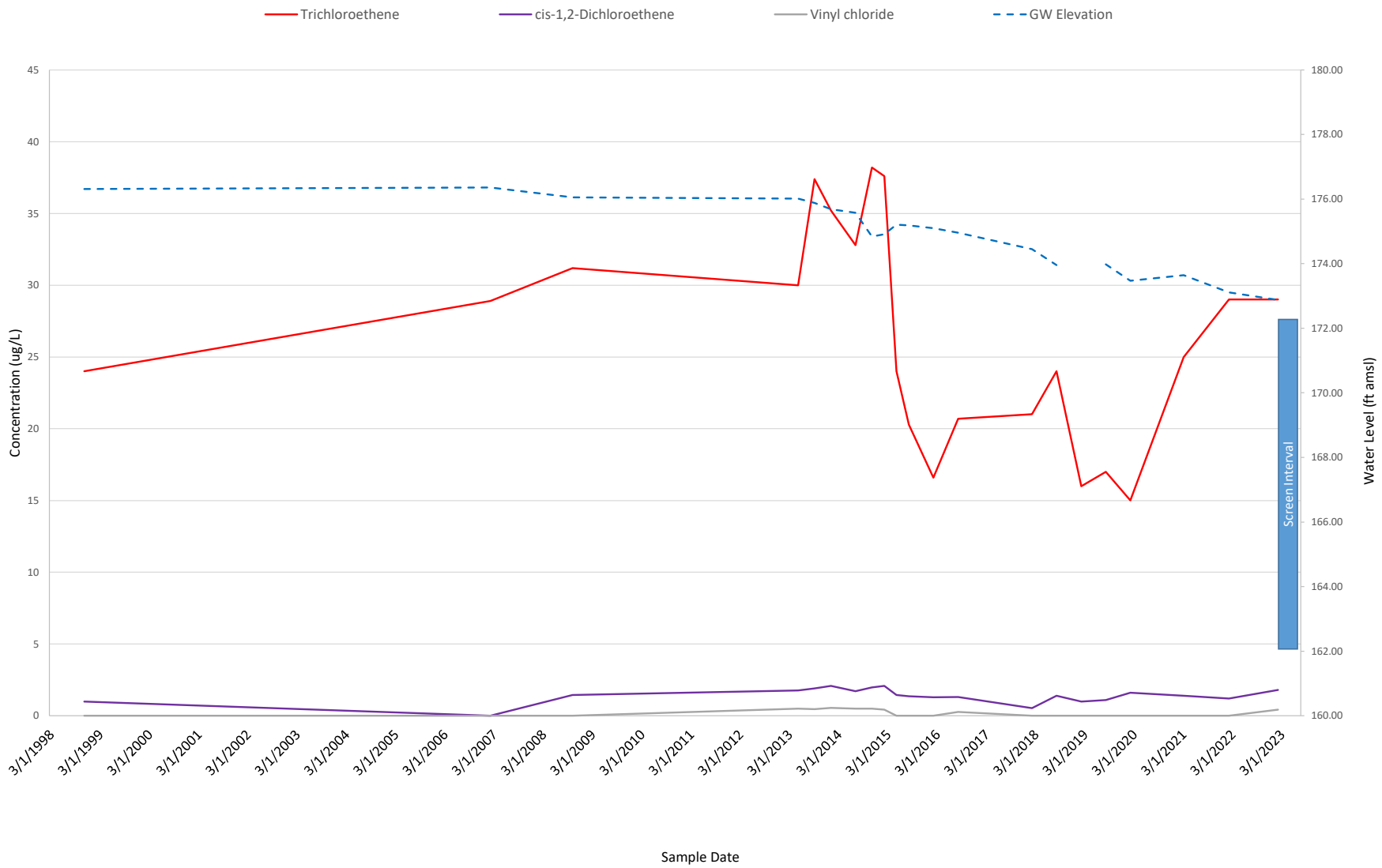


**Figure 3-1b**
**Intermediate Montioring Well 46WW05**

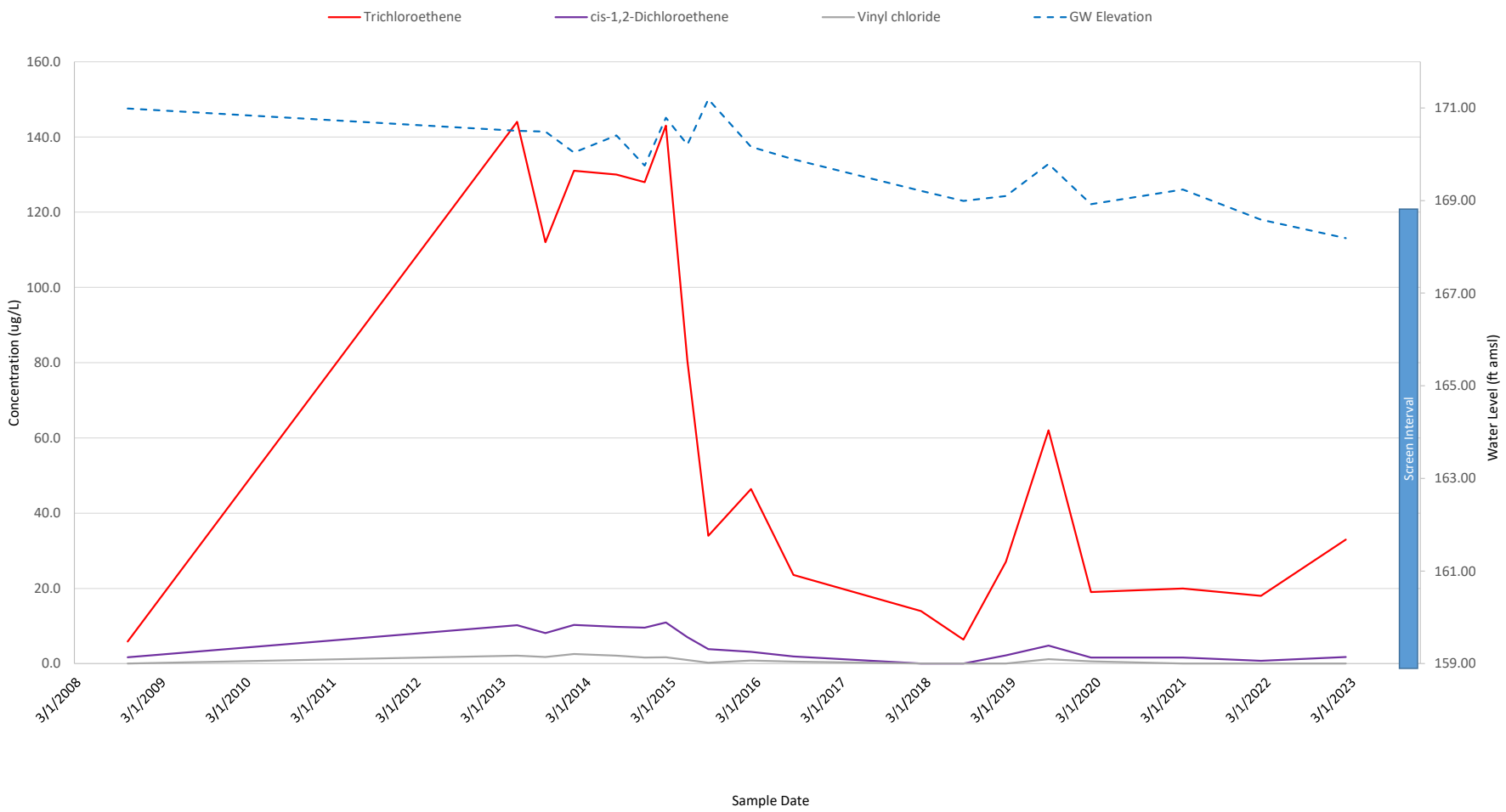
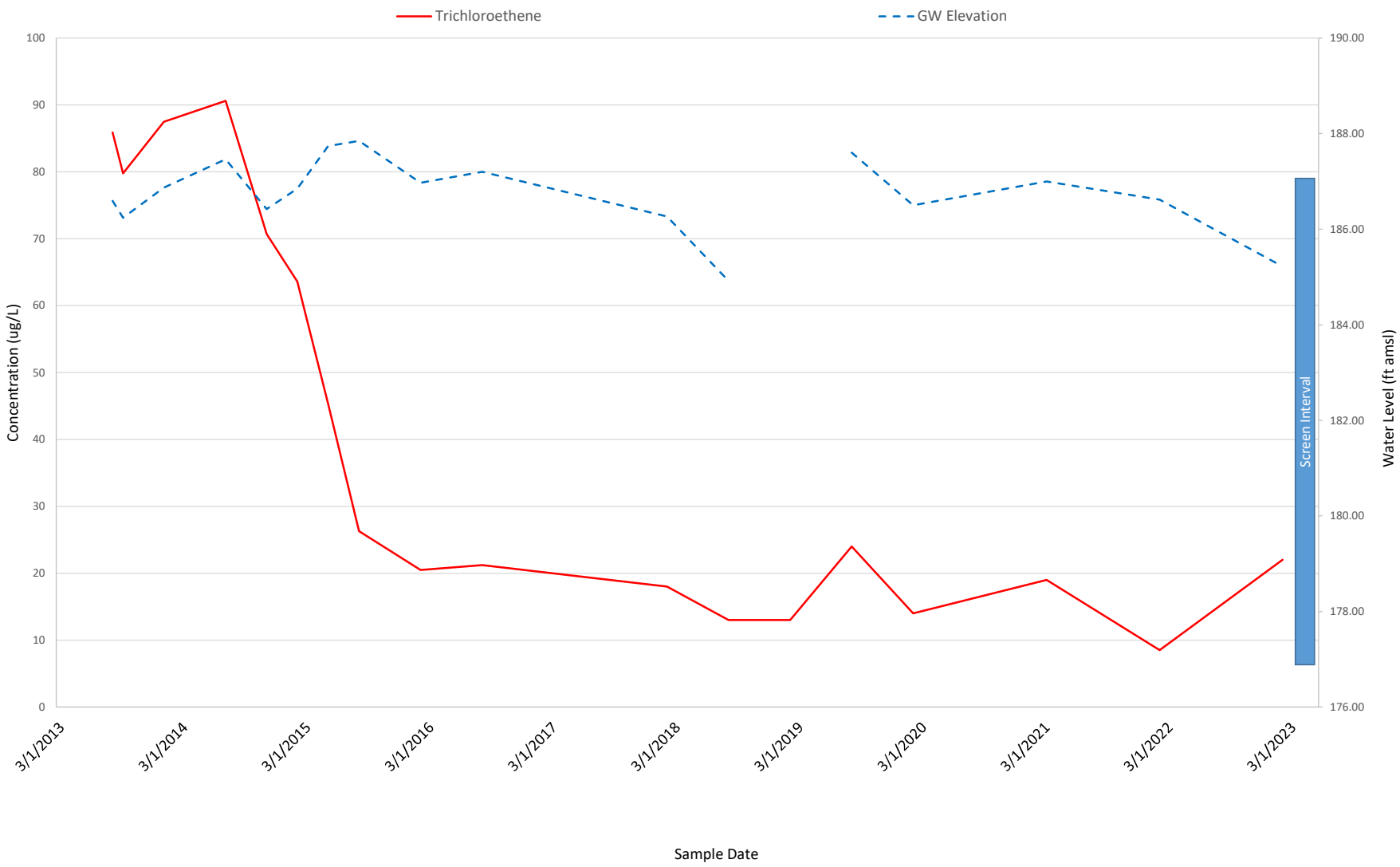
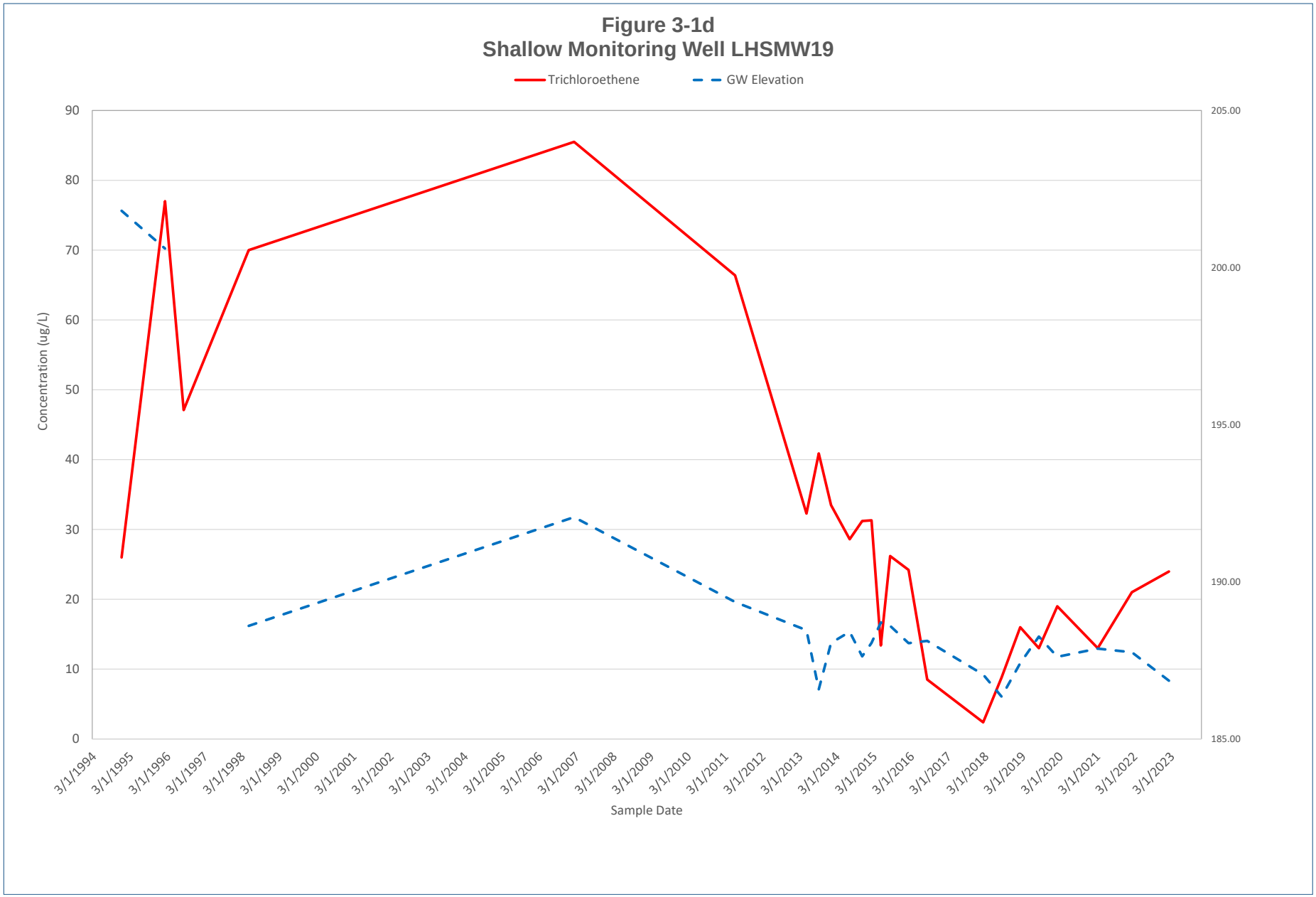
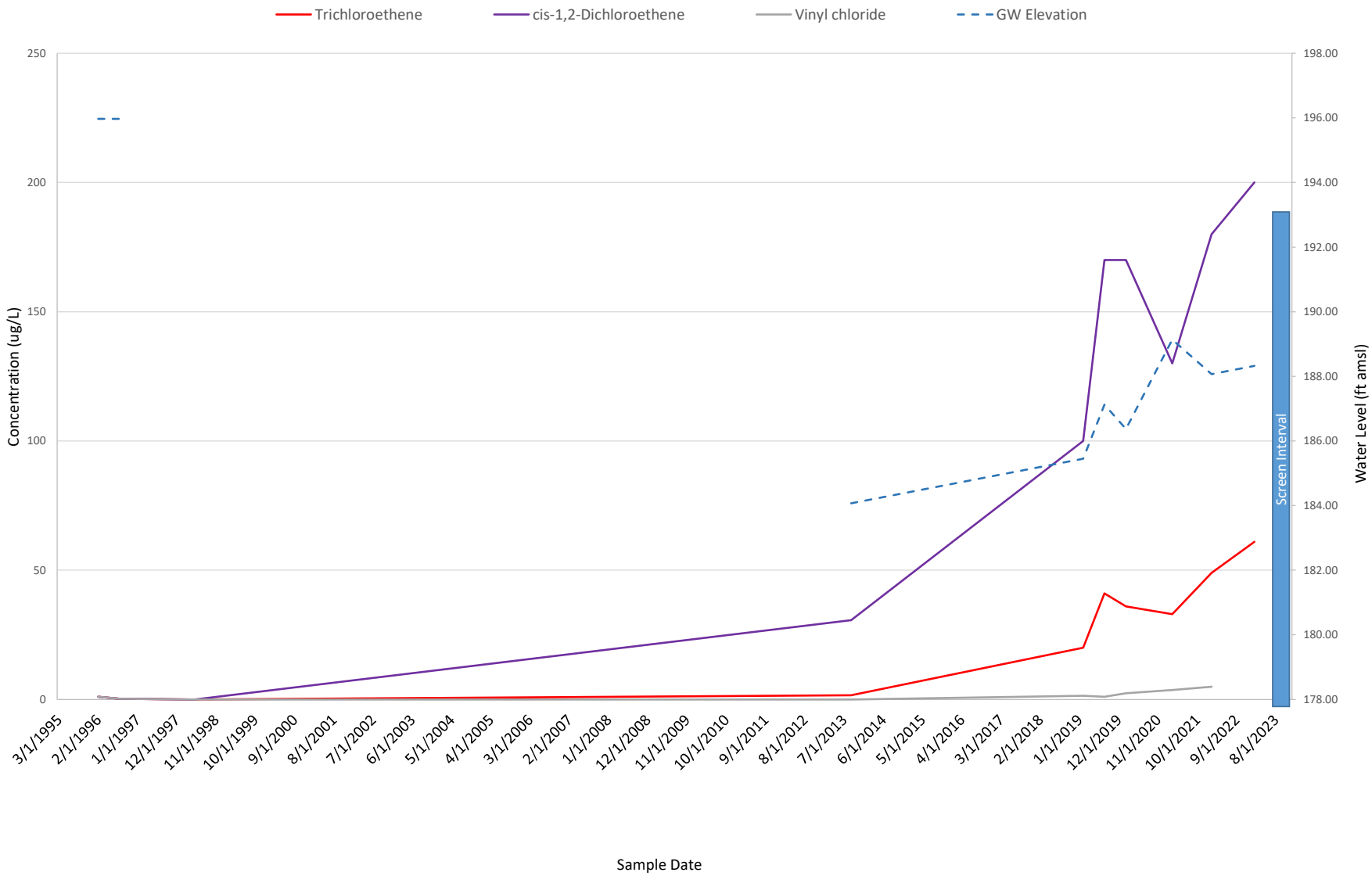


**Figure 3-1c**
**Shallow Montioring Well 46WW11**




Figure 3-1d
Shallow Monitoring Well LHSMW19
Trichloroethene
GW Elevation
Concentration (ug/L)
Sample Date
0
10
20
30
40
50
60
70
80
90
185.00
190.00
195.00
200.00
205.00
3/1/1994
3/1/1995
3/1/1996
3/1/1997
3/1/1998
3/1/1999
3/1/2000
3/1/2001
3/1/2002
3/1/2003
3/1/2004
3/1/2005
3/1/2006
3/1/2007
3/1/2008
3/1/2009
3/1/2010
3/1/2011
3/1/2012
3/1/2013
3/1/2014
3/1/2015
3/1/2016
3/1/2017
3/1/2018
3/1/2019
3/1/2020
3/1/2021
3/1/2022
3/1/2023

## Figure 3-1e
## Shallow Montioring Well LHSMW21



# Appendix A

# Annual Land Use Control Compliance Certification Documentation

# Sample Annual Land Use Control Compliance Certification Documentation

In accordance with the Remedial Design for LHAAP-46 dated September 30, 2011, a certification of site was conducted by APTIM [indicate transferee] on 6/23/23.

A summary of land use control mechanisms is as follows:

Groundwater restriction – restriction of the use of groundwater to environmental monitoring and testing until cleanup levels are met [Indicate whether groundwater restrictions are still required at LHAAP-46]

A summary of compliance with land use and restriction covenants is as follows:

No use of groundwater, installation of new groundwater wells, or tampering with existing wells at LHAAP-46.

I, the undersigned, do document that the certification was performed as indicated above, and that the above information is true and correct to the best of my knowledge, information, and belief.

Date: June 23, 2023

Name/Title: William Foss / Sr. Geologist

Signature: 

Annual compliance certification forms shall be completed no later than March 1 of each year for the previous calendar year.

# Appendix B

# Photographic Log and Well Inspection Forms

# PHOTO LOG

| Photo No. | Date | Task and Description |
|---|---|---|
| 1 | 2-6-2023 | Monitoring Well 46WW01 |
| 2 | 2-6-2023 | Monitoring Well 46WW02 |
| 3 | 2-6-2023 | Monitoring Well 46WW03 |
| 4 | 2-9-2023 | Monitoring Well 46WW04 |
| 5 | 2-7-2023 | Monitoring Well 46WW05 |
| 6 | 2-9-2023 | Monitoring Well 46WW06 |
| 7 | 2-6-2023 | Monitoring Well 46WW07 |
| 8 | 2-9-2023 | Monitoring Well 46WW08 |
| 9 | 2-7-2023 | Monitoring Well 46WW09 |
| 10 | 2-9-2023 | Monitoring Well 46WW10 |
| 11 | 2-9-2023 | Monitoring Well 46WW11 |
| 12 | 2-6-2023 | Monitoring Well 46WW12 |
| 13 | 2-6-2023 | Monitoring Well 46WW13 |
| 14 | 2-6-2023 | Monitoring Well 46WW14 |
| 15 | | Monitoring Well 46WW15 – Photo Unavailable |
| 16 | 2-6-2023 | Monitoring Well 46WW16 |
| 17 | 2-6-2023 | Monitoring Well 46WW17 |
| 18 | 2-9-2023 | Monitoring Well LHSMW17 |
| 19 | 2-9-2023 | Monitoring Well LHSMW18 |
| 20 | 2-9-2023 | Monitoring Well LHSMW19 |
| 21 | 2-9-2023 | Monitoring Well LHSMW20 |
| 22 | 2-6-2023 | Monitoring Well LHSMW21 |
| 23 | 2-6-2023 | Monitoring Well LHSMW22 |
| 24 | 2-6-2023 | Monitoring Well LHSMW23R |
| 25 | 2-9-2023 | Monitoring Well LHSMW24 |
| 26 | 2-9-2023 | Monitoring Well LHSMW25 |

Note: Photos are hyperlinked.




**PHOTO 1: Monitoring Well 46WW01**
**DATE: February 6, 2023**




**PHOTO 2: Monitoring Well 46WW02**
**DATE: February 6, 2023**




**PHOTO 3: Monitoring Well 46WW03**
**DATE: February 6, 2023**



**PHOTO 4: Monitoring Well 46WW04**
**DATE: February 9, 2023**




**PHOTO 5:** **Monitoring Well 46WW05**
**DATE:** **February 7, 2023**



**PHOTO 6:** **Monitoring Well 46WW06**
**DATE:** **February 9, 2023**




**PHOTO 7:** **Monitoring Well 46WW07**
**DATE:** **February 6, 2023**



**PHOTO 8:** **Monitoring Well 46WW08**
**DATE:** **February 9, 2023**




**PHOTO 9: Monitoring Well 46WW09**
**DATE: February 7, 2023**



**PHOTO 10: Monitoring Well 46WW10**
**DATE: February 9, 2023**




**PHOTO 11: Monitoring Well 46WW11**
**DATE: February 9, 2023**




**PHOTO 12: Monitoring Well 46WW12**
**DATE: February 6, 2023**



**PHOTO 13: Monitoring Well 46WW13**
**DATE: February 6, 2023**



**PHOTO 14: Monitoring Well 46WW14**
**DATE: February 6, 2023**

**PHOTO 15: Monitoring Well 46WW15 – Photo Unavailable**
**DATE:**



**PHOTO 16: Monitoring Well 46WW16**
**DATE: February 6, 2023**



**PHOTO 17: Monitoring Well 46WW17**
**DATE: February 6, 2023**




**PHOTO 18: Monitoring Well LHSMW17**
**DATE: February 9, 2023**




**PHOTO 19: Monitoring Well LHSMW18**
**DATE: February 9, 2023**



**PHOTO 20: Monitoring Well LHSMW19**
**DATE: February 9, 2023**



**PHOTO 21: Monitoring Well LHSMW20**
**DATE: February 9, 2023**



**PHOTO 22: Monitoring Well LHSMW21**
**DATE: February 6, 2023**



**PHOTO 23: Monitoring Well LHSMW22**
**DATE: February 6, 2023**




**PHOTO 24: Monitoring Well LHSMW23R**
**DATE: February 6, 2023**



**PHOTO 25: Monitoring Well LHSMW24**
**DATE: February 9, 2023**




**PHOTO 26: Monitoring Well LHSMW25**
**DATE: February 9, 2023**

01254904

# WELL INSPECTION FORM

Job Name: LHAAP
Job No.: 501032
Client: Army
Site Name: 46
Well ID: 46WW01
Inspection Date: 2/6/23
Well Completion Depth/ Measured Depth: 26.92
Inspector: Scott Beesinger

**☒ ABOVE GROUND**

Well Accessible? ☒ Yes ☐ No
Protective casing? ☒ Yes ☐ No
Material: METAL
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Need Paint
Lid Condition: ☒ Good ☐ Broken ☒ Cracked
Hinge Condition: ☒ Good ☐ Less than 50% rusted ☐ More than 50% rusted

**☐ FLUSH MOUNTED** NA

Well cover present? ☐ Yes ☐ No
Condition: ☐ Good ☐ Broken ☐ Cracked
Condition of Sump: ☐ Clean ☐ Dry ☐ Standing Water

**CONCRETE PAD:**

Sloped away from casing? ☒ Yes ☐ No
Pad Area Cleared of Vegetation? ☒ Yes ☐ No
Check any of the following features that apply:
☐ Many Cracks ☐ Gap Around Casing ☐ Few Cracks ☐ Ponded Water ☐ No Pad Present

**WELL CONDITION:**

Inner Diameter (inches): 4"
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Other (describe)
Cap present? ☒ Yes ☐ No
Well lock present? ☒ Yes ☐ No
Lock functioning properly? ☒ Yes ☐ No
Are bollards present and stable? ☒ Yes ☐ No
Well ID visible? ☒ Yes ☐ No

**WELL INTEGRITY:**

Bailer present? ☐ Yes ☒ No
Visual obstruction? ☐ Yes ☒ No
Is well open to completed depth? (complete when gauging) ☒ Yes ☐ No
Is silt present in well? (complete when gauging) ☒ Yes ☐ No
Is silt greater than 10% of well screen length? (complete when gauging) ☐ Yes ☒ No

**COMMENTS:**

01254905

# WELL INSPECTION FORM

Job Name: LHAAP
Job No.: 501032
Client: Army
Site Name: 46
Well ID: 46WW02
Inspection Date: 2/6/23
Well Completion Depth/ Measured Depth: 47.65
Inspector: Scott Beasinger

## ☒ ABOVE GROUND

Well Accessible? ☒ Yes ☐ No
Protective casing? ☒ Yes ☐ No
Material: METAL
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Need Paint
Lid Condition: ☒ Good ☐ Broken ☒ Cracked
Hinge Condition: ☒ Good ☐ Less than 50% rusted ☐ More than 50% rusted

## ☐ FLUSH MOUNTED

Well cover present? NA ☐ Yes ☐ No
Condition: ☐ Good ☐ Broken ☐ Cracked
Condition of Sump: ☐ Clean ☐ Dry ☐ Standing Water

## CONCRETE PAD:

Sloped away from casing? ☒ Yes ☐ No
Pad Area Cleared of Vegetation? ☒ Yes ☐ No
Check any of the following features that apply:
☐ Many Cracks ☐ Gap Around Casing ☐ Few Cracks ☐ Ponded Water ☐ No Pad Present

## WELL CONDITION:

Inner Diameter (inches): 4"
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Other (describe)
Cap present? ☒ Yes ☐ No
Well lock present? ☒ Yes ☐ No
Lock functioning properly? ☒ Yes ☐ No
Are bollards present and stable? ☒ Yes ☐ No
Well ID visible? ☒ Yes ☐ No

## WELL INTEGRITY:

Bailer present? ☐ Yes ☒ No
Visual obstruction? ☐ Yes ☒ No
Is well open to completed depth? (complete when gauging) ☒ Yes ☐ No
Is silt present in well? (complete when gauging) ☒ Yes ☐ No
Is silt greater than 10% of well screen length? (complete when gauging) ☐ Yes ☒ No

## COMMENTS:

01254906

# WELL INSPECTION FORM

Job Name: LHAAP
Job No.: 501032
Client: ARMY
Site Name: 46
Well ID: 46MW03
Inspection Date: 2/6/23
Well Completion Depth/ Measured Depth: 103.55
Inspector: Scott Beesinger

**☒ ABOVE GROUND**

Well Accessible? ☒ Yes ☐ No
Protective casing? ☒ Yes ☐ No
Material: METAL
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Need Paint
Lid Condition: ☒ Good ☐ Broken ☒ Cracked
Hinge Condition: ☒ Good ☐ Less than 50% rusted ☐ More than 50% rusted

**☐ FLUSH MOUNTED**

Well cover present? NA ☐ Yes ☐ No
Condition: ☐ Good ☐ Broken ☐ Cracked
Condition of Sump: ☐ Clean ☐ Dry ☐ Standing Water

**CONCRETE PAD:**

Sloped away from casing? ☒ Yes ☐ No
Pad Area Cleared of Vegetation? ☒ Yes ☐ No
Check any of the following features that apply:
☐ Many Cracks ☐ Gap Around Casing ☐ Few Cracks ☐ Ponded Water ☐ No Pad Present

**WELL CONDITION:**

Inner Diameter (inches): 4"
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Other (describe)
Cap present? ☒ Yes ☐ No
Well lock present? ☒ Yes ☐ No
Lock functioning properly? ☒ Yes ☐ No
Are bollards present and stable? ☒ Yes ☐ No
Well ID visible? ☒ Yes ☐ No

**WELL INTEGRITY:**

Bailer present? ☐ Yes ☒ No
Visual obstruction? ☒ Yes ☐ No
Is well open to completed depth? (complete when gauging)
Is silt present in well? (complete when gauging) ☐ Yes ☒ No
Is silt greater than 10% of well screen length? (complete when gauging) ☐ Yes ☒ No

**COMMENTS:**

01254907

# WELL INSPECTION FORM

Job Name: LHAAP
Job No.: 501032
Client: ARMY
Site Name: 46

Well ID: 46WW04
Inspection Date: 2/9/23
Well Completion Depth/ Measured Depth: 26.92
Inspector: Scott Beasinger

## ☒ ABOVE GROUND

Well Accessible? ☒ Yes ☐ No
Protective casing? ☒ Yes ☐ No
Material: METAL
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Need Paint
Lid Condition: ☒ Good ☐ Broken ☐ Cracked
Hinge Condition: ☒ Good ☐ Less than 50% rusted ☐ More than 50% rusted

## ☐ FLUSH MOUNTED

NA

Well cover present? ☐ Yes ☐ No
Condition: ☐ Good ☐ Broken ☐ Cracked
Condition of Sump: ☐ Clean ☐ Dry ☐ Standing Water

## CONCRETE PAD:

Sloped away from casing? ☒ Yes ☐ No
Pad Area Cleared of Vegetation? ☒ Yes ☐ No
Check any of the following features that apply:
☐ Many Cracks ☐ Gap Around Casing ☐ Few Cracks ☐ Ponded Water ☐ No Pad Present

## WELL CONDITION:

Inner Diameter (inches): 6/11
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Other (describe)
Cap present? ☒ Yes ☐ No
Well lock present? ☒ Yes ☐ No
Lock functioning properly? ☒ Yes ☐ No
Are bollards present and stable? ☒ Yes ☐ No
Well ID visible? ☒ Yes ☐ No

## WELL INTEGRITY:

Bailer present? ☐ Yes ☒ No
Visual obstruction? ☒ Yes ☐ No
Is well open to completed depth? (complete when gauging)
Is silt present in well? (complete when gauging) ☒ Yes ☐ No
Is silt greater than 10% of well screen length? (complete when gauging) ☐ Yes ☒ No

## COMMENTS:

01254908

# WELL INSPECTION FORM

Job Name: LHAAP
Job No.: 501032
Client: Army
Site Name: 46
Well ID: 46MW05
Inspection Date: 2/7/23
Well Completion Depth/ Measured Depth: 46.45
Inspector: Scott Baesinger

**☒ ABOVE GROUND**

Well Accessible? ☒ Yes ☐ No
Protective casing? ☒ Yes ☐ No
Material: METAL
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Need Paint
Lid Condition: ☒ Good ☐ Broken ☒ Cracked
Hinge Condition: ☒ Good ☐ Less than 50% rusted ☐ More than 50% rusted

**☐ FLUSH MOUNTED**

Well cover present? NA ☐ Yes ☐ No
Condition: ☐ Good ☐ Broken ☐ Cracked
Condition of Sump: ☐ Clean ☐ Dry ☐ Standing Water

**CONCRETE PAD:**

Sloped away from casing? ☒ Yes ☐ No
Pad Area Cleared of Vegetation? ☒ Yes ☐ No
Check any of the following features that apply:
☐ Many Cracks ☐ Gap Around Casing ☐ Few Cracks ☐ Ponded Water ☐ No Pad Present

**WELL CONDITION:**

Inner Diameter (inches): 4"
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Other (describe)
Cap present? ☒ Yes ☐ No
Well lock present? ☒ Yes ☐ No
Lock functioning properly? ☒ Yes ☐ No
Are bollards present and stable? ☒ Yes ☐ No
Well ID visible? ☒ Yes ☐ No

**WELL INTEGRITY:**

Bailer present? ☐ Yes ☒ No
Visual obstruction? [illegible]
Is well open to completed depth? (complete when gauging) ☒ Yes ☐ No
Is silt present in well? (complete when gauging) ☒ Yes ☐ No
Is silt greater than 10% of well screen length? (complete when gauging) ☐ Yes ☒ No

**COMMENTS:**

01254909

# WELL INSPECTION FORM

Job Name: LHAAP
Job No.: 501032
Client: ARMY
Site Name: 46
Well ID: 46WW06
Inspection Date: 2/9/23
Well Completion Depth/ Measured Depth: 52.33
Inspector: Scott Beesinger

**☒ ABOVE GROUND**

Well Accessible? ☒ Yes ☐ No
Protective casing? ☒ Yes ☐ No
Material: METAL
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Need Paint
Lid Condition: ☒ Good ☐ Broken ☒ Cracked
Hinge Condition: ☒ Good ☐ Less than 50% rusted ☐ More than 50% rusted

**☐ FLUSH MOUNTED** NA

Well cover present? ☐ Yes ☐ No
Condition: ☐ Good ☐ Broken ☐ Cracked
Condition of Sump: ☐ Clean ☐ Dry ☐ Standing Water

**CONCRETE PAD:**

Sloped away from casing? ☒ Yes ☐ No
Pad Area Cleared of Vegetation? ☒ Yes ☐ No
Check any of the following features that apply:
☐ Many Cracks ☐ Gap Around Casing ☐ Few Cracks ☐ Ponded Water ☐ No Pad Present

**WELL CONDITION:**

Inner Diameter (inches): 4"
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Other (describe)
Cap present? ☒ Yes ☐ No
Well lock present? ☒ Yes ☐ No
Lock functioning properly? ☒ Yes ☐ No
Are bollards present and stable? ☒ Yes ☐ No
Well ID visible? ☒ Yes ☐ No

**WELL INTEGRITY:**

Bailer present? ☐ Yes ☒ No
Visual obstruction? ☐ Yes ☒ No
Is well open to completed depth? (complete when gauging) ☒ Yes ☐ No
Is silt present in well? (complete when gauging) ☒ Yes ☐ No
Is silt greater than 10% of well screen length? (complete when gauging) ☐ Yes ☒ No

**COMMENTS:**

01254910

# WELL INSPECTION FORM

Job Name: LHAAP
Job No.: 501032
Client: ARMY
Site Name: 46
Well ID: 46WW07
Inspection Date: 2/6/23
Well Completion Depth/ Measured Depth: 51.67
Inspector: SCOTT BEGGINGER

**ABOVE GROUND**

Well Accessible? ☒ Yes ☐ No
Protective casing? ☒ Yes ☐ No
Material: METAL
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Need Paint
Lid Condition: ☒ Good ☐ Broken ☒ Cracked
Hinge Condition: ☒ Good ☐ Less than 50% rusted ☐ More than 50% rusted

**☐ FLUSH MOUNTED** NA

Well cover present? ☐ Yes ☐ No
Condition: ☐ Good ☐ Broken ☐ Cracked
Condition of Sump: ☐ Clean ☐ Dry ☐ Standing Water

**CONCRETE PAD:**

Sloped away from casing? ☒ Yes ☐ No
Pad Area Cleared of Vegetation? ☒ Yes ☐ No
Check any of the following features that apply:
☐ Many Cracks ☐ Gap Around Casing ☐ Few Cracks ☐ Ponded Water ☐ No Pad Present

**WELL CONDITION:**

Inner Diameter (inches): 4"
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Other (describe)
Cap present? ☒ Yes ☐ No
Well lock present? ☒ Yes ☐ No
Lock functioning properly? ☒ Yes ☐ No
Are bollards present and stable? ☒ Yes ☐ No
Well ID visible? ☒ Yes ☐ No

**WELL INTEGRITY:**

Bailer present? ☐ Yes ☒ No
Visual obstruction? ☒ Yes ☐ No
Is well open to completed depth? (complete when gauging)
Is silt present in well? (complete when gauging) ☒ Yes ☐ No
Is silt greater than 10% of well screen length? (complete when gauging) ☐ Yes ☒ No

**COMMENTS:**

01254911

# WELL INSPECTION FORM

Job Name: LHAAP
Job No.: 501032
Client: ARmy
Site Name: 46

Well ID: 46WW08
Inspection Date: 2/9/23
Well Completion Depth/ Measured Depth: 45.33
Inspector: Scott Baesinger

## ☒ ABOVE GROUND

Well Accessible? ☒ Yes ☐ No
Protective casing? ☒ Yes ☐ No
Material: METAL
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Need Paint
Lid Condition: ☒ Good ☐ Broken ☒ Cracked
Hinge Condition: ☒ Good ☐ Less than 50% rusted ☐ More than 50% rusted

## ☐ FLUSH MOUNTED

Well cover present? NA ☐ Yes ☐ No
Condition: ☐ Good ☐ Broken ☐ Cracked
Condition of Sump: ☐ Clean ☐ Dry ☐ Standing Water

## CONCRETE PAD:

Sloped away from casing? ☒ Yes ☐ No
Pad Area Cleared of Vegetation? ☒ Yes ☐ No
Check any of the following features that apply:
☐ Many Cracks ☐ Gap Around Casing ☐ Few Cracks ☐ Ponded Water ☐ No Pad Present

## WELL CONDITION:

Inner Diameter (inches): 4"
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Other (describe)
Cap present? ☒ Yes ☐ No
Well lock present? ☒ Yes ☐ No
Lock functioning properly? ☒ Yes ☐ No
Are bollards present and stable? ☒ Yes ☐ No
Well ID visible? ☒ Yes ☐ No

## WELL INTEGRITY:

Bailer present? ☐ Yes ☒ No
Visual obstruction? ☐ Yes ☐ No
Is well open to completed depth? (complete when gauging) ☒ Yes ☐ No
Is silt present in well? (complete when gauging) ☒ Yes ☐ No
Is silt greater than 10% of well screen length? (complete when gauging) ☐ Yes ☒ No

## COMMENTS:

01254912

# WELL INSPECTION FORM

Job Name: LHAAP
Job No.: 501032
Client: Army
Site Name: 46
Well ID: 46WW09
Inspection Date: 2/7/23
Well Completion Depth/ Measured Depth: 42.25
Inspector: Scott Beesinger

**ABOVE GROUND**

Well Accessible? ☒ Yes ☐ No
Protective casing? ☒ Yes ☐ No
Material: METAL
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Need Paint
Lid Condition: ☒ Good ☐ Broken ☒ Cracked
Hinge Condition: ☒ Good ☐ Less than 50% rusted ☐ More than 50% rusted

**FLUSH MOUNTED**

Well cover present? NA ☐ Yes ☐ No
Condition: ☐ Good ☐ Broken ☐ Cracked
Condition of Sump: ☐ Clean ☐ Dry ☐ Standing Water

**CONCRETE PAD:**

Sloped away from casing? ☒ Yes ☐ No
Pad Area Cleared of Vegetation? ☒ Yes ☐ No
Check any of the following features that apply:
☐ Many Cracks ☐ Gap Around Casing ☐ Few Cracks ☐ Ponded Water ☐ No Pad Present

**WELL CONDITION:**

Inner Diameter (inches): 4"
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Other (describe)
Cap present? ☒ Yes ☐ No
Well lock present? ☒ Yes ☐ No
Lock functioning properly? ☒ Yes ☐ No
Are bollards present and stable? ☒ Yes ☐ No
Well ID visible? ☒ Yes ☐ No

**WELL INTEGRITY:**

Bailer present? ☐ Yes ☒ No
Visual obstruction? ☐ Yes ☒ No
Is well open to completed depth? (complete when gauging) ☒ Yes ☐ No
Is silt present in well? (complete when gauging) ☐ Yes ☒ No
Is silt greater than 10% of well screen length? (complete when gauging) ☐ Yes ☒ No

**COMMENTS:**

01254913

# WELL INSPECTION FORM

Job Name: LHAAP
Job No.: 501032
Client: Army
Site Name: 46
Well ID: 46WW10
Inspection Date: 2/9/23
Well Completion Depth/ Measured Depth: 25.33
Inspector: Scott Beesinger

☒ ABOVE GROUND
Well Accessible? ☒ Yes ☐ No
Protective casing? ☒ Yes ☐ No
Material: METAL
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Need Paint
Lid Condition: ☒ Good ☐ Broken ☐ Cracked
Hinge Condition: ☒ Good ☐ Less than 50% rusted ☐ More than 50% rusted

☐ FLUSH MOUNTED NA
Well cover present? ☐ Yes ☐ No
Condition: ☐ Good ☐ Broken ☐ Cracked
Condition of Sump: ☐ Clean ☐ Dry ☐ Standing Water

CONCRETE PAD:
Sloped away from casing? ☒ Yes ☐ No
Pad Area Cleared of Vegetation? ☒ Yes ☐ No
Check any of the following features that apply:
☐ Many Cracks ☐ Gap Around Casing ☐ Few Cracks ☐ Ponded Water ☐ No Pad Present

WELL CONDITION:
Inner Diameter (inches): 4"
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Other (describe)
Cap present? ☒ Yes ☐ No
Well lock present? ☒ Yes ☐ No
Lock functioning properly? ☒ Yes ☐ No
Are bollards present and stable? ☒ Yes ☐ No
Well ID visible? ☒ Yes ☐ No

WELL INTEGRITY:
Bailer present? ☐ Yes ☒ No
Visual obstruction? ☐ Yes ☒ No
Is well open to completed depth? (complete when gauging) ☒ Yes ☐ No
Is silt present in well? (complete when gauging) ☐ Yes ☒ No
Is silt greater than 10% of well screen length? (complete when gauging) ☐ Yes ☒ No

COMMENTS:

01254914

# WELL INSPECTION FORM

Job Name: LHAAP
Job No.: 501032
Client: Army
Site Name: 46
Well ID: 46MW11
Inspection Date: 2/9/23
Well Completion Depth/ Measured Depth: 32.75
Inspector: Scott Beesinger

## ABOVE GROUND

Well Accessible? ☒ Yes ☐ No
Protective casing? ☒ Yes ☐ No
Material: METAL
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Need Paint
Lid Condition: ☒ Good ☐ Broken ☒ Cracked
Hinge Condition: ☒ Good ☐ Less than 50% rusted ☐ More than 50% rusted

## ☐ FLUSH MOUNTED

Well cover present? NA ☐ Yes ☐ No
Condition: ☐ Good ☐ Broken ☐ Cracked
Condition of Sump: ☐ Clean ☐ Dry ☐ Standing Water

## CONCRETE PAD:

Sloped away from casing? ☒ Yes ☐ No
Pad Area Cleared of Vegetation? ☒ Yes ☐ No
Check any of the following features that apply:
☐ Many Cracks ☐ Gap Around Casing ☐ Few Cracks ☐ Ponded Water ☐ No Pad Present

## WELL CONDITION:

Inner Diameter (inches): 2"
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Other (describe)
Cap present? ☒ Yes ☐ No
Well lock present? ☒ Yes ☐ No
Lock functioning properly? ☒ Yes ☐ No
Are bollards present and stable? ☒ Yes ☐ No
Well ID visible? ☒ Yes ☐ No

## WELL INTEGRITY:

Bailer present? ☐ Yes ☒ No
Visual obstruction? ☐ Yes ☒ No
Is well open to completed depth? (complete when gauging) ☒ Yes ☐ No
Is silt present in well? (complete when gauging) ☒ Yes ☐ No
Is silt greater than 10% of well screen length? (complete when gauging) ☐ Yes ☒ No

## COMMENTS:

01254915

# WELL INSPECTION FORM

Job Name: LHAAP
Job No.: 501032
Client: ARMY
Site Name: 46
Well ID: 46WW12
Inspection Date: 2/6/23
Well Completion Depth/ Measured Depth: 29.43
Inspector: Scott Bassinger

## ☒ ABOVE GROUND

Well Accessible? ☒ Yes ☐ No
Protective casing? ☒ Yes ☐ No
Material: METAL
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Need Paint
Lid Condition: ☒ Good ☐ Broken ☒ Cracked
Hinge Condition: ☒ Good ☐ Less than 50% rusted ☐ More than 50% rusted

## ☐ FLUSH MOUNTED

NA

Well cover present? ☐ Yes ☐ No
Condition: ☐ Good ☐ Broken ☐ Cracked
Condition of Sump: ☐ Clean ☐ Dry ☐ Standing Water

## CONCRETE PAD:

Sloped away from casing? ☒ Yes ☐ No
Pad Area Cleared of Vegetation? ☒ Yes ☐ No
Check any of the following features that apply:
☐ Many Cracks ☐ Gap Around Casing ☐ Few Cracks ☐ Ponded Water ☐ No Pad Present

## WELL CONDITION:

Inner Diameter (inches): 4"
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Other (describe)
Cap present? ☒ Yes ☐ No
Well lock present? ☒ Yes ☐ No
Lock functioning properly? ☒ Yes ☐ No
Are bollards present and stable? ☒ Yes ☐ No
Well ID visible? ☒ Yes ☐ No

## WELL INTEGRITY:

Bailer present? ☐ Yes ☒ No
Visual obstruction? ☒ Yes ☐ No
Is well open to completed depth? (complete when gauging)
Is silt present in well? (complete when gauging) ☒ Yes ☐ No
Is silt greater than 10% of well screen length? (complete when gauging) ☐ Yes ☒ No

## COMMENTS:

01254916

# WELL INSPECTION FORM

Job Name: LHAAP
Job No.: 501032
Client: Army
Site Name: 46
Well ID: 46WW13
Inspection Date: 2/6/23
Well Completion Depth/ Measured Depth: 31.62
Inspector: Scott Bassinger

## ☒ ABOVE GROUND

Well Accessible? ☒ Yes ☐ No
Protective casing? ☒ Yes ☐ No
Material: METAL
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Need Paint
Lid Condition: ☒ Good ☐ Broken ☒ Cracked
Hinge Condition: ☒ Good ☐ Less than 50% rusted ☐ More than 50% rusted

## ☐ FLUSH MOUNTED

Well cover present? NA ☐ Yes ☐ No
Condition: ☐ Good ☐ Broken ☐ Cracked
Condition of Sump: ☐ Clean ☐ Dry ☐ Standing Water

## CONCRETE PAD:

Sloped away from casing? ☒ Yes ☐ No
Pad Area Cleared of Vegetation? ☒ Yes ☐ No
Check any of the following features that apply:
☐ Many Cracks ☐ Gap Around Casing ☐ Few Cracks ☐ Ponded Water ☐ No Pad Present

## WELL CONDITION:

Inner Diameter (inches): 4"
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Other (describe)
Cap present? ☒ Yes ☐ No
Well lock present? ☒ Yes ☐ No
Lock functioning properly? ☒ Yes ☐ No
Are bollards present and stable? ☒ Yes ☐ No
Well ID visible? ☒ Yes ☐ No

## WELL INTEGRITY:

Bailer present? ☐ Yes ☒ No
Visual obstruction? ☐ Yes ☒ No
Is well open to completed depth? (complete when gauging) ☒ Yes ☐ No
Is silt present in well? (complete when gauging) ☒ Yes ☐ No
Is silt greater than 10% of well screen length? (complete when gauging) ☐ Yes ☒ No

## COMMENTS:

01254917

# WELL INSPECTION FORM

Job Name: LHAAP
Job No.: 501032
Client: Army
Site Name: 46

Well ID: 46WW14
Inspection Date: 2/6/23
Well Completion Depth/ Measured Depth: 34.35
Inspector: Scott Beesinger

## ☒ ABOVE GROUND

Well Accessible? ☒ Yes ☐ No
Protective casing? ☒ Yes ☐ No
Material: METAL
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Need Paint
Lid Condition: ☒ Good ☐ Broken ☒ Cracked
Hinge Condition: ☒ Good ☐ Less than 50% rusted ☐ More than 50% rusted

## ☐ FLUSH MOUNTED

NA

Well cover present? ☐ Yes ☐ No
Condition: ☐ Good ☐ Broken ☐ Cracked
Condition of Sump: ☐ Clean ☐ Dry ☐ Standing Water

## CONCRETE PAD:

Sloped away from casing? ☒ Yes ☐ No
Pad Area Cleared of Vegetation? ☒ Yes ☐ No
Check any of the following features that apply:
☐ Many Cracks ☐ Gap Around Casing ☐ Few Cracks ☐ Ponded Water ☐ No Pad Present

## WELL CONDITION:

Inner Diameter (inches): 4"
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Other (describe)
Cap present? ☒ Yes ☐ No
Well lock present? ☒ Yes ☐ No
Lock functioning properly? ☒ Yes ☐ No
Are bollards present and stable? ☒ Yes ☐ No
Well ID visible? ☒ Yes ☐ No

## WELL INTEGRITY:

Bailer present? ☐ Yes ☒ No
Visual obstruction? [illegible]
Is well open to completed depth? (complete when gauging) ☒ Yes ☐ No
Is silt present in well? (complete when gauging) ☒ Yes ☐ No
Is silt greater than 10% of well screen length? (complete when gauging) ☐ Yes ☒ No

## COMMENTS:

01254918

# WELL INSPECTION FORM

Job Name: LHAAP
Job No.: 501032
Client: ARmy
Site Name: 46
Well ID: 46MW15
Inspection Date: 2/9/23
Well Completion Depth/ Measured Depth: 30.22
Inspector: Scott Beesinger

## ☒ ABOVE GROUND

Well Accessible? ☒ Yes ☐ No
Protective casing? ☒ Yes ☐ No
Material: METAL
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Need Paint
Lid Condition: ☒ Good ☐ Broken ☒ Cracked
Hinge Condition: ☒ Good ☐ Less than 50% rusted ☐ More than 50% rusted

## ☐ FLUSH MOUNTED

Well cover present? NA ☐ Yes ☐ No
Condition: ☐ Good ☐ Broken ☐ Cracked
Condition of Sump: ☐ Clean ☐ Dry ☐ Standing Water

## CONCRETE PAD:

Sloped away from casing? ☒ Yes ☐ No
Pad Area Cleared of Vegetation? ☒ Yes ☐ No
Check any of the following features that apply:
☐ Many Cracks ☐ Gap Around Casing ☐ Few Cracks ☐ Ponded Water ☐ No Pad Present

## WELL CONDITION:

Inner Diameter (inches): 4"
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Other (describe)
Cap present? ☒ Yes ☐ No
Well lock present? ☒ Yes ☐ No
Lock functioning properly? ☒ Yes ☐ No
Are bollards present and stable? ☒ Yes ☐ No
Well ID visible? ☒ Yes ☐ No

## WELL INTEGRITY:

Bailer present? ☐ Yes ☒ No
Visual obstruction? ☒ Yes ☐ No
Is well open to completed depth? (complete when gauging)
Is silt present in well? (complete when gauging) ☒ Yes ☐ No
Is silt greater than 10% of well screen length? (complete when gauging) ☐ Yes ☒ No

## COMMENTS:

01254919

# WELL INSPECTION FORM

Job Name: LHAAP
Job No.: 501032
Client: ARMY
Site Name: 46
Well ID: 46WW16
Inspection Date: 2/6/23
Well Completion Depth/ Measured Depth: 51.50
Inspector: Scott Baggenger

## ☒ ABOVE GROUND

Well Accessible? ☒ Yes ☐ No
Protective casing? ☒ Yes ☐ No
Material: METAL
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Need Paint
Lid Condition: ☒ Good ☐ Broken ☒ Cracked
Hinge Condition: ☒ Good ☐ Less than 50% rusted ☐ More than 50% rusted

## ☐ FLUSH MOUNTED

Well cover present? NA ☐ Yes ☐ No
Condition: ☐ Good ☐ Broken ☐ Cracked
Condition of Sump: ☐ Clean ☐ Dry ☐ Standing Water

## CONCRETE PAD:

Sloped away from casing? ☒ Yes ☐ No
Pad Area Cleared of Vegetation? ☒ Yes ☐ No
Check any of the following features that apply:
☐ Many Cracks ☐ Gap Around Casing ☐ Few Cracks ☐ Ponded Water ☐ No Pad Present

## WELL CONDITION:

Inner Diameter (inches): 4"
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Other (describe)
Cap present? ☒ Yes ☐ No
Well lock present? ☒ Yes ☐ No
Lock functioning properly? ☒ Yes ☐ No
Are bollards present and stable? ☒ Yes ☐ No
Well ID visible? ☒ Yes ☐ No

## WELL INTEGRITY:

Bailer present? ☐ Yes ☒ No
Visual obstruction? ☐ Yes ☒ No
Is well open to completed depth? (complete when gauging) ☒ Yes ☐ No
Is silt present in well? (complete when gauging) ☒ Yes ☐ No
Is silt greater than 10% of well screen length? (complete when gauging) ☐ Yes ☒ No

## COMMENTS:

01254920

# WELL INSPECTION FORM

Job Name: LHAAP
Job No.: 501032
Client: ARMY
Site Name: 46
Well ID: 46WW17
Inspection Date: 2/9/23
Well Completion Depth/ Measured Depth: 36.55
Inspector: Scott Beesinger

## ☒ ABOVE GROUND

Well Accessible? ☒ Yes ☐ No
Protective casing? ☒ Yes ☐ No
Material: METAL
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Need Paint
Lid Condition: ☒ Good ☐ Broken ☒ Cracked
Hinge Condition: ☒ Good ☐ Less than 50% rusted ☐ More than 50% rusted

## ☐ FLUSH MOUNTED

Well cover present? NA ☐ Yes ☐ No
Condition: ☐ Good ☐ Broken ☐ Cracked
Condition of Sump: ☐ Clean ☐ Dry ☐ Standing Water

## CONCRETE PAD:

Sloped away from casing? ☒ Yes ☐ No
Pad Area Cleared of Vegetation? ☒ Yes ☐ No
Check any of the following features that apply:
☐ Many Cracks ☐ Gap Around Casing ☐ Few Cracks ☐ Ponded Water ☐ No Pad Present

## WELL CONDITION:

Inner Diameter (inches): 4"
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Other (describe)
Cap present? ☒ Yes ☐ No
Well lock present? ☒ Yes ☐ No
Lock functioning properly? ☒ Yes ☐ No
Are bollards present and stable? ☒ Yes ☐ No
Well ID visible? ☒ Yes ☐ No

## WELL INTEGRITY:

Bailer present? ☐ Yes ☒ No
Visual obstruction? ☒ Yes ☐ No
Is well open to completed depth? (complete when gauging)
Is silt present in well? (complete when gauging) ☒ Yes ☐ No
Is silt greater than 10% of well screen length? (complete when gauging) ☐ Yes ☒ No

## COMMENTS:

01254921

# WELL INSPECTION FORM

Job Name: LHAAP
Job No.: 501032
Client: Army
Site Name: 46
Well ID: LHSMW17
Inspection Date: 2/9/23
Well Completion Depth/ Measured Depth: 27.00
Inspector: Scott Beesinger

**ABOVE GROUND**

Well Accessible? ☒ Yes ☐ No
Protective casing? ☒ Yes ☐ No
Material: METAL
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Need Paint
Lid Condition: ☒ Good ☐ Broken ☐ Cracked
Hinge Condition: ☒ Good ☐ Less than 50% rusted ☐ More than 50% rusted

**☐ FLUSH MOUNTED** NA

Well cover present? ☐ Yes ☐ No
Condition: ☐ Good ☐ Broken ☐ Cracked
Condition of Sump: ☐ Clean ☐ Dry ☐ Standing Water

**CONCRETE PAD:**

Sloped away from casing? ☒ Yes ☐ No
Pad Area Cleared of Vegetation? ☒ Yes ☐ No
Check any of the following features that apply:
☐ Many Cracks ☐ Gap Around Casing ☐ Few Cracks ☐ Ponded Water ☐ No Pad Present

**WELL CONDITION:**

Inner Diameter (inches): 4"
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Other (describe)
Cap present? ☒ Yes ☐ No
Well lock present? ☒ Yes ☐ No
Lock functioning properly? ☒ Yes ☐ No
Are bollards present and stable? ☒ Yes ☐ No
Well ID visible? ☒ Yes ☐ No

**WELL INTEGRITY:**

Bailer present? ☐ Yes ☒ No
Visual obstruction? ☒ Yes ☐ No
Is well open to completed depth? (complete when gauging)
Is silt present in well? (complete when gauging) ☒ Yes ☐ No
Is silt greater than 10% of well screen length? (complete when gauging) ☐ Yes ☒ No

**COMMENTS:**

01254922

# WELL INSPECTION FORM

Job Name: LHAAP
Job No.: 501032
Client: Army
Site Name: 46
Well ID: LHSMW18
Inspection Date: 2/9/23
Well Completion Depth/ Measured Depth: 27.88
Inspector: Scott Beesinger

☒ ABOVE GROUND
Well Accessible? ☒ Yes ☐ No
Protective casing? ☒ Yes ☐ No
Material: METAL
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Need Paint
Lid Condition: ☒ Good ☐ Broken ☐ Cracked
Hinge Condition: ☒ Good ☐ Less than 50% rusted ☐ More than 50% rusted

☐ FLUSH MOUNTED
Well cover present? NA ☐ Yes ☐ No
Condition: ☐ Good ☐ Broken ☐ Cracked
Condition of Sump: ☐ Clean ☐ Dry ☐ Standing Water

CONCRETE PAD:
Sloped away from casing? ☒ Yes ☐ No
Pad Area Cleared of Vegetation? ☒ Yes ☐ No
Check any of the following features that apply:
☐ Many Cracks ☐ Gap Around Casing ☐ Few Cracks ☐ Ponded Water ☐ No Pad Present

WELL CONDITION:
Inner Diameter (inches): 4"
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Other (describe)
Cap present? ☒ Yes ☐ No
Well lock present? ☒ Yes ☐ No
Lock functioning properly? ☒ Yes ☐ No
Are bollards present and stable? ☒ Yes ☐ No
Well ID visible? ☒ Yes ☐ No

WELL INTEGRITY:
Bailer present? ☐ Yes ☒ No
Visual obstruction? ☐ Yes ☒ No
Is well open to completed depth? (complete when gauging) ☒ Yes ☐ No
Is silt present in well? (complete when gauging) ☒ Yes ☐ No
Is silt greater than 10% of well screen length? (complete when gauging) ☐ Yes ☒ No

COMMENTS:

01254923

# WELL INSPECTION FORM

Job Name: LHAAP
Job No.: 501032
Client: Army
Site Name: 46
Well ID: LHSmw19
Inspection Date: 2/9/23
Well Completion Depth/ Measured Depth: 29.98
Inspector: Scott Baesingar

**ABOVE GROUND**

Well Accessible? ☒ Yes ☐ No
Protective casing? ☒ Yes ☐ No
Material: METAL
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Need Paint
Lid Condition: ☒ Good ☐ Broken ☐ Cracked
Hinge Condition: ☒ Good ☐ Less than 50% rusted ☐ More than 50% rusted

**☐ FLUSH MOUNTED**

Well cover present? NA ☐ Yes ☐ No
Condition: ☐ Good ☐ Broken ☐ Cracked
Condition of Sump: ☐ Clean ☐ Dry ☐ Standing Water

**CONCRETE PAD:**

Sloped away from casing? ☒ Yes ☐ No
Pad Area Cleared of Vegetation? ☒ Yes ☐ No
Check any of the following features that apply:
☐ Many Cracks ☐ Gap Around Casing ☐ Few Cracks ☐ Ponded Water ☐ No Pad Present

**WELL CONDITION:**

Inner Diameter (inches): 4"
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Other (describe)
Cap present? ☒ Yes ☐ No
Well lock present? ☒ Yes ☐ No
Lock functioning properly? ☒ Yes ☐ No
Are bollards present and stable? ☒ Yes ☐ No
Well ID visible? ☒ Yes ☐ No

**WELL INTEGRITY:**

Bailer present? ☐ Yes ☒ No
Visual obstruction? ☐ Yes ☒ No
Is well open to completed depth? (complete when gauging) ☒ Yes ☐ No
Is silt present in well? (complete when gauging) ☐ Yes ☒ No
Is silt greater than 10% of well screen length? (complete when gauging) ☐ Yes ☒ No

**COMMENTS:**

01254924

# WELL INSPECTION FORM

Job Name: LHAAP
Job No.: 601032
Client: ARMY
Site Name: 46
Well ID: LHSMW20
Inspection Date: 2/9/23
Well Completion Depth/ Measured Depth: 25.08
Inspector: Scott Baggenbur

**ABOVE GROUND**

Well Accessible? ☒ Yes ☐ No
Protective casing? ☒ Yes ☐ No
Material: METAL
Condition: ☒ Good ☐ Broken ☐ Cracked ☒ Need Paint
Lid Condition: ☒ Good ☐ Broken ☐ Cracked
Hinge Condition: ☒ Good ☐ Less than 50% rusted ☐ More than 50% rusted

**☐ FLUSH MOUNTED** NA

Well cover present? ☐ Yes ☐ No
Condition: ☐ Good ☐ Broken ☐ Cracked
Condition of Sump: ☐ Clean ☐ Dry ☐ Standing Water

**CONCRETE PAD:**

Sloped away from casing? ☒ Yes ☐ No
Pad Area Cleared of Vegetation? ☒ Yes ☐ No
Check any of the following features that apply:
☐ Many Cracks ☐ Gap Around Casing ☐ Few Cracks ☐ Ponded Water ☐ No Pad Present

**WELL CONDITION:**

Inner Diameter (inches): 4"
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Other (describe)
Cap present? ☒ Yes ☐ No
Well lock present? ☒ Yes ☐ No
Lock functioning properly? ☒ Yes ☐ No
Are bollards present and stable? ☒ Yes ☐ No
Well ID visible? ☒ Yes ☐ No

**WELL INTEGRITY:**

Bailer present? ☐ Yes ☒ No
Visual obstruction? ☐ Yes ☐ No
Is well open to completed depth? (complete when gauging) ☒ Yes ☐ No
Is silt present in well? (complete when gauging) ☐ Yes ☒ No
Is silt greater than 10% of well screen length? (complete when gauging) ☐ Yes ☒ No

**COMMENTS:**

01254925

# WELL INSPECTION FORM

Job Name: LHAAP
Job No.: 501032
Client: Army
Site Name: 46
Well ID: LHSmw21
Inspection Date: 2/6/23
Well Completion Depth/ Measured Depth: 29.75
Inspector: Scott Beesinger

## ☒ ABOVE GROUND

Well Accessible? ☒ Yes ☐ No
Protective casing? ☒ Yes ☐ No
Material: METAL
Condition: ☐ Good ☐ Broken ☐ Cracked ☐ Need Paint
Lid Condition: ☒ Good ☐ Broken ☐ Cracked
Hinge Condition: ☒ Good ☐ Less than 50% rusted ☐ More than 50% rusted

## ☐ FLUSH MOUNTED

Well cover present? NA ☐ Yes ☐ No
Condition: ☐ Good ☐ Broken ☐ Cracked
Condition of Sump: ☐ Clean ☐ Dry ☐ Standing Water

## CONCRETE PAD:

Sloped away from casing? ☒ Yes ☐ No
Pad Area Cleared of Vegetation? ☒ Yes ☐ No
Check any of the following features that apply:
☐ Many Cracks ☐ Gap Around Casing ☐ Few Cracks ☐ Ponded Water ☐ No Pad Present

## WELL CONDITION:

Inner Diameter (inches): 4"
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Other (describe)
Cap present? ☒ Yes ☐ No
Well lock present? ☒ Yes ☐ No
Lock functioning properly? ☒ Yes ☐ No
Are bollards present and stable? ☒ Yes ☐ No
Well ID visible? ☒ Yes ☐ No

## WELL INTEGRITY:

Bailer present? ☐ Yes ☒ No
Visual obstruction? ☐ Yes ☒ No
Is well open to completed depth? (complete when gauging) ☒ Yes ☐ No
Is silt present in well? (complete when gauging) ☒ Yes ☐ No
Is silt greater than 10% of well screen length? (complete when gauging) ☐ Yes ☒ No

## COMMENTS:

01254926

# WELL INSPECTION FORM

Job Name: LHAAP
Job No.: 50132
Client: ARMY
Site Name: 46
Well ID: LHSMW22
Inspection Date: 2/6/23
Well Completion Depth/ Measured Depth: 28.82
Inspector: Scott Beasinger

## ☒ ABOVE GROUND

Well Accessible? ☒ Yes ☐ No
Protective casing? ☒ Yes ☐ No
Material: METAL
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Need Paint
Lid Condition: ☒ Good ☐ Broken ☐ Cracked
Hinge Condition: ☒ Good ☐ Less than 50% rusted ☐ More than 50% rusted

## ☐ FLUSH MOUNTED

Well cover present? NA ☐ Yes ☐ No
Condition: ☐ Good ☐ Broken ☐ Cracked
Condition of Sump: ☐ Clean ☐ Dry ☐ Standing Water

## CONCRETE PAD:

Sloped away from casing? ☒ Yes ☐ No
Pad Area Cleared of Vegetation? ☒ Yes ☐ No
Check any of the following features that apply:
☐ Many Cracks ☐ Gap Around Casing ☐ Few Cracks ☐ Ponded Water ☐ No Pad Present

## WELL CONDITION:

Inner Diameter (inches): 4"
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Other (describe)
Cap present? ☒ Yes ☐ No
Well lock present? ☒ Yes ☐ No
Lock functioning properly? ☒ Yes ☐ No
Are bollards present and stable? ☒ Yes ☐ No
Well ID visible? ☒ Yes ☐ No

## WELL INTEGRITY:

Bailer present? ☐ Yes ☒ No
Visual obstruction? ☐ Yes ☒ No
Is well open to completed depth? (complete when gauging) ☒ Yes ☐ No
Is silt present in well? (complete when gauging) ☐ Yes ☒ No
Is silt greater than 10% of well screen length? (complete when gauging) ☐ Yes ☒ No

## COMMENTS:

01254927

# WELL INSPECTION FORM

Job Name: LHAAP
Job No.: 501032
Client: Army
Site Name: 46
Well ID: LHSMW23R
Inspection Date: 2/9/23
Well Completion Depth/ Measured Depth: 43.23
Inspector: Scott Beesinger

## ☒ ABOVE GROUND

Well Accessible? ☒ Yes ☐ No
Protective casing? ☒ Yes ☐ No
Material: METAL
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Need Paint
Lid Condition: ☒ Good ☐ Broken ☒ Cracked
Hinge Condition: ☒ Good ☐ Less than 50% rusted ☐ More than 50% rusted

## ☐ FLUSH MOUNTED

Well cover present? NA ☐ Yes ☐ No
Condition: ☐ Good ☐ Broken ☐ Cracked
Condition of Sump: ☐ Clean ☐ Dry ☐ Standing Water

## CONCRETE PAD:

Sloped away from casing? ☒ Yes ☐ No
Pad Area Cleared of Vegetation? ☒ Yes ☐ No
Check any of the following features that apply:
☐ Many Cracks ☐ Gap Around Casing ☐ Few Cracks ☐ Ponded Water ☐ No Pad Present

## WELL CONDITION:

Inner Diameter (inches): 4"
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Other (describe)
Cap present? ☒ Yes ☐ No
Well lock present? ☒ Yes ☐ No
Lock functioning properly? ☒ Yes ☐ No
Are bollards present and stable? ☒ Yes ☐ No
Well ID visible? ☒ Yes ☐ No

## WELL INTEGRITY:

Bailer present? ☐ Yes ☒ No
Visual obstruction? ☒ Yes ☐ No
Is well open to completed depth? (complete when gauging) ☒ Yes ☐ No
Is silt present in well? (complete when gauging) ☐ Yes ☒ No
Is silt greater than 10% of well screen length? (complete when gauging)

## COMMENTS:

01254928

# WELL INSPECTION FORM

Job Name: LHAAP
Job No.: 50/032
Client: Army
Site Name: 46
Well ID: LHSmw25
Inspection Date: 2/9/23
Well Completion Depth/ Measured Depth: 42.62
Inspector: Scott Bassinger

## ☒ ABOVE GROUND

Well Accessible? ☒ Yes ☐ No
Protective casing? ☒ Yes ☐ No
Material: METAL
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Need Paint
Lid Condition: ☒ Good ☐ Broken ☒ Cracked
Hinge Condition: ☒ Good ☐ Less than 50% rusted ☐ More than 50% rusted

## ☐ FLUSH MOUNTED

NA

Well cover present? ☐ Yes ☐ No
Condition: ☐ Good ☐ Broken ☐ Cracked
Condition of Sump: ☐ Clean ☐ Dry ☐ Standing Water

## CONCRETE PAD:

Sloped away from casing? ☒ Yes ☐ No
Pad Area Cleared of Vegetation? ☒ Yes ☐ No
Check any of the following features that apply:
☐ Many Cracks ☐ Gap Around Casing ☐ Few Cracks ☐ Ponded Water ☐ No Pad Present

## WELL CONDITION:

Inner Diameter (inches): 4"
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Other (describe)
Cap present? ☒ Yes ☐ No
Well lock present? ☒ Yes ☐ No
Lock functioning properly? ☒ Yes ☐ No
Are bollards present and stable? ☒ Yes ☐ No
Well ID visible? ☒ Yes ☐ No

## WELL INTEGRITY:

Bailer present? ☐ Yes ☒ No
Visual obstruction? ☐ Yes ☒ No
Is well open to completed depth? (complete when gauging) ☒ Yes ☐ No
Is silt present in well? (complete when gauging) ☒ Yes ☐ No
Is silt greater than 10% of well screen length? (complete when gauging) ☐ Yes ☒ No

## COMMENTS:

01254929

# EQUIPMENT CALIBRATION DAILY LOG

Date: 2/9/23
Project Number: 501032
Project Name: LHAAP-46
Recorded By: Scott BEESINGER

## PID

Model:
Equipment ID #: Bulb: 10.6 eV

| | Parameter | Standard | Exp. Date | Lot# | Morning Calibration | Evening Check | Additional Calib./Check (if necessary) |
|---|---|---|---|---|---|---|---|
| First Point Calibration | Vapor conc. (ppm) | 0.0 (ambient air) | NA | NA | Time: | Time: | Time: |
| | | | | | Initials: | Initials: | Initials: |
| | | | | | Value: | Value: | Value: |
| Second Point Calibration | Vapor conc. (ppm) | (isobutylene) | | | Value: | Value: | Value: |

## COMB. GAS/O$_2$ METER

Model:
Equipment ID #:

| | Parameter | Standard | Exp. Date | Lot# | Morning Calibration | Evening Check | Additional Calib./Check (if necessary) |
|---|---|---|---|---|---|---|---|
| First Point Calibration | | | | | Time: | Time: | Time: |
| | | | | | Initials: | Initials: | Initials: |
| | O2 (%) | | | | Value: | Value: | Value: |
| | % LEL Pentane | | | | Value: | Value: | Value: |

## WATER QUALITY METER

Model: U-52 HORIBA
Equipment ID #:

| | Parameter | Standard | Exp. Date | Lot# | Morning Calibration/Check | Evening Check (one point only) | Additional Calib./Check (if necessary) |
|---|---|---|---|---|---|---|---|
| | | | | | Time: 0655 | Time: | Time: |
| | | | | | Initials: SB | Initials: | Initials: |
| First Point Calibration (Auto) | pH | 4.00 | AUG/23 | ZGH1438 | Value: 4.00 | Value: | Value: |
| | Conductivity (mS/cm) | 4.49 | | | Value: 4.49 | Value: | Value: |
| | Turbidity (NTU) | 0 | | | Value: 0.0 | Value: | Value: |
| | DO (mg/L) | 8.5-9.1 (ambient air) | NA | NA | Value: 8.99 | Value: | Value: |
| Second Point Calibration | pH | 6.86 | | | Value: | Value: | Value: |
| | Conductivity (mS/cm) | 58.7 | | | Value: | Value: | Value: |
| | Turbidity (NTU) | 100 | | | Value: | Value: | Value: |
| Third Point Calibration | pH | 9.18 | | | Value: | Value: | Value: |
| | Conductivity (mS/cm) | 62.7 | | | Value: | Value: | Value: |
| | Turbidity (NTU) | 100 | | | Value: | Value: | Value: |

Additional Remarks:

# Appendix C

# Groundwater Sampling and Well Development Forms

01254931

APTIM

# Sample Collection Log



Project Name: **Longhorn AAP**

Project No: **501032**

Location ID: **46WW01**

Sampler(s): Scott Beesinger

**FIELD CONDITIONS** CLEAR

**SAMPLING INFORMATION**

**Sample No:** 46WW01-230206 **DATE/TIME:** 2/6/23 1025 **Pump Inlet Depth:** NA

**Sampling Method:** LF **Sample Purpose:** REG **Sample Matrix:** GW

| Appearance of Sample | Assoc. QC Samples | Decontamination Procedures |
|---|---|---|
| | | |

| Chain of Custody | COC Notes | Lab | Analyses | Container | Preserv |
|---|---|---|---|---|---|
| | | ALSHT | VOCs in Water by 8260C | 3 x 40 mL Glass | HCL<pH2 |

**WELL AND PURGING INFORMATION**

Measuring Point : Top of Casing

Purging Method/Equipment: NA

Casing ID (in.): 4

Purge Start Date/Time: 2/6/23 NA

Depth to Water - Initial (DTWi) (ft) DRY

Purge End Date/Time: 2/6/23 NA

Depth to Well Bottom (ft) ~~27~~ 26.92

Discharge Tube Length: NA

PID Reading: NA

Screen Interval (ft): 17.07 - 22.07

Discharge Tube Diameter: 1/4"

Immiscible Layer: Y / (N)

Approximate depth of pump inlet*(ft): ~~40~~

Pump Start Time: NA

Ferrous Iron (Required Y or (N)) _____ mg/L

2ND DTW - DRY

APTIM

# Sample Collection Log



| Location ID: 46WW01 | | | | Sample No: 46WW01-230206 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Date of Reading | Time of Reading | Purge Rate | Total Purge | DTW | Cond. | Temp. | pH | Turbidity | ORP | DO |
| | | (ml/min) | (L) | (ft) | (mS/cm) | (°C) | | (NTU) | (mV) | (mg/L) |
| | Purge Stabilization Criteria | - | - | Drawdown limit 0.3 ft | ±10% | | ±0.1 units | No criteria | | ± 10% or 0.2 mg/L |
| 2/6/23 | | | | | | | | | | |
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DRY WELL

Logged by: _____ Date: _____

QC'd by: _____ Date: _____

APTIM

# Sample Collection Log



Project Name: **Longhorn AAP**

Project No: **501032**

Location ID: **46WW02**

Sampler(s): Scott Beesinger

**FIELD CONDITIONS** Clear

**SAMPLING INFORMATION**

**Sample No:** 46WW02-230206 **DATE/TIME:** 2/6/23 0921 **Pump Inlet Depth:** 43.05

**Sampling Method:** LF **Sample Purpose:** REG **Sample Matrix:** GW

| Appearance of Sample | Assoc. QC Samples | Decontamination Procedures |
|---|---|---|
| | | |

| Chain of Custody | COC Notes | Lab | Analyses | Container | Preserv |
|---|---|---|---|---|---|
| | | ALSHT | Anions (chloride/nitrate/sulfate) in Water by SW9056 | 1 x 125 mL HPDE | Cool 4C |
| | | ALSHT | Carbon Dioxide in Water by RSK175 | 3 x 40 mL Glass | Cool 4C |
| | | ALSHT | Dissolved Gases in Water by RSK175 | 3 x 40 mL Glass | HCL<pH2 |
| | | ALSHT | TOC in Water by SM5310C | 2 x 40 mL Amber | H2SO4 |
| | | ALSHT | VOCs in Water by 8260C | 3 x 40 mL Glass | HCL<pH2 |

**WELL AND PURGING INFORMATION**

Measuring Point : Top of Casing

Casing ID (in.): 4

Depth to Water - Initial (DTWi) (ft) 39.33

Depth to Well Bottom (ft) ~~45~~ 47.65

Screen Interval (ft): 38.05 - 48.05

Approximate depth of pump inlet*(ft): ~~40~~ 43.05

Ferrous Iron (Required Y or N) _____ mg/L

Purging Method/Equipment: Low Flow Bladder Pump

Purge Start Date/Time: 2/6/23 0930

Purge End Date/Time: 2/6/23 1000

Discharge Tube Length: NA PID Reading: NA

Discharge Tube Diameter: 1/4" Immiscible Layer: Y / N

Pump Start Time: 0930

2ND DTW- 39.33

APTIM

# Sample Collection Log



| Location ID: 46WW02 | | | | Sample No: 46WW02-230206 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Date of Reading | Time of Reading | Purge Rate | Total Purge | DTW | Cond. | Temp. | pH | Turbidity | ORP | DO |
| | | (ml/min) | (L) | (ft) | (mS/cm) | (°C) | | (NTU) | (mV) | (mg/L) |
| | Purge Stabilization Criteria | - | - | Drawdown limit 0.3 ft | ±10% | | ±0.1 units | No criteria | | ± 10% or 0.2 mg/L |
| 2/6/23 | 0935 | 100 | .5 | 39.40 | 0.511 | 15.65 | 6.70 | 13.7 | 65 | 0.62 |
| | 0940 | 100 | 1.0 | 39.46 | 0.518 | 15.41 | 5.77 | 9.2 | 116 | 0.17 |
| | 0945 | 100 | 1.5 | 39.50 | 0.516 | 15.53 | 5.31 | 8.1 | 154 | 0.03 |
| | 0950 | 100 | 2.0 | 39.52 | 0.516 | 15.58 | 5.30 | 7.6 | 156 | 0.03 |
| | 0955 | 100 | 2.5 | 39.54 | 0.516 | 15.63 | 5.30 | 7.2 | 157 | 0.02 |
| ↓ | 1000 | 100 | 3.0 | 39.56 | 0.516 | 15.67 | 5.29 | 6.8 | 158 | 0.02 |
| | | | | | | | | | | |
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Logged by: _____ Date: _____

QC'd by: _____ Date: _____

APTIM

# Sample Collection Log



Project Name: **Longhorn AAP**

Project No: **501032**

Location ID: **46WW02**

Sampler(s): Scott Beesinger

**FIELD CONDITIONS** CLEAR

**SAMPLING INFORMATION**

**Sample No:** 46WW02-2302~~06~~-MS **DATE/TIME:** 2/6/23 0921 **Pump Inlet Depth:** 43.05

**Sampling Method:** LF **Sample Purpose:** MS **Sample Matrix:** GW

| Appearance of Sample | Assoc. QC Samples | Decontamination Procedures |
|---|---|---|
| | | |

| Chain of Custody | COC Notes | Lab | Analyses | Container | Preserv |
|---|---|---|---|---|---|
| | | ALSHT | Anions (chloride/nitrate/sulfate) in Water by SW9056 | 1 x 125 mL HPDE | Cool 4C |
| | | ALSHT | Carbon Dioxide in Water by RSK175 | 3 x 40 mL Glass | Cool 4C |
| | | ALSHT | Dissolved Gases in Water by RSK175 | 3 x 40 mL Glass | HCL<pH2 |
| | | ALSHT | TOC in Water by SM5310C | 2 x 40 mL Amber | H2SO4 |
| | | ALSHT | VOCs in Water by 8260C | 3 x 40 mL Glass | HCL<pH2 |

**WELL AND PURGING INFORMATION**

Measuring Point : Top of Casing

Purging Method/Equipment: Low flow/BLADDER Pump

Casing ID (in.): 4

Purge Start Date/Time: 2/6/23 0930

Depth to Water - Initial (DTWi) (ft) 39.33

Purge End Date/Time: 2/6/23 1000

Depth to Well Bottom (ft) ~~45~~ 47.65

Discharge Tube Length: NA PID Reading: NA

Screen Interval (ft): 38.05 - 48.05

Discharge Tube Diameter: 1/4" Immiscible Layer: Y / (N)

Approximate depth of pump inlet*(ft): ~~45~~ 43.05

Pump Start Time: 0930

Ferrous Iron (Required Y or (N)) _____ mg/L

2ND DTW - 39.33

APTIM

# Sample Collection Log



| Location ID: 46WW02 | | | | Sample No: 46WW02-230206-MS | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Date of Reading | Time of Reading | Purge Rate | Total Purge | DTW | Cond. | Temp. | pH | Turbidity | ORP | DO |
| | | (ml/min) | (L) | (ft) | (mS/cm) | (°C) | | (NTU) | (mV) | (mg/L) |
| | Purge Stabilization Criteria | - | - | Drawdown limit 0.3 ft | ±10% | | ±0.1 units | No criteria | | ± 10% or 0.2 mg/L |
| 2/6/23 | 0935 | 100 | .5 | 39.40 | 0.511 | 15.65 | 6.70 | 13.7 | 65 | 0.62 |
| | 0940 | 100 | 1.0 | 39.46 | 0.518 | 15.41 | 5.77 | 9.2 | 116 | 0.17 |
| | 0945 | 100 | 1.5 | 39.50 | 0.516 | 15.53 | 5.31 | 8.1 | 154 | 0.03 |
| | 0950 | 100 | 2.0 | 39.52 | 0.516 | 15.58 | 5.30 | 7.6 | 156 | 0.03 |
| | 0955 | 100 | 2.5 | 39.54 | 0.516 | 15.63 | 5.30 | 7.2 | 157 | 0.02 |
| | 1000 | 100 | 3.0 | 39.56 | 0.516 | 15.67 | 5.29 | 6.8 | 158 | 0.02 |
| | | | | | | | | | | |
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Logged by: _____ Date: _____

QC'd by: _____ Date: _____

APTIM

# Sample Collection Log



Project Name: **Longhorn AAP**

Project No: **501032**

Location ID: **46WW02**

Sampler(s): Scott Beesinger

**FIELD CONDITIONS** CLEAR

**SAMPLING INFORMATION**

**Sample No:** 46WW02-2302 06-MSD **DATE/TIME:** 2/6/23 0921 **Pump Inlet Depth:** 43.05

**Sampling Method:** LF **Sample Purpose:** MSD **Sample Matrix:** GW

**Appearance of Sample** **Assoc. QC Samples** **Decontamination Procedures**

| Chain of Custody | COC Notes | Lab | Analyses | Container | Preserv |
|---|---|---|---|---|---|
| | | ALSHT | Anions (chloride/nitrate/sulfate) in Water by SW9056 | 1 x 125 mL HPDE | Cool 4C |
| | | ALSHT | Carbon Dioxide in Water by RSK175 | 3 x 40 mL Glass | Cool 4C |
| | | ALSHT | Dissolved Gases in Water by RSK175 | 3 x 40 mL Glass | HCL<pH2 |
| | | ALSHT | TOC in Water by SM5310C | 2 x 40 mL Amber | H2SO4 |
| | | ALSHT | VOCs in Water by 8260C | 3 x 40 mL Glass | HCL<pH2 |

**WELL AND PURGING INFORMATION**

Measuring Point : Top of Casing

Purging Method/Equipment: Low Flow/Bladder Pump

Casing ID (in.): 4

Purge Start Date/Time: 2/6/23 0930

Depth to Water - Initial (DTWi) (ft) 39.33

Purge End Date/Time: 2/6/23 1000

Depth to Well Bottom (ft) ~~45~~ 47.65

Discharge Tube Length: NA PID Reading: NA

Screen Interval (ft): 38.05 - 48.05

Discharge Tube Diameter: 1/4" Immiscible Layer: Y / (N)

Approximate depth of pump inlet*(ft): ~~40~~ 43.05

Pump Start Time: 0930

Ferrous Iron (Required Y or (N) _____ mg/L

2ND DTW ~ 39.33

APTIM

# Sample Collection Log



| Location ID: 46WW02 | | Sample No: 46WW02-230206-MSD | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Date of Reading | Time of Reading | Purge Rate | Total Purge | DTW | Cond. | Temp. | pH | Turbidity | ORP | DO |
| | | (ml/min) | (L) | (ft) | (mS/cm) | (°C) | | (NTU) | (mV) | (mg/L) |
| | Purge Stabilization Criteria | - | - | Drawdown limit 0.3 ft | ±10% | | ±0.1 units | No criteria | | ± 10% or 0.2 mg/L |
| 2/6/23 | 0935 | 100 | .5 | 39.40 | 0.511 | 15.65 | 6.70 | 13.7 | 65 | 0.62 |
| | 0940 | 100 | 1.0 | 39.46 | 0.518 | 15.41 | 5.77 | 9.2 | 116 | 0.17 |
| | 0945 | 100 | 1.5 | 39.50 | 0.516 | 15.53 | 5.31 | 8.1 | 154 | 0.03 |
| | 0950 | 100 | 2.0 | 39.52 | 0.516 | 15.58 | 5.30 | 7.6 | 156 | 0.03 |
| | 0955 | 100 | 2.5 | 39.54 | 0.516 | 15.63 | 5.30 | 7.2 | 157 | 0.02 |
| ↓ | 1000 | 100 | 3.0 | 39.56 | 0.516 | 15.67 | 5.29 | 6.8 | 158 | 0.02 |
| | | | | | | | | | | |
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Logged by: _____ Date: _____

QC'd by: _____ Date: _____

APTIM

# Sample Collection Log



Project Name: **Longhorn AAP**

Project No: **501032**

Location ID: **46WW03**

Sampler(s): Scott Bassinger

## FIELD CONDITIONS

CLEAR

## SAMPLING INFORMATION

**Sample No:** 46WW03-230206 **DATE/TIME:** 2/6/23 **Pump Inlet Depth:** 97.67

**Sampling Method:** LF **Sample Purpose:** REG **Sample Matrix:** GW

| Appearance of Sample | Assoc. QC Samples | Decontamination Procedures |
|---|---|---|
| | | |

| Chain of Custody | COC Notes | Lab | Analyses | Container | Preserv |
|---|---|---|---|---|---|
| | | ALSHT | VOCs in Water by 8260C | 3 x 40 mL Glass | HCL<pH2 |

## WELL AND PURGING INFORMATION

Measuring Point : Top of Casing

Purging Method/Equipment: Low flow/Bladder Pump

Casing ID (in.): 4

Purge Start Date/Time: 2/6/23 0845

Depth to Water - Initial (DTWi) (ft) 42.78

Purge End Date/Time: 2/6/23 0915

Depth to Well Bottom (ft) ~~100~~ 103.55

Discharge Tube Length: NA PID Reading: NA

Screen Interval (ft): 92.67 - 102.67

Discharge Tube Diameter: 1/4" Immiscible Layer: Y / (N)

Approximate depth of pump inlet*(ft): ~~95~~ 97.67

Pump Start Time: 0845

Ferrous Iron (Required Y or (N)) _____ mg/L

2ND DTW - 42.78

APTIM

# Sample Collection Log



| Location ID: 46WW03 | | | | Sample No: 46WW03-230206 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Date of Reading | Time of Reading | Purge Rate | Total Purge | DTW | Cond. | Temp. | pH | Turbidity | ORP | DO |
| | | (ml/min) | (L) | (ft) | (mS/cm) | (°C) | | (NTU) | (mV) | (mg/L) |
| | Purge Stabilization Criteria | - | - | Drawdown limit 0.3 ft | ±10% | | ±0.1 units | No criteria | | ± 10% or 0.2 mg/L |
| 2/6/23 | 0850 | 100 | .5 | 42.84 | 0.634 | 15.37 | 8.78 | 66.8 | -61 | 0.66 |
| | 0855 | 100 | 1.0 | 42.88 | 0.581 | 16.21 | 8.39 | 53.2 | -19 | 0.18 |
| | 0900 | 100 | 1.5 | 42.91 | 0.563 | 16.57 | 8.22 | 59.2 | -4 | 0.04 |
| | 0905 | 100 | 2.0 | 42.93 | 0.563 | 16.64 | 8.21 | 58.5 | -3 | 0.04 |
| | 0910 | 100 | 2.5 | 42.95 | 0.562 | 16.68 | 8.20 | 57.8 | -3 | 0.04 |
| ↓ | 0915 | 100 | 3.0 | 42.96 | 0.562 | 16.72 | 8.19 | 57.1 | -3 | 0.03 |
| | | | | | | | | | | |
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| | | | | | | | | | | |

Logged by: _____ Date: _____

QC'd by: _____ Date: _____

APTIM

# Sample Collection Log



Project Name: **Longhorn AAP**

Project No: **501032**

Location ID: **46WW04**

Sampler(s): Scott Beesinger

**FIELD CONDITIONS** CLEAR

**SAMPLING INFORMATION**

**Sample No:** 46WW04-230209 **DATE/TIME:** 2/9/23 **Pump Inlet Depth:** NA

**Sampling Method:** LF **Sample Purpose:** REG **Sample Matrix:** GW

| Appearance of Sample | Assoc. QC Samples | Decontamination Procedures |
|---|---|---|
| | | |

| Chain of Custody | COC Notes | Lab | Analyses | Container | Preserv |
|---|---|---|---|---|---|
| | | ALSHT | VOCs in Water by 8260C | 3 x 40 mL Glass | HCL<pH2 |

**WELL AND PURGING INFORMATION**

Measuring Point : Top of Casing

Purging Method/Equipment: Low flow/Bladder Pump

Casing ID (in.): 4

Purge Start Date/Time: 2/9/23 NA

Depth to Water - Initial (DTWi) (ft) DRY

Purge End Date/Time: 2/9/23 NA

Depth to Well Bottom (ft) 26.92

Discharge Tube Length: NA PID Reading: NA

Screen Interval (ft): 16.92-26.92

Discharge Tube Diameter: 1/4" Immiscible Layer: Y / (N)

Approximate depth of pump inlet*(ft): 19

Pump Start Time: NA

Ferrous Iron (Required Y or (N) _____ mg/L

2ND DTW- DRY

APTIM

# Sample Collection Log



| Location ID: 46WW04 | | | | Sample No: 46WW04-230209 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Date of Reading** | **Time of Reading** | **Purge Rate** | **Total Purge** | **DTW** | **Cond.** | **Temp.** | **pH** | **Turbidity** | **ORP** | **DO** |
| | | **(ml/min)** | **(L)** | **(ft)** | **(mS/cm)** | **(°C)** | | **(NTU)** | **(mV)** | **(mg/L)** |
| | Purge Stabilization Criteria | - | - | Drawdown limit 0.3 ft | ±10% | | ±0.1 units | No criteria | | ± 10% or 0.2 mg/L |
| 2/9/23 | | | | | | | | | | |
| | | | DRY WELL | | | | | | | |
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Logged by: _____ Date: _____

QC'd by: _____ Date: _____

APTIM

# Sample Collection Log



Project Name: **Longhorn AAP**

Project No: **501032**

Location ID: **46WW05**

Sampler(s): Scott Beesinger

**FIELD CONDITIONS** CLEAR

**SAMPLING INFORMATION**

**Sample No:** 46WW05-2302 07 **DATE/TIME:** 2/7/23 0732 **Pump Inlet Depth:** 40.50

**Sampling Method:** LF **Sample Purpose:** REG **Sample Matrix:** GW

**Appearance of Sample** **Assoc. QC Samples** **Decontamination Procedures**

| Chain of Custody | COC Notes | Lab | Analyses | Container | Preserv |
|---|---|---|---|---|---|
| | | ALSHT | Anions (chloride/nitrate/sulfate) in Water by SW9056 | 1 x 125 mL HPDE | Cool 4C |
| | | ALSHT | Carbon Dioxide in Water by RSK175 | 3 x 40 mL Glass | Cool 4C |
| | | ALSHT | Dissolved Gases in Water by RSK175 | 3 x 40 mL Glass | HCL<pH2 |
| | | ALSHT | TOC in Water by SM5310C | 2 x 40 mL Amber | H2SO4 |
| | | ALSHT | VOCs in Water by 8260C | 3 x 40 mL Glass | HCL<pH2 |

**WELL AND PURGING INFORMATION**

Measuring Point : Top of Casing

Purging Method/Equipment: Low Flow/Bladder Pump

Casing ID (in.): 4

Purge Start Date/Time: 2/7/23 0750

Depth to Water - Initial (DTWi) (ft) 40.05

Purge End Date/Time: 2/7/23 0820

Depth to Well Bottom (ft) ~~46.65~~ 46.45

Discharge Tube Length: NA

PID Reading: NA

Screen Interval (ft): 36.65 - 46.65

Discharge Tube Diameter: 1/4"

Immiscible Layer: Y / (N)

Approximate depth of pump inlet*(ft): ~~40~~ 40.50

Pump Start Time: 0750

Ferrous Iron (Required Y or (N)) _____ mg/L

2WD DTW - 40.05

APTIM

# Sample Collection Log



Location ID: 46WW05 Sample No: 46WW05-2302 07

| Date of Reading | Time of Reading | Purge Rate | Total Purge | DTW | Cond. | Temp. | pH | Turbidity | ORP | DO |
|---|---|---|---|---|---|---|---|---|---|---|
| | | (ml/min) | (L) | (ft) | (mS/cm) | (°C) | | (NTU) | (mV) | (mg/L) |
| | Purge Stabilization Criteria | - | - | Drawdown limit 0.3 ft | ±10% | | ±0.1 units | No criteria | | ± 10% or 0.2 mg/L |
| 2/7/23 | 0755 | 100 | .5 | 40.12 | 6.10 | 17.01 | 5.40 | 60.5 | 190 | 0.73 |
| | 0800 | 100 | 1.0 | 40.18 | 6.24 | 18.09 | 4.62 | 48.7 | 239 | 0.25 |
| | 0805 | 100 | 1.5 | 40.22 | 6.33 | 18.31 | 4.39 | 42.5 | 269 | 0.10 |
| | 0810 | 100 | 2.0 | 40.25 | 6.34 | 18.35 | 4.38 | 41.6 | 271 | 0.10 |
| | 0815 | 100 | 2.5 | 40.28 | 6.35 | 18.39 | 4.37 | 40.8 | 273 | 0.09 |
| ↓ | 0820 | 100 | 3.0 | 40.30 | 6.35 | 18.43 | 4.36 | 40.2 | 275 | 0.09 |
| | | | | | | | | | | |
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Logged by: _____ Date: _____

QC'd by: _____ Date: _____

APTIM

# Sample Collection Log



Project Name: **Longhorn AAP**

Project No: **501032**

Location ID: **46WW05**

Sampler(s): Scott Beasinger

## FIELD CONDITIONS

CLEAR

## SAMPLING INFORMATION

**Sample No:** 46WW05R-230228 **DATE/TIME:** 2/28/23 0733 **Pump Inlet Depth:** 40.50

**Sampling Method:** LF **Sample Purpose:** REG **Sample Matrix:** GW

| Appearance of Sample | Assoc. QC Samples | Decontamination Procedures |
|---|---|---|
| | | |

| Chain of Custody | COC Notes | Lab | Analyses | Container | Preserv |
|---|---|---|---|---|---|
| | | ALSHT | Nitrate by SW9056 | 1 x 125 mL HPDE | Cool 4C |

## WELL AND PURGING INFORMATION

Measuring Point : Top of Casing

Purging Method/Equipment: Low Flow/Bladder Pump

Casing ID (in.): 4

Purge Start Date/Time: 2/28/23 0755

Depth to Water - Initial (DTWi) (ft) 40.03

Purge End Date/Time: 2/28/23 0825

Depth to Well Bottom (ft) ~~44.25~~ 45.45

Discharge Tube Length: NA PID Reading: NA

Screen Interval (ft): 36.65-46.65

Discharge Tube Diameter: 1/4" Immiscible Layer: Y / (N)

Approximate depth of pump inlet*(ft): ~~39~~ 40.50

Pump Start Time: 0755

Ferrous Iron (Required Y or (N)) _____ mg/L

2ND DTW- 40.03

APTIM

# Sample Collection Log



| Location ID: 46WW05 | | | | Sample No: 46WW05R-230228 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Date of Reading | Time of Reading | Purge Rate | Total Purge | DTW | Cond. | Temp. | pH | Turbidity | ORP | DO |
| | | (ml/min) | (L) | (ft) | (mS/cm) | (°C) | | (NTU) | (mV) | (mg/L) |
| | Purge Stabilization Criteria | - | - | Drawdown limit 0.3 ft | ±10% | | ±0.1 units | No criteria | | ± 10% or 0.2 mg/L |
| 2/28/23 | 0800 | 100 | .5 | 40.10 | 6.33 | 15.63 | 5.80 | 43.7 | 185 | 2.17 |
| | 0805 | 100 | 1.0 | 40.16 | 6.33 | 16.74 | 5.08 | 36.2 | 290 | 1.90 |
| | 0810 | 100 | 1.5 | 40.20 | 6.32 | 16.93 | 4.88 | 31.7 | 320 | 1.69 |
| | 0815 | 100 | 2.0 | 40.23 | 6.32 | 16.98 | 4.87 | 31.3 | 321 | 1.67 |
| | 0820 | 100 | 2.5 | 40.25 | 6.33 | 17.02 | 4.87 | 30.6 | 322 | 1.65 |
| | 0825 | 100 | 3.0 | 40.27 | 6.33 | 17.05 | 4.86 | 30.1 | 322 | 1.64 |
| | | | | | | | | | | |
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Logged by: _____ Date: _____

QC'd by: _____ Date: _____

APTIM

# Sample Collection Log



Project Name: **Longhorn AAP**

Project No: **501032**

Location ID: **46WW06**

Sampler(s): Scott Beesinger

**FIELD CONDITIONS** Clear

**SAMPLING INFORMATION**

**Sample No:** 46WW06-230209 **DATE/TIME:** 2/9/23 1140 **Pump Inlet Depth:** 45.60

**Sampling Method:** LF **Sample Purpose:** REG **Sample Matrix:** GW

| Appearance of Sample | Assoc. QC Samples | Decontamination Procedures |
|---|---|---|
| | | |

| Chain of Custody | COC Notes | Lab | Analyses | Container | Preserv |
|---|---|---|---|---|---|
| | | ALSHT | VOCs in Water by 8260C | 3 x 40 mL Glass | HCL<pH2 |

**WELL AND PURGING INFORMATION**

Measuring Point : Top of Casing

Purging Method/Equipment: Low Flow/Bladder Pump

Casing ID (in.): 4

Purge Start Date/Time: 2/9/23 1150

Depth to Water - Initial (DTWi) (ft) 42.30

Purge End Date/Time: 2/9/23 1220

Depth to Well Bottom (ft) ~~40~~ 52.33

Discharge Tube Length: NA

PID Reading: NA

Screen Interval (ft): 40.60 - 50.60

Discharge Tube Diameter: 1/4"

Immiscible Layer: Y / (N)

Approximate depth of pump inlet*(ft): ~~43~~ 45.60

Pump Start Time: 1150

Ferrous Iron (Required Y or (N)) _____ mg/L

2ND DTW - 42.30

APTIM

# Sample Collection Log



Location ID: 46WW06 Sample No: 46WW06-230209

| Date of Reading | Time of Reading | Purge Rate | Total Purge | DTW | Cond. | Temp. | pH | Turbidity | ORP | DO |
|---|---|---|---|---|---|---|---|---|---|---|
| | | (ml/min) | (L) | (ft) | (mS/cm) | (°C) | | (NTU) | (mV) | (mg/L) |
| | Purge Stabilization Criteria | - | - | Drawdown limit 0.3 ft | ±10% | | ±0.1 units | No criteria | | ± 10% or 0.2 mg/L |
| 2/9/23 | 1155 | 100 | .5 | 42.37 | 1.90 | 19.38 | 7.23 | 79.7 | 21 | 0.77 |
| | 1200 | 100 | 1.0 | 42.43 | 1.82 | 17.45 | 6.39 | 74.6 | 8 | 0.26 |
| | 1205 | 100 | 1.5 | 42.47 | 1.74 | 17.08 | 6.30 | 70.1 | 6 | 0.13 |
| | 1210 | 100 | 2.0 | 42.49 | 1.73 | 17.02 | 6.29 | 69.5 | 5 | 0.13 |
| | 1215 | 100 | 2.5 | 42.51 | 1.72 | 16.96 | 6.28 | 68.8 | 5 | 0.13 |
| ↓ | 1220 | 100 | 3.0 | 42.53 | 1.71 | 16.90 | 6.28 | 68.2 | 5 | 0.12 |
| | | | | | | | | | | |
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Logged by: _____ Date: _____

QC'd by: _____ Date: _____

APTIM

# Sample Collection Log



Project Name: **Longhorn AAP**

Project No: **501032**

Location ID: **46WW07**

Sampler(s): Scott Beesinger

**FIELD CONDITIONS** CLEAR

**SAMPLING INFORMATION**

**Sample No:** 46WW07-230206 **DATE/TIME:** 2/6/23 1031 **Pump Inlet Depth:** 46.25

**Sampling Method:** LF **Sample Purpose:** REG **Sample Matrix:** GW

| Appearance of Sample | Assoc. QC Samples | Decontamination Procedures |
|---|---|---|
| | | |

| Chain of Custody | COC Notes | Lab | Analyses | Container | Preserv |
|---|---|---|---|---|---|
| | | ALSHT | VOCs in Water by 8260C | 3 x 40 mL Glass | HCL<pH2 |

**WELL AND PURGING INFORMATION**

Measuring Point : Top of Casing

Purging Method/Equipment: Low Flow/Bladder Pump

Casing ID (in.): 4

Purge Start Date/Time: 2/6/23 1040

Depth to Water - Initial (DTWi) (ft) 37.90

Purge End Date/Time: 2/6/23 1110

Depth to Well Bottom (ft) ~~40~~ 51.67

Discharge Tube Length: NA

PID Reading: NA

Screen Interval (ft): 41.50 - 51.00

Discharge Tube Diameter: 1/4"

Immiscible Layer: Y / (N)

Approximate depth of pump inlet*(ft): ~~43.75~~ 46.25

Pump Start Time: 1040

Ferrous Iron (Required Y or (N) _____ mg/L

2ND DTW - 37.90

APTIM

# Sample Collection Log



Location ID: 46WW07 Sample No: 46WW07-230206

| Date of Reading | Time of Reading | Purge Rate | Total Purge | DTW | Cond. | Temp. | pH | Turbidity | ORP | DO |
|---|---|---|---|---|---|---|---|---|---|---|
| | | (ml/min) | (L) | (ft) | (mS/cm) | (°C) | | (NTU) | (mV) | (mg/L) |
| | Purge Stabilization Criteria | - | - | Drawdown limit 0.3 ft | ±10% | | ±0.1 units | No criteria | | ± 10% or 0.2 mg/L |
| 2/6/23 | 1045 | 100 | .5 | 37.97 | 0.824 | 16.45 | 6.37 | 6.1 | 144 | 0.71 |
| | 1050 | 100 | 1.0 | 38.03 | 0.823 | 17.55 | 6.50 | 2.6 | 120 | 0.25 |
| | 1055 | 100 | 1.5 | 38.07 | 0.823 | 17.60 | 6.56 | 2.2 | 114 | 0.09 |
| | 1100 | 100 | 2.0 | 38.10 | 0.823 | 17.65 | 6.57 | 2.5 | 113 | 0.09 |
| | 1105 | 100 | 2.5 | 30.12 | 0.824 | 17.69 | 6.57 | 2.9 | 112 | 0.08 |
| | 1110 | 100 | 3.0 | 30.14 | 0.824 | 17.74 | 6.57 | 3.2 | 112 | 0.08 |
| | | | | | | | | | | |
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Logged by: _____ Date: _____

QC'd by: _____ Date: _____

APTIM

# Sample Collection Log



Project Name: **Longhorn AAP**

Project No: **501032**

Location ID: **46WW08**

Sampler(s): Scott Beasinger

**FIELD CONDITIONS** CLEAR

**SAMPLING INFORMATION**

**Sample No:** 46WW08-230209 **DATE/TIME:** 2/9/23 0933 **Pump Inlet Depth:** 40.47

**Sampling Method:** LF **Sample Purpose:** REG **Sample Matrix:** GW

**Appearance of Sample** **Assoc. QC Samples** **Decontamination Procedures**

| Chain of Custody | COC Notes | Lab | Analyses | Container | Preserv |
|---|---|---|---|---|---|
| | | ALSHT | VOCs in Water by 8260C | 3 x 40 mL Glass | HCL<pH2 |

**WELL AND PURGING INFORMATION**

Measuring Point : Top of Casing

Purging Method/Equipment: Low flow/Bladder Pump

Casing ID (in.): 4

Purge Start Date/Time: 2/9/23 0940

Depth to Water - Initial (DTWi) (ft) 22.92

Purge End Date/Time: 2/9/23 1010

Depth to Well Bottom (ft) ~~43.5~~ 45.33

Discharge Tube Length: NA PID Reading: NA

Screen Interval (ft): 35.72 - 45.22

Discharge Tube Diameter: 1/4" Immiscible Layer: Y / N

Approximate depth of pump inlet*(ft): ~~38.35~~ 40.47 Pump Start Time: 0940

Ferrous Iron (Required Y or N) _____ mg/L

2ND DTW - 22.92

APTIM

# Sample Collection Log



| Location ID: 46WW08 | | | | Sample No: 46WW08-230209 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Date of Reading** | **Time of Reading** | **Purge Rate** | **Total Purge** | **DTW** | **Cond.** | **Temp.** | **pH** | **Turbidity** | **ORP** | **DO** |
| | | **(ml/min)** | **(L)** | **(ft)** | **(mS/cm)** | **(°C)** | | **(NTU)** | **(mV)** | **(mg/L)** |
| | Purge Stabilization Criteria | - | - | Drawdown limit 0.3 ft | ±10% | | ±0.1 units | No criteria | 5 | ± 10% or 0.2 mg/L |
| 2/9/23 | 0945 | 100 | .5 | [illegible] | 4.47 | 14.70 | 6.36 | 15.4 | [illegible] | 0.75 |
| | 0950 | 100 | 1.0 | 23.06 | 5.89 | 16.64 | 6.31 | 9.9 | -15 | 0.26 |
| | 0955 | 100 | 1.5 | 23.10 | 6.00 | 17.08 | 6.29 | 8.8 | -29 | 0.11 |
| | 1000 | 100 | 2.0 | 23.12 | 6.01 | 17.14 | 6.29 | 7.5 | -30 | 0.11 |
| | 1005 | 100 | 2.5 | 23.14 | 6.02 | 17.18 | 6.29 | 6.7 | -30 | 0.10 |
| | 1010 | 100 | 3.0 | 23.15 | 6.02 | 17.22 | 6.29 | 6.2 | -31 | 0.10 |
| | | | | | | | | | | |
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Logged by: _____ Date: _____

QC'd by: _____ Date: _____

APTIM

# Sample Collection Log



Project Name: **Longhorn AAP**

Project No: **501032**

Location ID: **46WW09**

Sampler(s): Scott Beesinger

## FIELD CONDITIONS

Clear

## SAMPLING INFORMATION

**Sample No:** 46WW09-2302 07 **DATE/TIME:** 2/7/23 0829 **Pump Inlet Depth:** 40.50

**Sampling Method:** LF **Sample Purpose:** REG **Sample Matrix:** GW

**Appearance of Sample** | **Assoc. QC Samples** | **Decontamination Procedures**

| Chain of Custody | COC Notes | Lab | Analyses | Container | Preserv |
|---|---|---|---|---|---|
| | | ALSHT | Anions (chloride/nitrate/sulfate) in Water by SW9056 | 1 x 125 mL HPDE | Cool 4C |
| | | ALSHT | Carbon Dioxide in Water by RSK175 | 3 x 40 mL Glass | Cool 4C |
| | | ALSHT | Dissolved Gases in Water by RSK175 | 3 x 40 mL Glass | HCL<pH2 |
| | | ALSHT | TOC in Water by SM5310C | 2 x 40 mL Amber | H2SO4 |
| | | ALSHT | VOCs in Water by 8260C | 3 x 40 mL Glass | HCL<pH2 |

## WELL AND PURGING INFORMATION

Measuring Point : Top of Casing

Purging Method/Equipment: Low flow/Bladder Pump

Casing ID (in.): 4

Purge Start Date/Time: 2/7/23 0840

Depth to Water - Initial (DTWi) (ft) 39.92

Purge End Date/Time: 2/7/23 0910

Depth to Well Bottom (ft) 42.25

Discharge Tube Length: NA PID Reading: NA

Screen Interval (ft): 31.48-40.98

Discharge Tube Diameter: 1/4" Immiscible Layer: Y (N)

Approximate depth of pump inlet*(ft): 40.50

Pump Start Time: 0840

Ferrous Iron (Required Y or N) _____ mg/L

2ND DTW- 39.92

APTIM

# Sample Collection Log



| Location ID: 46WW09 | | | | Sample No: 46WW09-230207 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Date of Reading | Time of Reading | Purge Rate | Total Purge | DTW | Cond. | Temp. | pH | Turbidity | ORP | DO |
| | | (ml/min) | (L) | (ft) | (mS/cm) | (°C) | | (NTU) | (mV) | (mg/L) |
| | Purge Stabilization Criteria | - | - | Drawdown limit 0.3 ft | ±10% | | ±0.1 units | No criteria | | ± 10% or 0.2 mg/L |
| 2/7/23 | 0845 | 100 | .5 | 39.99 | 4.45 | 16.50 | 5.37 | 144 | 225 | 0.61 |
| | 0850 | 100 | 1.0 | 40.05 | 4.54 | 16.42 | 6.11 | 131 | 215 | 0.17 |
| | 0855 | 100 | 1.5 | 40.09 | 4.61 | 16.39 | 6.27 | 125 | 206 | 0.02 |
| | 0900 | 100 | 2.0 | 40.12 | 4.61 | 16.36 | 6.28 | 124 | 205 | 0.02 |
| | 0905 | 100 | 2.5 | 40.14 | 4.62 | 16.33 | 6.29 | 123 | 205 | 0.02 |
| ↓ | 0910 | 100 | 3.0 | 40.16 | 4.63 | 16.31 | 6.29 | 122 | 204 | 0.01 |
| | | | | | | | | | | |
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Logged by: _____ Date: _____

QC'd by: _____ Date: _____

APTIM

# Sample Collection Log



Project Name: **Longhorn AAP**

Project No: **501032**

Location ID: **46WW09**

Sampler(s): Scott Beesinger

## FIELD CONDITIONS

CLEAR

## SAMPLING INFORMATION

**Sample No:** 46WW09-230207-FD **DATE/TIME:** 2/7/23 0829 **Pump Inlet Depth:** _____

**Sampling Method:** LF **Sample Purpose:** FD **Sample Matrix:** GW

| Appearance of Sample | Assoc. QC Samples | Decontamination Procedures |
|---|---|---|
| | | |

| Chain of Custody | COC Notes | Lab | Analyses | Container | Preserv |
|---|---|---|---|---|---|
| | | ALSHT | Anions (chloride/nitrate/sulfate) in Water by SW9056 | 1 x 125 mL HPDE | Cool 4C |
| | | ALSHT | Carbon Dioxide in Water by RSK175 | 3 x 40 mL Glass | Cool 4C |
| | | ALSHT | Dissolved Gases in Water by RSK175 | 3 x 40 mL Glass | HCL<pH2 |
| | | ALSHT | TOC in Water by SM5310C | 2 x 40 mL Amber | H2SO4 |
| | | ALSHT | VOCs in Water by 8260C | 3 x 40 mL Glass | HCL<pH2 |

## WELL AND PURGING INFORMATION

Measuring Point : Top of Casing

Casing ID (in.): 4

Depth to Water - Initial (DTWi) (ft) 39.92

Depth to Well Bottom (ft) 42.25

Screen Interval (ft): 31.48 - 40.98

Approximate depth of pump inlet*(ft): [redacted]

Ferrous Iron (Required Y or N) _____ mg/L

Purging Method/Equipment: Low flow/Bladder Pump

Purge Start Date/Time: 2/7/23 0840

Purge End Date/Time: 2/7/23 0910

Discharge Tube Length: NA PID Reading: NA

Discharge Tube Diameter: 1/4" Immiscible Layer: Y / N

Pump Start Time: 0840

2ND DTW - 39.92

APTIM

# Sample Collection Log



| Location ID: 46WW09 | | | | Sample No: 46WW09-230207-FD | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Date of Reading | Time of Reading | Purge Rate | Total Purge | DTW | Cond. | Temp. | pH | Turbidity | ORP | DO |
| | | (ml/min) | (L) | (ft) | (mS/cm) | (°C) | | (NTU) | (mV) | (mg/L) |
| | Purge Stabilization Criteria | - | - | Drawdown limit 0.3 ft | ±10% | | ±0.1 units | No criteria | | ± 10% or 0.2 mg/L |
| 2/7/23 | 0845 | 100 | .5 | 34.49 | 4.45 | 16.50 | 5.37 | 144 | 225 | 0.61 |
| | 0850 | 100 | 1.0 | 40.05 | 4.54 | 16.42 | 6.11 | 131 | 215 | 0.17 |
| | 0855 | 100 | 1.5 | 40.09 | 4.61 | 16.34 | 6.27 | 125 | 206 | 0.02 |
| | 0900 | 100 | 2.0 | 40.12 | 4.61 | 16.36 | 6.28 | 124 | 205 | 0.02 |
| | 0905 | 100 | 2.5 | 40.14 | 4.62 | 16.33 | 6.29 | 123 | 205 | 0.02 |
| ↓ | 0910 | 100 | 3.0 | 40.16 | 4.63 | 16.31 | 6.29 | 122 | 204 | 0.01 |
| | | | | | | | | | | |
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Logged by: _____ Date: _____

QC'd by: _____ Date: _____

APTIM

# Sample Collection Log



Project Name: **Longhorn AAP**

Project No: **501032**

Location ID: **46WW09**

Sampler(s): Scott Bassinger

**FIELD CONDITIONS** CLEAR

**SAMPLING INFORMATION**

**Sample No:** 46WW09R-230228 **DATE/TIME:** 2/28/23 0833 **Pump Inlet Depth:** 40.25

**Sampling Method:** LF **Sample Purpose:** REG **Sample Matrix:** GW

| Appearance of Sample | Assoc. QC Samples | Decontamination Procedures |
|---|---|---|
| | | |

| Chain of Custody | COC Notes | Lab | Analyses | Container | Preserv |
|---|---|---|---|---|---|
| | | ALSHT | Nitrate by SW9056 | 1 x 125 mL HPDE | Cool 4C |

**WELL AND PURGING INFORMATION**

Measuring Point : Top of Casing

Purging Method/Equipment: Low flow BLADDER Pump

Casing ID (in.): 4

Purge Start Date/Time: 2/28/23 0845

Depth to Water - Initial (DTWi) (ft) 39.60

Purge End Date/Time: 2/28/23 0915

Depth to Well Bottom (ft) ~~39~~ 42.25

Discharge Tube Length: NA PID Reading: NA

Screen Interval (ft): 31.48 - 40.98

Discharge Tube Diameter: 1/4" Immiscible Layer: Y / (N)

Approximate depth of pump inlet*(ft): ~~39.75~~ 40.25

Pump Start Time: 0845

Ferrous Iron (Required Y or (N)) _____ mg/L

2ND DTW - 39.60

APTIM

# Sample Collection Log



| Location ID: 46WW09 | | Sample No: 46WW09R-230228 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Date of Reading** | **Time of Reading** | **Purge Rate** | **Total Purge** | **DTW** | **Cond.** | **Temp.** | **pH** | **Turbidity** | **ORP** | **DO** |
| | | **(ml/min)** | **(L)** | **(ft)** | **(mS/cm)** | **(°C)** | | **(NTU)** | **(mV)** | **(mg/L)** |
| | Purge Stabilization Criteria | - | - | Drawdown limit 0.3 ft | ±10% | | ±0.1 units | No criteria | | ± 10% or 0.2 mg/L |
| 2/28/23 | 0850 | 100 | .5 | 39.68 | 4.80 | 15.77 | 6.60 | 108 | 215 | 1.77 |
| | 0855 | 100 | 1.0 | 39.74 | 4.67 | 16.51 | 6.63 | 96.7 | 180 | 1.34 |
| | 0900 | 100 | 1.5 | 39.78 | 4.63 | 17.14 | 6.72 | 92.6 | 154 | 1.16 |
| | 0905 | 100 | 2.0 | 39.81 | 4.62 | 17.20 | 6.72 | 92.1 | 153 | 1.14 |
| | 0910 | 100 | 2.5 | 39.84 | 4.61 | 17.26 | 6.73 | 91.5 | 152 | 1.13 |
| | 0915 | 100 | 3.0 | 39.86 | 4.61 | 17.32 | 6.73 | 91.0 | 151 | 1.12 |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

Logged by: _____ Date: _____

QC'd by: _____ Date: _____

APTIM

# Sample Collection Log



Project Name: **Longhorn AAP**

Project No: **501032**

Location ID: **46WW09**

Sampler(s): Scott Baysinger

**FIELD CONDITIONS** CLEAR

**SAMPLING INFORMATION**

**Sample No:** 46WW09R-230228-FD **DATE/TIME:** 2/28/23 0833 **Pump Inlet Depth:** 40.25

**Sampling Method:** LF **Sample Purpose:** FD **Sample Matrix:** GW

| Appearance of Sample | Assoc. QC Samples | Decontamination Procedures |
|---|---|---|
| | | |

| Chain of Custody | COC Notes | Lab | Analyses | Container | Preserv |
|---|---|---|---|---|---|
| | | ALSHT | Nitrate by SW9056 | 1 x 125 mL HPDE | Cool 4C |

**WELL AND PURGING INFORMATION**

Measuring Point : Top of Casing

Purging Method/Equipment: Low flow/Bladder Pump

Casing ID (in.): 4

Purge Start Date/Time: 2/28/23 0845

Depth to Water - Initial (DTWi) (ft) 39.60

Purge End Date/Time: 2/28/23 0915

Depth to Well Bottom (ft) ~~39~~ 42.25

Discharge Tube Length: NA PID Reading: NA

Screen Interval (ft): 31.48 - 40.98

Discharge Tube Diameter: 1/4" Immiscible Layer: Y /(N)

Approximate depth of pump inlet*(ft): ~~33.75~~ 40.25 Pump Start Time: 0845

Ferrous Iron (Required Y or (N) _____ mg/L

2ND DTW - 39.60

APTIM

# Sample Collection Log



| Location ID: 46WW09 | | | | Sample No: 46WW09R-230228-FD | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Date of Reading** | **Time of Reading** | **Purge Rate** | **Total Purge** | **DTW** | **Cond.** | **Temp.** | **pH** | **Turbidity** | **ORP** | **DO** |
| | | **(ml/min)** | **(L)** | **(ft)** | **(mS/cm)** | **(°C)** | | **(NTU)** | **(mV)** | **(mg/L)** |
| | Purge Stabilization Criteria | - | - | Drawdown limit 0.3 ft | ±10% | | ±0.1 units | No criteria | | ± 10% or 0.2 mg/L |
| 2/28/23 | 0850 | 100 | .5 | 39.68 | 4.80 | 15.77 | 6.60 | 108 | 215 | 1.77 |
| | 0855 | 100 | 1.0 | 39.74 | 4.67 | 16.51 | 6.63 | 96.7 | 180 | 1.34 |
| | 0900 | 100 | 1.5 | 39.78 | 4.63 | 17.14 | 6.72 | 92.6 | 154 | 1.16 |
| | 0905 | 100 | 2.0 | 39.81 | 4.62 | 17.20 | 6.72 | 92.1 | 153 | 1.14 |
| | 0910 | 100 | 2.5 | 39.84 | 4.61 | 17.26 | 6.73 | 91.5 | 152 | 1.13 |
| | 0915 | 100 | 3.0 | 39.86 | 4.61 | 17.32 | 6.73 | 91.0 | 151 | 1.12 |
| | | | | | | | | | | |
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| | | | | | | | | | | |

Logged by: _____ Date: _____

QC'd by: _____ Date: _____

APTIM

# Sample Collection Log



Project Name: **Longhorn AAP**

Project No: **501032**

Location ID: **46WW10**

Sampler(s): Scott Beesinger

**FIELD CONDITIONS** CLEAR

**SAMPLING INFORMATION**

**Sample No:** 46WW10-230209 **DATE/TIME:** 2/9/23 1229 **Pump Inlet Depth:** NA

**Sampling Method:** LF **Sample Purpose:** REG **Sample Matrix:** GW

**Appearance of Sample** | **Assoc. QC Samples** | **Decontamination Procedures**

| Chain of Custody | COC Notes | Lab | Analyses | Container | Preserv |
|---|---|---|---|---|---|
| | | ALSHT | VOCs in Water by 8260C | 3 x 40 mL Glass | HCL<pH2 |

**WELL AND PURGING INFORMATION**

Measuring Point : Top of Casing

Casing ID (in.): 4

Depth to Water - Initial (DTWi) (ft) DRY

Depth to Well Bottom (ft) ~~27.0~~ 25.33

Screen Interval (ft): 14.19 - 23.69

Approximate depth of pump inlet*(ft): ~~16.69~~

Ferrous Iron (Required Y or (N) _____ mg/L

Purging Method/Equipment: Low flow/BLADDER PUMP

Purge Start Date/Time: 2/9/23 NA

Purge End Date/Time: 2/9/23 NA

Discharge Tube Length: NA PID Reading: NA

Discharge Tube Diameter: 1/4" Immiscible Layer: Y / (N)

Pump Start Time: NA

2ND DTW - DRY

APTIM

# Sample Collection Log



| Location ID: 46WW10 | | | | Sample No: 46WW10-230209 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Date of Reading** | **Time of Reading** | **Purge Rate** | **Total Purge** | **DTW** | **Cond.** | **Temp.** | **pH** | **Turbidity** | **ORP** | **DO** |
| | | **(ml/min)** | **(L)** | **(ft)** | **(mS/cm)** | **(°C)** | | **(NTU)** | **(mV)** | **(mg/L)** |
| | Purge Stabilization Criteria | - | - | Drawdown limit 0.3 ft | ±10% | | ±0.1 units | No criteria | | ± 10% or 0.2 mg/L |
| 2/9/23 | | | | | | | | | | |
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| | | | | DRY WELL | | | | | | |
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Logged by: _____ Date: _____

QC'd by: _____ Date: _____

APTIM

# Sample Collection Log



Project Name: **Longhorn AAP**

Project No: **501032**

Location ID: **46WW11**

Sampler(s): Scott Beasinger

**FIELD CONDITIONS** Clear

**SAMPLING INFORMATION**

**Sample No:** 46WW11-230209 **DATE/TIME:** 2/9/23 0725 **Pump Inlet Depth:** 28.00

**Sampling Method:** LF **Sample Purpose:** REG **Sample Matrix:** GW

| Appearance of Sample | Assoc. QC Samples | Decontamination Procedures |
|---|---|---|
| | | |

| Chain of Custody | COC Notes | Lab | Analyses | Container | Preserv |
|---|---|---|---|---|---|
| | | ALSHT | Anions (chloride/nitrate/sulfate) in Water by SW9056 | 1 x 125 mL HPDE | Cool 4C |
| | | ALSHT | Carbon Dioxide in Water by RSK175 | 3 x 40 mL Glass | Cool 4C |
| | | ALSHT | Dissolved Gases in Water by RSK175 | 3 x 40 mL Glass | HCL<pH2 |
| | | ALSHT | TOC in Water by SM5310C | 2 x 40 mL Amber | H2SO4 |
| | | ALSHT | VOCs in Water by 8260C | 3 x 40 mL Glass | HCL<pH2 |

**WELL AND PURGING INFORMATION**

Measuring Point : Top of Casing

Purging Method/Equipment: Low Flow/Bladder Pump

Casing ID (in.): 2

Purge Start Date/Time: 2/9/23 0725

Depth to Water - Initial (DTWi) (ft) 27.00

Purge End Date/Time: 2/9/23 0755

Depth to Well Bottom (ft) ~~32~~ 32.75

Discharge Tube Length: NA

PID Reading: NA

Screen Interval (ft): 22.25 - 32.25

Discharge Tube Diameter: 1/4"

Immiscible Layer: Y / (N)

Approximate depth of pump inlet*(ft): ~~28~~ 28.00

Pump Start Time: 0725

Ferrous Iron (Required Y or (N)) _____ mg/L

2nd DTW - 27.00

APTIM

# Sample Collection Log



Location ID: 46WW11 Sample No: 46WW11-230209

| Date of Reading | Time of Reading | Purge Rate | Total Purge | DTW | Cond. | Temp. | pH | Turbidity | ORP | DO |
|---|---|---|---|---|---|---|---|---|---|---|
| | | (ml/min) | (L) | (ft) | (mS/cm) | (°C) | | (NTU) | (mV) | (mg/L) |
| | Purge Stabilization Criteria | - | - | Drawdown limit 0.3 ft | ±10% | | ±0.1 units | No criteria | | ± 10% or 0.2 mg/L |
| 2/9/23 | 0730 | 100 | .5 | 27.07 | 0.851 | 14.20 | 6.08 | 29.7 | 30 | 0.66 |
| | 0735 | 100 | 1.0 | 27.13 | 0.781 | 15.56 | 5.88 | 25.0 | 60 | 0.21 |
| | 0740 | 100 | 1.5 | 27.17 | 0.754 | 15.84 | 5.61 | 22.6 | 88 | 0.05 |
| | 0745 | 100 | 2.0 | 27.20 | 0.754 | 15.95 | 5.60 | 22.1 | 89 | 0.05 |
| | 0750 | 100 | 2.5 | 27.23 | 0.754 | 16.01 | 5.60 | 21.5 | 90 | 0.04 |
| ↓ | 0755 | 100 | 3.0 | 27.25 | 0.753 | 16.05 | 5.59 | 21.2 | 91 | 0.04 |
| | | | | | | | | | | |
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Logged by: _____ Date: _____

QC'd by: _____ Date: _____

APTIM

# Sample Collection Log



Project Name: **Longhorn AAP**

Project No: **501032**

Location ID: **46WW11**

Sampler(s): Scott Beegle, NEAR

**FIELD CONDITIONS** Clear

**SAMPLING INFORMATION**

**Sample No:** 46WW11R-230228 **DATE/TIME:** 2/28/23 0923 **Pump Inlet Depth:** 27.25

**Sampling Method:** LF **Sample Purpose:** REG **Sample Matrix:** GW

| Appearance of Sample | Assoc. QC Samples | Decontamination Procedures |
|---|---|---|
| | | |

| Chain of Custody | COC Notes | Lab | Analyses | Container | Preserv |
|---|---|---|---|---|---|
| | | ALSHT | Nitrate by SW9056 | 1 x 125 mL HPDE | Cool 4C |

**WELL AND PURGING INFORMATION**

Measuring Point : Top of Casing

Purging Method/Equipment: Low Flow/Bladder Pump

Casing ID (in.): 2

Purge Start Date/Time: 2/28/23 0935

Depth to Water - Initial (DTWi) (ft) 26.69

Purge End Date/Time: 2/28/23 1005

Depth to Well Bottom (ft) ~~30~~ 32.90

Discharge Tube Length: NA PID Reading: NA

Screen Interval (ft): 22.25-32.25

Discharge Tube Diameter: 1/4" Immiscible Layer: Y (N)

Approximate depth of pump inlet*(ft): ~~25~~ 27.25 Pump Start Time: 0935

Ferrous Iron (Required Y or (N)) _____ mg/L

2ND DTW - 26.69

APTIM

# Sample Collection Log



| Location ID: 46WW11 | | Sample No: 46WW11R-230228 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Date of Reading | Time of Reading | Purge Rate | Total Purge | DTW | Cond. | Temp. | pH | Turbidity | ORP | DO |
| | | (ml/min) | (L) | (ft) | (mS/cm) | (°C) | | (NTU) | (mV) | (mg/L) |
| | Purge Stabilization Criteria | - | - | Drawdown limit 0.3 ft | ±10% | | ±0.1 units | No criteria | | ± 10% or 0.2 mg/L |
| 2/28/23 | 0940 | 100 | 1.5 | 26.77 | 1.09 | 17.38 | 6.74 | 4.7 | 125 | 2.77 |
| | 0945 | 100 | 1.0 | 26.83 | 0.991 | 18.50 | 6.07 | 2.1 | 140 | 2.48 |
| | 0950 | 100 | 1.5 | 26.87 | 0.974 | 18.59 | 5.93 | 0.7 | 157 | 2.27 |
| | 0955 | 100 | 2.0 | 26.90 | 0.974 | 18.64 | 5.92 | 0.0 | 158 | 2.25 |
| | 1000 | 100 | 2.5 | 26.93 | 0.974 | 18.68 | 5.91 | 0.0 | 158 | 2.22 |
| ↓ | 1005 | 100 | 3.0 | 26.95 | 0.973 | 18.73 | 5.90 | 0.0 | 159 | 2.20 |
| | | | | | | | | | | |
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Logged by: _____ Date: _____

QC'd by: _____ Date: _____

APTIM

# Sample Collection Log



Project Name: **Longhorn AAP**

Project No: **501032**

Location ID: **46WW12**

Sampler(s): Scott Beasinger

**FIELD CONDITIONS** CLEAR

**SAMPLING INFORMATION**

**Sample No:** 46WW12-230206 **DATE/TIME:** 2/6/23 1201 **Pump Inlet Depth:** NA

**Sampling Method:** LF **Sample Purpose:** REG **Sample Matrix:** GW

| Appearance of Sample | Assoc. QC Samples | Decontamination Procedures |
|---|---|---|
| | | |

| Chain of Custody | COC Notes | Lab | Analyses | Container | Preserv |
|---|---|---|---|---|---|
| | | ALSHT | VOCs in Water by 8260C | 3 x 40 mL Glass | HCL<pH2 |

**WELL AND PURGING INFORMATION**

Measuring Point : Top of Casing

Purging Method/Equipment: Low flow/Bladder Pump

Casing ID (in.): 4

Purge Start Date/Time: 2/6/23 NA

Depth to Water - Initial (DTWi) (ft) DRY

Purge End Date/Time: 2/6/23 NA

Depth to Well Bottom (ft) ~~28.5~~ 29.43

Discharge Tube Length: NA

PID Reading: NA

Screen Interval (ft): 18.97-28.47

Discharge Tube Diameter: 1/4 11

Immiscible Layer: Y / (N)

Approximate depth of pump inlet*(ft): ~~24-28~~

Pump Start Time: NA

Ferrous Iron (Required Y or (N) _____ mg/L

2ND DTW - DRY

APTIM

# Sample Collection Log



| Location ID: 46WW12 | | | | Sample No: 46WW12-230206 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Date of Reading** | **Time of Reading** | **Purge Rate** | **Total Purge** | **DTW** | **Cond.** | **Temp.** | **pH** | **Turbidity** | **ORP** | **DO** |
| | | **(ml/min)** | **(L)** | **(ft)** | **(mS/cm)** | **(°C)** | | **(NTU)** | **(mV)** | **(mg/L)** |
| | Purge Stabilization Criteria | - | - | Drawdown limit 0.3 ft | ±10% | | ±0.1 units | No criteria | | ± 10% or 0.2 mg/L |
| 2/6/23 | | | | | | | | | | |
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| | | | DRY WELL | | | | | | | |
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Logged by: _____ Date: _____

QC'd by: _____ Date: _____

APTIM

# Sample Collection Log



Project Name: **Longhorn AAP**

Project No: **501032**

Location ID: **46WW12**

Sampler(s): Scott Beesinger

**FIELD CONDITIONS** CLEAR

**SAMPLING INFORMATION**

**Sample No:** 46WW12-2302**06**-MS **DATE/TIME:** 2/6/23 **Pump Inlet Depth:** NA

**Sampling Method:** LF **Sample Purpose:** MS **Sample Matrix:** GW

**Appearance of Sample** | **Assoc. QC Samples** | **Decontamination Procedures**

| Chain of Custody | COC Notes | Lab | Analyses | Container | Preserv |
|---|---|---|---|---|---|
| | | ALSHT | VOCs in Water by 8260C | 3 x 40 mL Glass | HCL<pH2 |

**WELL AND PURGING INFORMATION**

Measuring Point : Top of Casing

Casing ID (in.): 4

Depth to Water - Initial (DTWi) (ft) DRY

Depth to Well Bottom (ft) ~~28.38~~ 29.43

Screen Interval (ft): 18.97-28.47

Approximate depth of pump inlet*(ft): ~~21.25~~

Ferrous Iron (Required Y or (N)) _____ mg/L

Purging Method/Equipment: Low flow/BLADDER Pump

Purge Start Date/Time: 2/6/23 NA

Purge End Date/Time: 2/6/23 NA

Discharge Tube Length: NA PID Reading: NA

Discharge Tube Diameter: 1/4" Immiscible Layer: Y (N)

Pump Start Time: _____

2ND DTW- DRY

APTIM

# Sample Collection Log



| Location ID: 46WW12 | | | | Sample No: 46WW12-2302**0b**-MS | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Date of Reading** | **Time of Reading** | **Purge Rate** | **Total Purge** | **DTW** | **Cond.** | **Temp.** | **pH** | **Turbidity** | **ORP** | **DO** |
| | | **(ml/min)** | **(L)** | **(ft)** | **(mS/cm)** | **(°C)** | | **(NTU)** | **(mV)** | **(mg/L)** |
| | Purge Stabilization Criteria | - | - | Drawdown limit 0.3 ft | ±10% | | ±0.1 units | No criteria | | ± 10% or 0.2 mg/L |
| 2/6/23 | | | | | | | | | | |
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Dry well

Logged by: _____ Date: _____

QC'd by: _____ Date: _____

APTIM

# Sample Collection Log



Project Name: **Longhorn AAP**

Project No: **501032**

Location ID: **46WW12**

Sampler(s): Scott Beesinger

**FIELD CONDITIONS** CLEAR

**SAMPLING INFORMATION**

**Sample No:** 46WW12-230206-MSD **DATE/TIME:** 2/6/23 **Pump Inlet Depth:** NA

**Sampling Method:** LF **Sample Purpose:** MSD **Sample Matrix:** GW

| Appearance of Sample | Assoc. QC Samples | Decontamination Procedures |
|---|---|---|
| | | |

| Chain of Custody | COC Notes | Lab | Analyses | Container | Preserv |
|---|---|---|---|---|---|
| | | ALSHT | VOCs in Water by 8260C | 3 x 40 mL Glass | HCL<pH2 |

**WELL AND PURGING INFORMATION**

Measuring Point : Top of Casing

Purging Method/Equipment: Low flow/BLADDER Pump

Casing ID (in.): 4

Purge Start Date/Time: 2/6/23 NA

Depth to Water - Initial (DTWi) (ft) DRY

Purge End Date/Time: 2/6/23 NA

Depth to Well Bottom (ft) ~~28.5~~ 29.43

Discharge Tube Length: NA PID Reading: NA

Screen Interval (ft): 18.97-28.47

Discharge Tube Diameter: 1/4" Immiscible Layer: Y /(N)

Approximate depth of pump inlet*(ft): ~~24-28~~

Pump Start Time: _____

Ferrous Iron (Required Y or (N)) _____ mg/L

2ND DTW- DRY

APTIM

# Sample Collection Log



| Location ID: 46WW12 | | | | Sample No: 46WW12-230206-MSD | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Date of Reading** | **Time of Reading** | **Purge Rate** | **Total Purge** | **DTW** | **Cond.** | **Temp.** | **pH** | **Turbidity** | **ORP** | **DO** |
| | | **(ml/min)** | **(L)** | **(ft)** | **(mS/cm)** | **(°C)** | | **(NTU)** | **(mV)** | **(mg/L)** |
| | Purge Stabilization Criteria | - | - | Drawdown limit 0.3 ft | ±10% | | ±0.1 units | No criteria | | ± 10% or 0.2 mg/L |
| 2/6/23 | | | | | | | | | | |
| | | | | DRY WELL | | | | | | |
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Logged by: _____ Date: _____

QC'd by: _____ Date: _____

APTIM

# Sample Collection Log



Project Name: **Longhorn AAP**

Project No: **501032**

Location ID: **46WW13**

Sampler(s): Scott Beasinger

**FIELD CONDITIONS** CLEAR

**SAMPLING INFORMATION**

**Sample No:** 46WW13-230206 **DATE/TIME:** 2/6/23 1211 **Pump Inlet Depth:** NA

**Sampling Method:** LF **Sample Purpose:** REG **Sample Matrix:** GW

**Appearance of Sample** **Assoc. QC Samples** **Decontamination Procedures**

| Chain of Custody | COC Notes | Lab | Analyses | Container | Preserv |
|---|---|---|---|---|---|
| | | ALSHT | VOCs in Water by 8260C | 3 x 40 mL Glass | HCL<pH2 |

**WELL AND PURGING INFORMATION**

Measuring Point : Top of Casing

Casing ID (in.): 4

Depth to Water - Initial (DTWi) (ft) DRY

Depth to Well Bottom (ft) ~~29~~ 31.62

Screen Interval (ft): 21.42-30.92

Approximate depth of pump inlet*(ft): ~~25.76~~

Ferrous Iron (Required Y or (N)) _____ mg/L

Purging Method/Equipment: Low flow/Bladder Pump

Purge Start Date/Time: 2/6/23 NA

Purge End Date/Time: 2/6/23 NA

Discharge Tube Length: NA PID Reading: NA

Discharge Tube Diameter: 1/4" Immiscible Layer: Y / (N)

Pump Start Time: _____

2ND DTW- DRY

APTIM

# Sample Collection Log



| Location ID: 46WW13 | | | | Sample No: 46WW13-230206 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Date of Reading** | **Time of Reading** | **Purge Rate** | **Total Purge** | **DTW** | **Cond.** | **Temp.** | **pH** | **Turbidity** | **ORP** | **DO** |
| | | **(ml/min)** | **(L)** | **(ft)** | **(mS/cm)** | **(°C)** | | **(NTU)** | **(mV)** | **(mg/L)** |
| | Purge Stabilization Criteria | - | - | Drawdown limit 0.3 ft | ±10% | | ±0.1 units | No criteria | | ± 10% or 0.2 mg/L |
| 2/6/23 | | | | | | | | | | |
| | | | | DRY WELL | | | | | | |
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Logged by: _____ Date: _____

QC'd by: _____ Date: _____

APTIM

# Sample Collection Log



Project Name: **Longhorn AAP**

Project No: **501032**

Location ID: **46WW14**

Sampler(s): Scott Beasinger

**FIELD CONDITIONS** Clear

**SAMPLING INFORMATION**

**Sample No:** 46WW14-230206 **DATE/TIME:** 2/6/23 1117 **Pump Inlet Depth:** 49.35

**Sampling Method:** LF **Sample Purpose:** REG **Sample Matrix:** GW

| Appearance of Sample | Assoc. QC Samples | Decontamination Procedures |
|---|---|---|
| | | |

| Chain of Custody | COC Notes | Lab | Analyses | Container | Preserv |
|---|---|---|---|---|---|
| | | ALSHT | VOCs in Water by 8260C | 3 x 40 mL Glass | HCL<pH2 |

**WELL AND PURGING INFORMATION**

Measuring Point : Top of Casing

Purging Method/Equipment: Low flow Bladder Pump

Casing ID (in.): 4

Purge Start Date/Time: 2/6/23 1125

Depth to Water - Initial (DTWi) (ft) 34.35

Purge End Date/Time: 2/6/23 1155

Depth to Well Bottom (ft) 53.55

Discharge Tube Length: NA

PID Reading: NA

Screen Interval (ft): 44.60 - 54.10

Discharge Tube Diameter: 1/4 11

Immiscible Layer: Y / (N)

Approximate depth of pump inlet*(ft): 49.35

Pump Start Time: 1125

Ferrous Iron (Required Y or (N)) _____ mg/L

2ND DTW - 34.35

APTIM

# Sample Collection Log



| Location ID: 46WW14 | | | | Sample No: 46WW14-230206 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Date of Reading** | **Time of Reading** | **Purge Rate** | **Total Purge** | **DTW** | **Cond.** | **Temp.** | **pH** | **Turbidity** | **ORP** | **DO** |
| | | **(ml/min)** | **(L)** | **(ft)** | **(mS/cm)** | **(°C)** | | **(NTU)** | **(mV)** | **(mg/L)** |
| | Purge Stabilization Criteria | - | - | Drawdown limit 0.3 ft | ±10% | | ±0.1 units | No criteria | | ± 10% or 0.2 mg/L |
| 2/6/23 | 1130 | 100 | .5 | 34.42 | 0.665 | 17.76 | 6.96 | 17.1 | -38 | 0.65 |
| | 1135 | 100 | 1.0 | 34.48 | 0.660 | 17.85 | 6.83 | 14.5 | -64 | 0.22 |
| | 1140 | 100 | 1.5 | 34.52 | 0.655 | 17.94 | 6.78 | 14.4 | -75 | 0.06 |
| | 1145 | 100 | 2.0 | 34.54 | 0.654 | 17.98 | 6.77 | 14.3 | -76 | 0.06 |
| | 1150 | 100 | 2.5 | 34.55 | 0.654 | 18.04 | 6.77 | 14.2 | -77 | 0.06 |
| ↓ | 1155 | 100 | 3.0 | 34.56 | 0.654 | 18.10 | 6.77 | 14.1 | -78 | 0.05 |
| | | | | | | | | | | |
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Logged by: _____ Date: _____

QC'd by: _____ Date: _____

APTIM

# Sample Collection Log



Project Name: **Longhorn AAP**

Project No: **501032**

Location ID: **46WW15**

Sampler(s): Scott Bassinger

**FIELD CONDITIONS** CLEAR

**SAMPLING INFORMATION**

**Sample No:** 46WW15-230209 **DATE/TIME:** 2/9/23 1250 **Pump Inlet Depth:** NA

**Sampling Method:** LF **Sample Purpose:** REG **Sample Matrix:** GW

| Appearance of Sample | Assoc. QC Samples | Decontamination Procedures |
|---|---|---|
| | | |

| Chain of Custody | COC Notes | Lab | Analyses | Container | Preserv |
|---|---|---|---|---|---|
| | | ALSHT | VOCs in Water by 8260C | 3 x 40 mL Glass | HCL<pH2 |

**WELL AND PURGING INFORMATION**

Measuring Point : Top of Casing

Purging Method/Equipment: Low flow/Bladder Pump

Casing ID (in.): 4

Purge Start Date/Time: 2/9/23 NA

Depth to Water - Initial (DTWi) (ft) DRY

Purge End Date/Time: 2/9/23 NA

Depth to Well Bottom (ft) ~~28.5~~ 30.22

Discharge Tube Length: NA PID Reading: NA

Screen Interval (ft): 20.45-29.95

Discharge Tube Diameter: 1/4" Immiscible Layer: Y / (N)

Approximate depth of pump inlet*(ft): ~~23.25~~

Pump Start Time: NA

Ferrous Iron (Required Y or (N)) _____ mg/L

2ND DTW- DRY

APTIM

# Sample Collection Log



| Location ID: 46WW15 | | Sample No: 46WW15-230209 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Date of Reading | Time of Reading | Purge Rate | Total Purge | DTW | Cond. | Temp. | pH | Turbidity | ORP | DO |
| | | (ml/min) | (L) | (ft) | (mS/cm) | (°C) | | (NTU) | (mV) | (mg/L) |
| | Purge Stabilization Criteria | - | - | Drawdown limit 0.3 ft | ±10% | | ±0.1 units | No criteria | | ± 10% or 0.2 mg/L |
| 2/9/23 | | | | | | | | | | |
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| | | | | DRY WELL | | | | | | |
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Logged by: _____ Date: _____

QC'd by: _____ Date: _____

APTIM

# Sample Collection Log



Project Name: **Longhorn AAP**

Project No: **501032**

Location ID: **46WW16**

Sampler(s): Scott Beesinger

**FIELD CONDITIONS** Clear

**SAMPLING INFORMATION**

**Sample No:** 46WW16-230206 **DATE/TIME:** 2/6/23 0743 **Pump Inlet Depth:** 45.56

**Sampling Method:** LF **Sample Purpose:** REG **Sample Matrix:** GW

| Appearance of Sample | Assoc. QC Samples | Decontamination Procedures |
|---|---|---|
| | | |

| Chain of Custody | COC Notes | Lab | Analyses | Container | Preserv |
|---|---|---|---|---|---|
| | | ALSHT | Anions (chloride/nitrate/sulfate) in Water by SW9056 | 1 x 125 mL HPDE | Cool 4C |
| | | ALSHT | Carbon Dioxide in Water by RSK175 | 3 x 40 mL Glass | Cool 4C |
| | | ALSHT | Dissolved Gases in Water by RSK175 | 3 x 40 mL Glass | HCL<pH2 |
| | | ALSHT | TOC in Water by SM5310C | 2 x 40 mL Amber | H2SO4 |
| | | ALSHT | VOCs in Water by 8260C | 3 x 40 mL Glass | HCL<pH2 |

**WELL AND PURGING INFORMATION**

Measuring Point : Top of Casing

Purging Method/Equipment: Low flow/Bladder Pump

Casing ID (in.): 4

Purge Start Date/Time: 2/6/23 0750

Depth to Water - Initial (DTWi) (ft) 39.42

Purge End Date/Time: 2/6/23 0820

Depth to Well Bottom (ft) ~~40~~ 51.50

Discharge Tube Length: NA

PID Reading: NA

Screen Interval (ft): 40.66 - 50.46

Discharge Tube Diameter: 1/4"

Immiscible Layer: Y / (N)

Approximate depth of pump inlet*(ft): ~~40.0~~ 45.56

Pump Start Time: 0750

Ferrous Iron (Required Y or (N) _____ mg/L

2ND DTW- 39.42

APTIM

# Sample Collection Log



Location ID: 46WW16 Sample No: 46WW16-230206

| Date of Reading | Time of Reading | Purge Rate | Total Purge | DTW | Cond. | Temp. | pH | Turbidity | ORP | DO |
|---|---|---|---|---|---|---|---|---|---|---|
| | | (ml/min) | (L) | (ft) | (mS/cm) | (°C) | | (NTU) | (mV) | (mg/L) |
| | Purge Stabilization Criteria | - | - | Drawdown limit 0.3 ft | ±10% | | ±0.1 units | No criteria | | ± 10% or 0.2 mg/L |
| 2/6/23 | 0755 | 100 | .5 | 39.50 | 2.99 | 14.89 | 10.81 | 37.7 | -45 | 0.67 |
| | 0800 | 100 | 1.0 | 39.55 | 2.92 | 17.16 | 10.64 | 30.9 | -77 | 0.20 |
| | 0805 | 100 | 1.5 | 39.58 | 2.87 | 17.37 | 10.59 | 26.8 | -122 | 0.05 |
| | 0810 | 100 | 2.0 | 39.60 | 2.86 | 17.44 | 10.58 | 26.4 | -124 | 0.05 |
| | 0815 | 100 | 2.5 | 39.62 | 2.85 | 17.49 | 10.57 | 25.7 | -125 | 0.04 |
| ↓ | 0820 | 100 | 3.0 | 39.63 | 2.85 | 17.53 | 10.57 | 25.3 | -126 | 0.04 |
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Logged by: _____ Date: _____

QC'd by: _____ Date: _____

APTIM

# Sample Collection Log



Project Name: **Longhorn AAP**

Project No: **501032**

Location ID: **46WW17**

Sampler(s): Scott Beesingar

**FIELD CONDITIONS** Clear

**SAMPLING INFORMATION**

**Sample No:** 46WW17-2302~~09~~ **DATE/TIME:** 2/9/23 1101 **Pump Inlet Depth:** 33.25

**Sampling Method:** LF **Sample Purpose:** REG **Sample Matrix:** GW

**Appearance of Sample** **Assoc. QC Samples** **Decontamination Procedures**

| Chain of Custody | COC Notes | Lab | Analyses | Container | Preserv |
|---|---|---|---|---|---|
| | | ALSHT | VOCs in Water by 8260C | 3 x 40 mL Glass | HCL<pH2 |

**WELL AND PURGING INFORMATION**

Measuring Point : Top of Casing

Purging Method/Equipment: Low flow/Bladder Pump

Casing ID (in.): 4

Purge Start Date/Time: 2/9/23 1105

Depth to Water - Initial (DTWi) (ft) 32.45

Purge End Date/Time: 2/9/23 1135

Depth to Well Bottom (ft) ~~32~~ 36.55

Discharge Tube Length: NA PID Reading: NA

Screen Interval (ft): 27.69-37.69

Discharge Tube Diameter: 1/4" Immiscible Layer: Y / (N)

Approximate depth of pump inlet*(ft): ~~32~~ 33.25

Pump Start Time: 1105

Ferrous Iron (Required Y or (N)) _____ mg/L

2ND DTW - 32.45

APTIM

# Sample Collection Log



| Location ID: 46WW17 | | | | Sample No: 46WW17-230209 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Date of Reading | Time of Reading | Purge Rate | Total Purge | DTW | Cond. | Temp. | pH | Turbidity | ORP | DO |
| | | (ml/min) | (L) | (ft) | (mS/cm) | (°C) | | (NTU) | (mV) | (mg/L) |
| | Purge Stabilization Criteria | - | - | Drawdown limit 0.3 ft | ±10% | | ±0.1 units | No criteria | | ± 10% or 0.2 mg/L |
| 2/9/23 | 1110 | 100 | .5 | 32.53 | 6.78 | 16.82 | 6.88 | 2.5 | 39 | 0.61 |
| | 1115 | 100 | 1.0 | 32.59 | 6.89 | 17.61 | 6.57 | 2.0 | 57 | 0.17 |
| | 1120 | 100 | 1.5 | 32.63 | 6.94 | 18.37 | 6.45 | 1.8 | 73 | 0.03 |
| | 1125 | 100 | 2.0 | 32.66 | 6.95 | 18.46 | 6.44 | 1.5 | 74 | 0.03 |
| | 1130 | 100 | 2.5 | 32.69 | 6.96 | 18.51 | 6.42 | 1.3 | 74 | 0.02 |
| | 1135 | 100 | 3.0 | 32.71 | 6.96 | 18.55 | 6.42 | 1.2 | 75 | 0.02 |
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Logged by: _____ Date: _____

QC'd by: _____ Date: _____

APTIM

# Sample Collection Log



Project Name: **Longhorn AAP**

Project No: **501032**

Location ID: **LHSMW17**

Sampler(s): Scott Beesinger

**FIELD CONDITIONS** CLEAR

**SAMPLING INFORMATION**

**Sample No:** LHSMW17-230209 **DATE/TIME:** 2/9/23 1237 **Pump Inlet Depth:** NA

**Sampling Method:** LF **Sample Purpose:** REG **Sample Matrix:** GW

| Appearance of Sample | Assoc. QC Samples | Decontamination Procedures |
|---|---|---|
| | | |

| Chain of Custody | COC Notes | Lab | Analyses | Container | Preserv |
|---|---|---|---|---|---|
| | | ALSHT | VOCs in Water by 8260C | 3 x 40 mL Glass | HCL<pH2 |

**WELL AND PURGING INFORMATION**

Measuring Point : Top of Casing

Purging Method/Equipment: Low flow/Bladder Pump

Casing ID (in.): 4

Purge Start Date/Time: 2/9/23 NA

Depth to Water - Initial (DTWi) (ft) DRY

Purge End Date/Time: 2/9/23 NA

Depth to Well Bottom (ft) ~~27~~ 27.00

Discharge Tube Length: NA PID Reading: NA

Screen Interval (ft): 16.68 - 26.68

Discharge Tube Diameter: 1/4" Immiscible Layer: Y / (N)

Approximate depth of pump inlet*(ft): ~~18.0~~

Pump Start Time: NA

Ferrous Iron (Required Y or (N) _____ mg/L

2ND DTW - DRY

APTIM

# Sample Collection Log



| Location ID: LHSMW17 | | | | Sample No: LHSMW17-2302 09 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Date of Reading | Time of Reading | Purge Rate | Total Purge | DTW | Cond. | Temp. | pH | Turbidity | ORP | DO |
| | | (ml/min) | (L) | (ft) | (mS/cm) | (°C) | | (NTU) | (mV) | (mg/L) |
| | Purge Stabilization Criteria | - | - | Drawdown limit 0.3 ft | ±10% | | ±0.1 units | No criteria | | ± 10% or 0.2 mg/L |
| 2/9/23 | | | | | | | | | | |
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DRY WELL

Logged by: _____ Date: _____

QC'd by: _____ Date: _____

APTIM

# Sample Collection Log



Project Name: **Longhorn AAP**

Location ID: **LHSMW18**

Project No: **501032**

Sampler(s): Scott Beesinger

## FIELD CONDITIONS

CLEAR

## SAMPLING INFORMATION

**Sample No:** LHSMW18-230209 **DATE/TIME:** 2/9/23 1240 **Pump Inlet Depth:** NA

**Sampling Method:** LF **Sample Purpose:** REG **Sample Matrix:** GW

**Appearance of Sample** | **Assoc. QC Samples** | **Decontamination Procedures**

| Chain of Custody | COC Notes | Lab | Analyses | Container | Preserv |
|---|---|---|---|---|---|
| | | ALSHT | VOCs in Water by 8260C | 3 x 40 mL Glass | HCL<pH2 |

## WELL AND PURGING INFORMATION

Measuring Point : Top of Casing

Purging Method/Equipment: Low Flow/BLADDER Pump

Casing ID (in.): 4

Purge Start Date/Time: 2/9/23 NA

Depth to Water - Initial (DTWi) (ft) DRY

Purge End Date/Time: 2/9/23 NA

Depth to Well Bottom (ft) ~~25~~ 27.88

Discharge Tube Length: NA PID Reading: NA

Screen Interval (ft): 17.47-27.47

Discharge Tube Diameter: 1/4" Immiscible Layer: Y / (N)

Approximate depth of pump inlet*(ft): ~~19.5~~

Pump Start Time: NA

Ferrous Iron (Required Y or (N)) _____ mg/L

2ND DTW- DRY

APTIM

# Sample Collection Log



| Location ID: LHSMW18 | | | | Sample No: LHSMW18-230209 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Date of Reading | Time of Reading | Purge Rate | Total Purge | DTW | Cond. | Temp. | pH | Turbidity | ORP | DO |
| | | (ml/min) | (L) | (ft) | (mS/cm) | (°C) | | (NTU) | (mV) | (mg/L) |
| | Purge Stabilization Criteria | - | - | Drawdown limit 0.3 ft | ±10% | | ±0.1 units | No criteria | | ± 10% or 0.2 mg/L |
| 2/9/23 | | | | | | | | | | |
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DRY WELL

Logged by: _____ Date: _____

QC'd by: _____ Date: _____

APTIM

# Sample Collection Log



Project Name: **Longhorn AAP**

Project No: **501032**

Location ID: **LHSMW19**

Sampler(s): Scott Beesinger

## FIELD CONDITIONS

Clear

## SAMPLING INFORMATION

**Sample No:** LHSMW19-230209 **DATE/TIME:** 2/9/23 0803 **Pump Inlet Depth:** 27.00

**Sampling Method:** LF **Sample Purpose:** REG **Sample Matrix:** GW

| Appearance of Sample | Assoc. QC Samples | Decontamination Procedures |
|---|---|---|
| | | |

| Chain of Custody | COC Notes | Lab | Analyses | Container | Preserv |
|---|---|---|---|---|---|
| | | ALSHT | VOCs in Water by 8260C | 3 x 40 mL Glass | HCL<pH2 |

## WELL AND PURGING INFORMATION

Measuring Point : Top of Casing

Purging Method/Equipment: Low flow/Bladder Pump

Casing ID (in.): 4

Purge Start Date/Time: 2/9/23 0810

Depth to Water - Initial (DTWi) (ft) 26.10

Purge End Date/Time: 2/9/23 0840

Depth to Well Bottom (ft) ~~27~~ 29.98

Discharge Tube Length: NA PID Reading: NA

Screen Interval (ft): 19.76-29.76

Discharge Tube Diameter: 1/4" Immiscible Layer: Y / (N)

Approximate depth of pump inlet*(ft): ~~25~~ 27.00 Pump Start Time: 0810

Ferrous Iron (Required Y or (N)) _____ mg/L

2ND DTW - 26.10

APTIM

# Sample Collection Log



| Location ID: LHSMW19 | | | | Sample No: LHSMW19-230209 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Date of Reading | Time of Reading | Purge Rate | Total Purge | DTW | Cond. | Temp. | pH | Turbidity | ORP | DO |
| | | (ml/min) | (L) | (ft) | (mS/cm) | (°C) | | (NTU) | (mV) | (mg/L) |
| | Purge Stabilization Criteria | - | - | Drawdown limit 0.3 ft | ±10% | | ±0.1 units | No criteria | | ± 10% or 0.2 mg/L |
| 2/9/23 | 0815 | 100 | .5 | 26.17 | 3.07 | 14.73 | 6.23 | 9.8 | 100 | 0.71 |
| | 0820 | 100 | 1.0 | 26.23 | 3.18 | 15.17 | 6.45 | 3.3 | 50 | 0.24 |
| | 0825 | 100 | 1.5 | 26.27 | 3.25 | 15.22 | 6.52 | 1.2 | 34 | 0.09 |
| | 0830 | 100 | 2.0 | 26.30 | 3.25 | 15.25 | 6.52 | 0.6 | 33 | 0.09 |
| | 0835 | 100 | 2.5 | 26.33 | 3.26 | 15.28 | 6.53 | 0.0 | 33 | 0.09 |
| ↓ | 0840 | 100 | 3.0 | 26.36 | 3.27 | 15.31 | 6.53 | 0.0 | 32 | 0.08 |
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Logged by: _____ Date: _____

QC'd by: _____ Date: _____

APTIM

# Sample Collection Log



Project Name: **Longhorn AAP**

Project No: **501032**

Location ID: **LHSMW19**

Sampler(s): Scott Beesinger

## FIELD CONDITIONS

CLEAR

## SAMPLING INFORMATION

**Sample No:** LHSMW19-2302 ~~(S)~~ FD **DATE/TIME:** 2/9/23 0803 **Pump Inlet Depth:** 27.00

**Sampling Method:** LF **Sample Purpose:** FD **Sample Matrix:** GW

| Appearance of Sample | Assoc. QC Samples | Decontamination Procedures |
|---|---|---|
| | | |

| Chain of Custody | COC Notes | Lab | Analyses | Container | Preserv |
|---|---|---|---|---|---|
| | | ALSHT | VOCs in Water by 8260C | 3 x 40 mL Glass | HCL<pH2 |

## WELL AND PURGING INFORMATION

Measuring Point : Top of Casing

Casing ID (in.): 4

Depth to Water - Initial (DTWi) (ft) 26.10

Depth to Well Bottom (ft) ~~27~~ 29.98

Screen Interval (ft): 19.76 - 29.76

Approximate depth of pump inlet*(ft): ~~25~~

Ferrous Iron (Required Y or (N) _____ mg/L

Purging Method/Equipment: Low Flow/BLADDER Pump

Purge Start Date/Time: 2/9/23 0810

Purge End Date/Time: 2/9/23 0840

Discharge Tube Length: NA PID Reading: NA

Discharge Tube Diameter: 1/4" Immiscible Layer: Y / (N)

Pump Start Time: 0810

2ND DTW - 26.10

APTIM

# Sample Collection Log



| Location ID: LHSMW19 | | | | Sample No: LHSMW19-230209-FD | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Date of Reading | Time of Reading | Purge Rate | Total Purge | DTW | Cond. | Temp. | pH | Turbidity | ORP | DO |
| | | (ml/min) | (L) | (ft) | (mS/cm) | (°C) | | (NTU) | (mV) | (mg/L) |
| | Purge Stabilization Criteria | - | - | Drawdown limit 0.3 ft | ±10% | | ±0.1 units | No criteria | | ± 10% or 0.2 mg/L |
| 2/9/23 | 0815 | 100 | .5 | 26.17 | 3.07 | 14.73 | 6.23 | 9.8 | 100 | 0.71 |
| | 0820 | 100 | 1.0 | 26.23 | 3.18 | 15.17 | 6.45 | 3.3 | 50 | 0.24 |
| | 0825 | 100 | 1.5 | 26.27 | 3.25 | 15.22 | 6.52 | 1.2 | 34 | 0.09 |
| | 0830 | 100 | 2.0 | 26.30 | 3.25 | 15.25 | 6.52 | 0.6 | 33 | 0.09 |
| | 0835 | 100 | 2.5 | 26.33 | 3.26 | 15.28 | 6.53 | 0.0 | 33 | 0.09 |
| ↓ | 0840 | 100 | 3.0 | 26.36 | 3.27 | 15.31 | 6.53 | 0.0 | 32 | 0.08 |
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Logged by: _____ Date: _____

QC'd by: _____ Date: _____

APTIM

# Sample Collection Log



Project Name: **Longhorn AAP**

Project No: **501032**

Location ID: **LHSMW21**

Sampler(s): Scott Beesinger

**FIELD CONDITIONS** CLEAR

**SAMPLING INFORMATION**

**Sample No:** LHSMW21-230206 **DATE/TIME:** 2/6/23 0657 **Pump Inlet Depth:** 24.61

**Sampling Method:** LF **Sample Purpose:** REG **Sample Matrix:** GW

**Appearance of Sample** | **Assoc. QC Samples** | **Decontamination Procedures**

| Chain of Custody | COC Notes | Lab | Analyses | Container | Preserv |
|---|---|---|---|---|---|
| | | ALSHT | Anions (chloride/nitrate/sulfate) in Water by SW9056 | 1 x 125 mL HPDE | Cool 4C |
| | | ALSHT | Carbon Dioxide in Water by RSK175 | 3 x 40 mL Glass | Cool 4C |
| | | ALSHT | Dissolved Gases in Water by RSK175 | 3 x 40 mL Glass | HCL<pH2 |
| | | ALSHT | TOC in Water by SM5310C | 2 x 40 mL Amber | H2SO4 |
| | | ALSHT | VOCs in Water by 8260C | 3 x 40 mL Glass | HCL<pH2 |

**WELL AND PURGING INFORMATION**

Measuring Point : Top of Casing

Purging Method/Equipment: Low flow/Bladder Pump

Casing ID (in.): 4

Purge Start Date/Time: 2/6/23 0705

Depth to Water - Initial (DTWi) (ft) 19.35

Purge End Date/Time: 2/6/23 0735

Depth to Well Bottom (ft) ~~29~~ 29.75

Discharge Tube Length: NA PID Reading: NA

Screen Interval (ft): 19.61-29.61

Discharge Tube Diameter: 1/4" Immiscible Layer: Y / (N)

Approximate depth of pump inlet*(ft): ~~25~~ 24.61

Pump Start Time: 0705

Ferrous Iron (Required Y or (N)) _____ mg/L

2ND DTW - 19.35

APTIM

# Sample Collection Log



| Location ID: LHSMW21 | | | | Sample No: LHSMW21-230206 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Date of Reading | Time of Reading | Purge Rate | Total Purge | DTW | Cond. | Temp. | pH | Turbidity | ORP | DO |
| | | (ml/min) | (L) | (ft) | (mS/cm) | (°C) | | (NTU) | (mV) | (mg/L) |
| | Purge Stabilization Criteria | - | - | Drawdown limit 0.3 ft | ±10% | | ±0.1 units | No criteria | | ± 10% or 0.2 mg/L |
| 2/6/23 | 0710 | 100 | .5 | 19.42 | 2.03 | 15.28 | 7.02 | 25.1 | 133 | 0.73 |
| | 0715 | 100 | 1.0 | 19.48 | 2.00 | 16.28 | 6.95 | 20.3 | 135 | 0.23 |
| | 0720 | 100 | 1.5 | 19.52 | 1.99 | 16.49 | 6.98 | 18.7 | 130 | 0.08 |
| | 0725 | 100 | 2.0 | 19.55 | 1.98 | 16.54 | 6.98 | 18.3 | 129 | 0.08 |
| | 0730 | 100 | 2.5 | 19.57 | 1.98 | 16.58 | 6.98 | 17.6 | 129 | 0.07 |
| | 0735 | 100 | 3.0 | 19.59 | 1.98 | 16.62 | 6.98 | 17.2 | 128 | 0.07 |
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Logged by: _____ Date: _____

QC'd by: _____ Date: _____

APTIM

# Sample Collection Log



Project Name: **Longhorn AAP**

Project No: **501032**

Location ID: **LHSMW22**

Sampler(s): Scott Beesinger

**FIELD CONDITIONS** CLEAR

**SAMPLING INFORMATION**

**Sample No:** LHSMW22-230206 **DATE/TIME:** 2/6/23 1206 **Pump Inlet Depth:** NA

**Sampling Method:** LF **Sample Purpose:** REG **Sample Matrix:** GW

| Appearance of Sample | Assoc. QC Samples | Decontamination Procedures |
|---|---|---|
| | | |

| Chain of Custody | COC Notes | Lab | Analyses | Container | Preserv |
|---|---|---|---|---|---|
| | | ALSHT | VOCs in Water by 8260C | 3 x 40 mL Glass | HCL<pH2 |

**WELL AND PURGING INFORMATION**

Measuring Point : Top of Casing

Casing ID (in.): 4

Depth to Water - Initial (DTWi) (ft) DRY

Depth to Well Bottom (ft) ~~20~~ 28.82

Screen Interval (ft): 18.69-28.69

Approximate depth of pump inlet*(ft): ~~20~~

Ferrous Iron (Required Y or (N) _____ mg/L

Purging Method/Equipment: LowFlow/BladderPump

Purge Start Date/Time: 2/6/23 NA

Purge End Date/Time: 2/6/23 NA

Discharge Tube Length: NA PID Reading: NA

Discharge Tube Diameter: 1/4" Immiscible Layer: Y / (N)

Pump Start Time: _____

2ND DTW- DRY

APTIM

# Sample Collection Log



Location ID: LHSMW22 Sample No: LHSMW22-230206

| Date of Reading | Time of Reading | Purge Rate | Total Purge | DTW | Cond. | Temp. | pH | Turbidity | ORP | DO |
|---|---|---|---|---|---|---|---|---|---|---|
| | | (ml/min) | (L) | (ft) | (mS/cm) | (°C) | | (NTU) | (mV) | (mg/L) |
| | Purge Stabilization Criteria | - | - | Drawdown limit 0.3 ft | ±10% | | ±0.1 units | No criteria | | ± 10% or 0.2 mg/L |
| 2/6/23 | | | | | | | | | | |
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DRY WELL

Logged by: _____ Date: _____

QC'd by: _____ Date: _____

APTIM

# Sample Collection Log



Project Name: **Longhorn AAP**

Project No: **501032**

Location ID: **LHSMW23R**

Sampler(s): Scott Beesinger

**FIELD CONDITIONS** CLEAR

**SAMPLING INFORMATION**

**Sample No:** LHSMW23R-230209 **DATE/TIME:** 2/9/23 0847 **Pump Inlet Depth:** ~~39~~ 37.50

**Sampling Method:** LF **Sample Purpose:** REG **Sample Matrix:** GW

| Appearance of Sample | Assoc. QC Samples | Decontamination Procedures |
|---|---|---|
| | | |

| Chain of Custody | COC Notes | Lab | Analyses | Container | Preserv |
|---|---|---|---|---|---|
| | | ALSHT | VOCs in Water by 8260C | 3 x 40 mL Glass | HCL<pH2 |

**WELL AND PURGING INFORMATION**

Measuring Point : Top of Casing

Purging Method/Equipment: Low Flow/Bladder Pump

Casing ID (in.):

Purge Start Date/Time: 2/9/23 0855

Depth to Water - Initial (DTWi) (ft) 36.73

Purge End Date/Time: 2/9/23 0925

Depth to Well Bottom (ft) ~~40~~ 43.23

Discharge Tube Length: NA PID Reading: NA

Screen Interval (ft): 23.09 - 43.09

Discharge Tube Diameter: 1/4" Immiscible Layer: Y / (N)

Approximate depth of pump inlet*(ft): ~~39~~ ~~38~~ 37.50 Pump Start Time: 0855

Ferrous Iron (Required Y or (N)) _____ mg/L

2ND DTW - ~~38~~ 36.73

APTIM

# Sample Collection Log



| Location ID: LHSMW23R | | Sample No: LHSMW23R-230209 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Date of Reading** | **Time of Reading** | **Purge Rate** | **Total Purge** | **DTW** | **Cond.** | **Temp.** | **pH** | **Turbidity** | **ORP** | **DO** |
| | | **(ml/min)** | **(L)** | **(ft)** | **(mS/cm)** | **(°C)** | | **(NTU)** | **(mV)** | **(mg/L)** |
| | Purge Stabilization Criteria | - | - | Drawdown limit 0.3 ft | ±10% | | ±0.1 units | No criteria | | ± 10% or 0.2 mg/L |
| 2/9/23 | 0900 | 100 | .5 | 36.80 | 4.94 | 13.81 | 6.42 | 16.0 | 67 | 0.63 |
| | 0905 | 100 | 1.0 | 36.86 | 4.91 | 14.36 | 5.97 | 6.9 | 88 | 0.18 |
| | 0910 | 100 | 1.5 | 36.90 | 4.89 | 14.77 | 5.82 | 6.1 | 102 | 0.04 |
| | 0915 | 100 | 2.0 | 36.93 | 4.88 | 14.83 | 5.82 | 5.8 | 103 | 0.04 |
| | 0920 | 100 | 2.5 | 36.95 | 4.88 | 14.87 | 5.81 | 5.0 | 104 | 0.03 |
| ↓ | 0925 | 100 | 3.0 | 36.97 | 4.88 | 14.90 | 5.80 | 4.5 | 105 | 0.03 |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

Logged by: _____ Date: _____

QC'd by: _____ Date: _____

APTIM

# Sample Collection Log



Project Name: **Longhorn AAP**

Project No: **501032**

Location ID: **LHSMW23R**

Sampler(s): Scott Beesinger

**FIELD CONDITIONS** CLEAR

**SAMPLING INFORMATION**

**Sample No:** LHSMW23R-230209-FD **DATE/TIME:** 2/9/23 0847 **Pump Inlet Depth:** 33.09

**Sampling Method:** LF **Sample Purpose:** FD **Sample Matrix:** GW

| Appearance of Sample | Assoc. QC Samples | Decontamination Procedures |
|---|---|---|
| | | |

| Chain of Custody | COC Notes | Lab | Analyses | Container | Preserv |
|---|---|---|---|---|---|
| | | ALSHT | VOCs in Water by 8260C | 3 x 40 mL Glass | HCL<pH2 |

**WELL AND PURGING INFORMATION**

Measuring Point : Top of Casing

Purging Method/Equipment: Low Flow/Bladder Pump

Casing ID (in.):

Purge Start Date/Time: 2/9/23 0855

Depth to Water - Initial (DTWi) (ft) 36.73

Purge End Date/Time: 2/9/23 0925

Depth to Well Bottom (ft) 43.23

Discharge Tube Length: NA PID Reading: NA

Screen Interval (ft): 23.09-43.09

Discharge Tube Diameter: 1/4" Immiscible Layer: Y / (N)

Approximate depth of pump inlet*(ft): 33.09

Pump Start Time: 0855

Ferrous Iron (Required Y or (N) _____ mg/L

2ND DTW- 36.73

APTIM

# Sample Collection Log



| Location ID: LHSMW23R | Sample No: LHSMW23R-230209-FD | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Date of Reading | Time of Reading | Purge Rate | Total Purge | DTW | Cond. | Temp. | pH | Turbidity | ORP | DO |
| | | (ml/min) | (L) | (ft) | (mS/cm) | (°C) | | (NTU) | (mV) | (mg/L) |
| | Purge Stabilization Criteria | - | - | Drawdown limit 0.3 ft | ±10% | | ±0.1 units | No criteria | | ± 10% or 0.2 mg/L |
| 2/9/23 | 0900 | 100 | .5 | 36.80 | 4.94 | 13.81 | 6.42 | 16.0 | 67 | 0.63 |
| | 0905 | 100 | 1.0 | 36.86 | 4.91 | 14.36 | 5.97 | 6.9 | 88 | 0.18 |
| | 0910 | 100 | 1.5 | 36.90 | 4.89 | 14.77 | 5.82 | 6.1 | 102 | 0.04 |
| | 0915 | 100 | 2.0 | 36.93 | 4.88 | 14.83 | 5.82 | 5.8 | 103 | 0.04 |
| | 0920 | 100 | 2.5 | 36.95 | 4.88 | 14.87 | 5.81 | 5.0 | 104 | 0.03 |
| ↓ | 0925 | 100 | 3.0 | 36.97 | 4.88 | 14.90 | 5.80 | 4.5 | 105 | 0.03 |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

Logged by: _____ Date: _____

QC'd by: _____ Date: _____

APTIM

# Sample Collection Log



Project Name: **Longhorn AAP**

Location ID: **LHSMW25**

Project No: **501032**

Sampler(s): Scott Beeninger

**FIELD CONDITIONS** CLEAR

**SAMPLING INFORMATION**

**Sample No:** LHSMW25-2302~~09~~ **DATE/TIME:** 2/9/23 1016 **Pump Inlet Depth:** 32.75

**Sampling Method:** LF **Sample Purpose:** REG **Sample Matrix:** GW

| Appearance of Sample | Assoc. QC Samples | Decontamination Procedures |
|---|---|---|
| | | |

| Chain of Custody | COC Notes | Lab | Analyses | Container | Preserv |
|---|---|---|---|---|---|
| | | ALSHT | VOCs in Water by 8260C | 3 x 40 mL Glass | HCL<pH2 |

**WELL AND PURGING INFORMATION**

Measuring Point : Top of Casing

Purging Method/Equipment: Low Flow/Bladder Pump

Casing ID (in.): 4

Purge Start Date/Time: 2/9/23 1025

Depth to Water - Initial (DTWi) (ft) 32.00

Purge End Date/Time: 2/9/23 1055

Depth to Well Bottom (ft) ~~42.5~~ 42.62

Discharge Tube Length: NA PID Reading: NA

Screen Interval (ft): 22.10 - 42.10

Discharge Tube Diameter: 1/4" Immiscible Layer: Y (N)

Approximate depth of pump inlet*(ft): ~~32.2~~ 32.75

Pump Start Time: 1025

Ferrous Iron (Required Y or (N) _____ mg/L

2ND DTW - 32.00

APTIM

# Sample Collection Log



| Location ID: LHSMW25 | | | | Sample No: LHSMW25-230209 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Date of Reading | Time of Reading | Purge Rate | Total Purge | DTW | Cond. | Temp. | pH | Turbidity | ORP | DO |
| | | (ml/min) | (L) | (ft) | (mS/cm) | (°C) | | (NTU) | (mV) | (mg/L) |
| | Purge Stabilization Criteria | - | - | Drawdown limit 0.3 ft | ±10% | | ±0.1 units | No criteria | | ± 10% or 0.2 mg/L |
| 2/9/23 | 1030 | 100 | .5 | 32.07 | 1.81 | 15.75 | 6.71 | 3.5 | -3[illegible] | 0.65 |
| | 1035 | 100 | 1.0 | 32.13 | 1.73 | 16.61 | 6.55 | 2.8 | 7 | 0.20 |
| | 1040 | 100 | 1.5 | 32.15 | 1.69 | 16.72 | 6.45 | 2.4 | 16 | 0.06 |
| | 1045 | 100 | 2.0 | 32.18 | 1.68 | 16.77 | 6.44 | 2.0 | 17 | 0.06 |
| | 1050 | 100 | 2.5 | 32.20 | 1.68 | 16.83 | 6.44 | 1.6 | 18 | 0.06 |
| ↓ | 1055 | 100 | 3.0 | 32.22 | 1.68 | 16.87 | 6.43 | 1.2 | 18 | 0.05 |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

Logged by: _____ Date: _____

QC'd by: _____ Date: _____

# Appendix D

# Laboratory Analytical Data Package

**(Provided electronically on the Portal and CD)**

10450 Stancliff Rd. Suite 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887

June 14, 2023

Vicki Graves
Aptim Environmental & Infrastucture, Inc.
10333 Richmond Ave
Ste 1030
Houston, TX 77042

Work Order: **HS23020265**

Laboratory Results for: **LHAAP46 Febuary 2023**

Dear Vicki Graves ,

ALS Environmental received 7 sample(s) on Feb 07, 2023 for the analysis presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

**Generated By: JUMOKE.LAWAL**
Dane J. Wacasey

**ALS Houston, US** Date: 14-Jun-23

**Client:** Aptim Environmental & Infrastucture, Inc.
**Project:** LHAAP46 Febuary 2023
**Work Order:** HS23020265

**SAMPLE SUMMARY**

| Lab Samp ID | Client Sample ID | Matrix | TagNo | Collection Date | Date Received | Hold |
|---|---|---|---|---|---|---|
| HS23020265-01 | LHSMW21-230206 | GW | | 06-Feb-2023 07:35 | 07-Feb-2023 11:00 | ☐ |
| HS23020265-02 | 46WW16-230206 | GW | | 06-Feb-2023 08:20 | 07-Feb-2023 11:00 | ☐ |
| HS23020265-03 | 46WW03-230206 | GW | | 06-Feb-2023 09:15 | 07-Feb-2023 11:00 | ☐ |
| HS23020265-04 | 46WW02-230206 | GW | | 06-Feb-2023 10:00 | 07-Feb-2023 11:00 | ☐ |
| HS23020265-05 | 46WW07-230206 | GW | | 06-Feb-2023 11:10 | 07-Feb-2023 11:00 | ☐ |
| HS23020265-06 | 46WW14-230206 | GW | | 06-Feb-2023 11:55 | 07-Feb-2023 11:00 | ☐ |
| HS23020265-07 | Trip Blank-230206 | Water | | 06-Feb-2023 00:00 | 07-Feb-2023 11:00 | ☐ |

**ALS Houston, US** Date: 14-Jun-23

**Client:** Aptim Environmental & Infrastucture, Inc. **CASE NARRATIVE**
**Project:** LHAAP46 Febuary 2023
**Work Order:** HS23020265

## Work Order Comments

- Report Revised on June 14, 2023 to list the LOD results to match the EDD

The analysis for CO2 by RSK175 was subcontracted to Eurofins in Lancaster, PA. The final report is appended.

## GC Semivolatiles by Method RSK-175

### Batch ID: R428169

**Sample ID: 46WW02-230206 (HS23020265-04MS)**

- The recovery of the Matrix Spike (MS) and the Matrix Spike Duplicate (MSD) associated to these analytes were outside of the established control limits. However, the LCS was within control limits. The failed recovery of the MS/MSD may be due to sample matrix interference. Ethane

## GCMS Volatiles by Method SW8260

### Batch ID: R427850

**Sample ID: 46WW02-230206 (HS23020265-04MS)**

- MS/MSD failed QC and RPD limits due to matrix.

### Batch ID: R428010

**Sample ID: LHSMW21-230206 (HS23020265-01MS)**

- MSD failed QC limit for cis-1,2-Dichloroethene

## WetChemistry by Method SM5310B

### Batch ID: R428477

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

## WetChemistry by Method SW9056

### Batch ID: R427523,R427653

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

**ALS Houston, US** Date: 14-Jun-23

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP46 Febuary 2023
Sample ID: LHSMW21-230206
Collection Date: 06-Feb-2023 07:35

**ANALYTICAL REPORT**
WorkOrder:HS23020265
Lab ID:HS23020265-01
Matrix:GW

| ANALYSES | RESULT | QUAL | DL | LOD | LOQ | UNITS | DILUTION FACTOR | DATE ANALYZED |
|---|---|---|---|---|---|---|---|---|
| **VOLATILES ORGANICS BY METHOD 8260C** | | **Method:SW8260** | | | | | | Analyst: PC |
| **cis-1,2-Dichloroethene** | **200** | | **1.0** | **2.5** | **5.0** | **ug/L** | 5 | 14-Feb-2023 14:36 |
| **Trichloroethene** | **61** | | **0.20** | **0.50** | **1.0** | **ug/L** | 1 | 11-Feb-2023 15:03 |
| **Vinyl chloride** | **8.0** | | **0.20** | **0.50** | **1.0** | **ug/L** | 1 | 11-Feb-2023 15:03 |
| *Surr: 1,2-Dichloroethane-d4* | *99.6* | | | **0** | *81-118* | *%REC* | *1* | *11-Feb-2023 15:03* |
| *Surr: 1,2-Dichloroethane-d4* | *102* | | | **0** | *81-118* | *%REC* | *5* | *14-Feb-2023 14:36* |
| *Surr: 4-Bromofluorobenzene* | *109* | | | **0** | *85-114* | *%REC* | *1* | *11-Feb-2023 15:03* |
| *Surr: 4-Bromofluorobenzene* | *108* | | | **0** | *85-114* | *%REC* | *5* | *14-Feb-2023 14:36* |
| *Surr: Dibromofluoromethane* | *93.7* | | | **0** | *80-119* | *%REC* | *1* | *11-Feb-2023 15:03* |
| *Surr: Dibromofluoromethane* | *96.0* | | | **0** | *80-119* | *%REC* | *5* | *14-Feb-2023 14:36* |
| *Surr: Toluene-d8* | *106* | | | **0** | *89-112* | *%REC* | *1* | *11-Feb-2023 15:03* |
| *Surr: Toluene-d8* | *109* | | | **0** | *89-112* | *%REC* | *5* | *14-Feb-2023 14:36* |
| **DISSOLVED GASES BY RSK-175** | | **Method:RSK-175** | | | | | | Analyst: SAM |
| Ethane | 0.000500 | U | 0.000144 | 0.000500 | 0.00100 | mg/L | 1 | 09-Feb-2023 07:55 |
| Ethene | 0.000500 | U | 0.000234 | 0.000500 | 0.00100 | mg/L | 1 | 09-Feb-2023 07:55 |
| **Methane** | **0.00189** | | **0.000107** | **0.000500** | **0.000500** | **mg/L** | 1 | 09-Feb-2023 07:55 |
| **TOTAL ORGANIC CARBON - SM5310B-2011** | | **Method:SM5310B** | | | | | | Analyst: JAC |
| **Organic Carbon, Total** | **1.61** | | **0.500** | **1.00** | **1.00** | **mg/L** | 1 | 20-Feb-2023 14:49 |
| **ANIONS BY SW9056A** | | **Method:SW9056** | | | | | | Analyst: TH |
| **Chloride** | **92.4** | | **0.200** | **0.250** | **0.500** | **mg/L** | 1 | 07-Feb-2023 16:26 |
| Nitrogen, Nitrate (As N) | 0.0500 | U | 0.0300 | 0.0500 | 0.100 | mg/L | 1 | 07-Feb-2023 16:26 |
| **Sulfate** | **851** | | **4.00** | **5.00** | **10.0** | **mg/L** | 20 | 08-Feb-2023 10:37 |
| **SUBCONTRACT ANALYSIS - RSK** | | **Method:NA** | | | | | | Analyst: SUB |
| Subcontract Analysis | See Attached | | 0 | 0 | | NA | 1 | 14-Feb-2023 10:00 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

**ALS Houston, US** Date: 14-Jun-23

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP46 Febuary 2023
Sample ID: 46WW16-230206
Collection Date: 06-Feb-2023 08:20

**ANALYTICAL REPORT**
WorkOrder:HS23020265
Lab ID:HS23020265-02
Matrix:GW

| ANALYSES | RESULT | QUAL | DL | LOD | LOQ | UNITS | DILUTION FACTOR | DATE ANALYZED |
|---|---|---|---|---|---|---|---|---|
| **VOLATILES ORGANICS BY METHOD 8260C** | | **Method:SW8260** | | | | | | Analyst: PC |
| cis-1,2-Dichloroethene | 0.50 | U | 0.20 | 0.50 | 1.0 | ug/L | 1 | 11-Feb-2023 16:49 |
| Trichloroethene | 0.50 | U | 0.20 | 0.50 | 1.0 | ug/L | 1 | 11-Feb-2023 16:49 |
| Vinyl chloride | 0.50 | U | 0.20 | 0.50 | 1.0 | ug/L | 1 | 11-Feb-2023 16:49 |
| *Surr: 1,2-Dichloroethane-d4* | *101* | | | **0** | *81-118* | *%REC* | *1* | *11-Feb-2023 16:49* |
| *Surr: 4-Bromofluorobenzene* | *106* | | | **0** | *85-114* | *%REC* | *1* | *11-Feb-2023 16:49* |
| *Surr: Dibromofluoromethane* | *93.1* | | | **0** | *80-119* | *%REC* | *1* | *11-Feb-2023 16:49* |
| *Surr: Toluene-d8* | *107* | | | **0** | *89-112* | *%REC* | *1* | *11-Feb-2023 16:49* |
| **DISSOLVED GASES BY RSK-175** | | **Method:RSK-175** | | | | | | Analyst: SAM |
| Ethane | 0.000500 | U | 0.000144 | 0.000500 | 0.00100 | mg/L | 1 | 09-Feb-2023 08:05 |
| Ethene | 0.000500 | U | 0.000234 | 0.000500 | 0.00100 | mg/L | 1 | 09-Feb-2023 08:05 |
| **Methane** | **0.00658** | | **0.000107** | **0.000500** | **0.000500** | **mg/L** | 1 | 09-Feb-2023 08:05 |
| **TOTAL ORGANIC CARBON - SM5310B-2011** | | **Method:SM5310B** | | | | | | Analyst: JAC |
| **Organic Carbon, Total** | **5.96** | | **0.500** | **1.00** | **1.00** | **mg/L** | 1 | 20-Feb-2023 15:03 |
| **ANIONS BY SW9056A** | | **Method:SW9056** | | | | | | Analyst: TH |
| **Chloride** | **266** | | **2.00** | **2.50** | **5.00** | **mg/L** | 10 | 08-Feb-2023 10:43 |
| Nitrogen, Nitrate (As N) | 0.0500 | U | 0.0300 | 0.0500 | 0.100 | mg/L | 1 | 07-Feb-2023 16:31 |
| **Sulfate** | **569** | | **2.00** | **2.50** | **5.00** | **mg/L** | 10 | 08-Feb-2023 10:43 |
| **SUBCONTRACT ANALYSIS - RSK** | | **Method:NA** | | | | | | Analyst: SUB |
| Subcontract Analysis | See Attached | | 0 | 0 | | NA | 1 | 14-Feb-2023 10:00 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

**ALS Houston, US** Date: 14-Jun-23

Client: Aptim Environmental & Infrastucture, Inc. **ANALYTICAL REPORT**
Project: LHAAP46 Febuary 2023 WorkOrder:HS23020265
Sample ID: 46WW03-230206 Lab ID:HS23020265-03
Collection Date: 06-Feb-2023 09:15 Matrix:GW

| ANALYSES | RESULT | QUAL | DL | LOD | LOQ | UNITS | DILUTION FACTOR | DATE ANALYZED |
|---|---|---|---|---|---|---|---|---|
| **VOLATILES ORGANICS BY METHOD 8260C** | **Method:SW8260** | | | | | | | Analyst: PC |
| cis-1,2-Dichloroethene | 0.50 | U | 0.20 | 0.50 | 1.0 | ug/L | 1 | 11-Feb-2023 17:10 |
| Trichloroethene | 0.50 | U | 0.20 | 0.50 | 1.0 | ug/L | 1 | 11-Feb-2023 17:10 |
| Vinyl chloride | 0.50 | U | 0.20 | 0.50 | 1.0 | ug/L | 1 | 11-Feb-2023 17:10 |
| *Surr: 1,2-Dichloroethane-d4* | *101* | | | **0** | *81-118* | *%REC* | *1* | *11-Feb-2023 17:10* |
| *Surr: 4-Bromofluorobenzene* | *107* | | | **0** | *85-114* | *%REC* | *1* | *11-Feb-2023 17:10* |
| *Surr: Dibromofluoromethane* | *93.4* | | | **0** | *80-119* | *%REC* | *1* | *11-Feb-2023 17:10* |
| *Surr: Toluene-d8* | *107* | | | **0** | *89-112* | *%REC* | *1* | *11-Feb-2023 17:10* |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

**ALS Houston, US** Date: 14-Jun-23

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP46 Febuary 2023
Sample ID: 46WW02-230206
Collection Date: 06-Feb-2023 10:00

**ANALYTICAL REPORT**
WorkOrder:HS23020265
Lab ID:HS23020265-04
Matrix:GW

| ANALYSES | RESULT | QUAL | DL | LOD | LOQ | UNITS | DILUTION FACTOR | DATE ANALYZED |
|---|---|---|---|---|---|---|---|---|
| **VOLATILES ORGANICS BY METHOD 8260C** | | **Method:SW8260** | | | | | | Analyst: PC |
| **cis-1,2-Dichloroethene** | **1.8** | | **0.20** | **0.50** | **1.0** | **ug/L** | 1 | 11-Feb-2023 14:42 |
| **Trichloroethene** | **29** | | **0.20** | **0.50** | **1.0** | **ug/L** | 1 | 11-Feb-2023 14:42 |
| **Vinyl chloride** | **0.43** | J | **0.20** | **0.50** | **1.0** | **ug/L** | 1 | 11-Feb-2023 14:42 |
| *Surr: 1,2-Dichloroethane-d4* | *100* | | | **0** | *81-118* | *%REC* | *1* | *11-Feb-2023 14:42* |
| *Surr: 4-Bromofluorobenzene* | *108* | | | **0** | *85-114* | *%REC* | *1* | *11-Feb-2023 14:42* |
| *Surr: Dibromofluoromethane* | *93.8* | | | **0** | *80-119* | *%REC* | *1* | *11-Feb-2023 14:42* |
| *Surr: Toluene-d8* | *107* | | | **0** | *89-112* | *%REC* | *1* | *11-Feb-2023 14:42* |
| **DISSOLVED GASES BY RSK-175** | | **Method:RSK-175** | | | | | | Analyst: SAM |
| Ethane | 0.000500 | U | 0.000144 | 0.000500 | 0.00100 | mg/L | 1 | 09-Feb-2023 09:26 |
| Ethene | 0.000500 | U | 0.000234 | 0.000500 | 0.00100 | mg/L | 1 | 09-Feb-2023 09:26 |
| **Methane** | **0.00174** | | **0.000107** | **0.000500** | **0.000500** | **mg/L** | 1 | 09-Feb-2023 09:26 |
| **TOTAL ORGANIC CARBON - SM5310B-2011** | | **Method:SM5310B** | | | | | | Analyst: JAC |
| **Organic Carbon, Total** | **10.3** | | **0.500** | **1.00** | **1.00** | **mg/L** | 1 | 20-Feb-2023 15:17 |
| **ANIONS BY SW9056A** | | **Method:SW9056** | | | | | | Analyst: TH |
| **Chloride** | **54.4** | | **0.200** | **0.250** | **0.500** | **mg/L** | 1 | 07-Feb-2023 16:37 |
| Nitrogen, Nitrate (As N) | 0.0500 | U | 0.0300 | 0.0500 | 0.100 | mg/L | 1 | 07-Feb-2023 16:37 |
| **Sulfate** | **270** | | **2.00** | **2.50** | **5.00** | **mg/L** | 10 | 08-Feb-2023 10:49 |
| **SUBCONTRACT ANALYSIS - RSK** | | **Method:NA** | | | | | | Analyst: SUB |
| Subcontract Analysis | See Attached | | 0 | 0 | | NA | 1 | 14-Feb-2023 10:00 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

**ALS Houston, US** Date: 14-Jun-23

Client: Aptim Environmental & Infrastucture, Inc. **ANALYTICAL REPORT**
Project: LHAAP46 Febuary 2023 WorkOrder:HS23020265
Sample ID: 46WW07-230206 Lab ID:HS23020265-05
Collection Date: 06-Feb-2023 11:10 Matrix:GW

| ANALYSES | RESULT | QUAL | DL | LOD | LOQ | UNITS | DILUTION FACTOR | DATE ANALYZED |
|---|---|---|---|---|---|---|---|---|
| **VOLATILES ORGANICS BY METHOD 8260C** | **Method:SW8260** | | | | | | | Analyst: PC |
| cis-1,2-Dichloroethene | 0.50 | U | 0.20 | 0.50 | 1.0 | ug/L | 1 | 11-Feb-2023 17:31 |
| Trichloroethene | 0.50 | U | 0.20 | 0.50 | 1.0 | ug/L | 1 | 11-Feb-2023 17:31 |
| Vinyl chloride | 0.50 | U | 0.20 | 0.50 | 1.0 | ug/L | 1 | 11-Feb-2023 17:31 |
| *Surr: 1,2-Dichloroethane-d4* | *101* | | | **0** | *81-118* | *%REC* | *1* | *11-Feb-2023 17:31* |
| *Surr: 4-Bromofluorobenzene* | *107* | | | **0** | *85-114* | *%REC* | *1* | *11-Feb-2023 17:31* |
| *Surr: Dibromofluoromethane* | *93.2* | | | **0** | *80-119* | *%REC* | *1* | *11-Feb-2023 17:31* |
| *Surr: Toluene-d8* | *106* | | | **0** | *89-112* | *%REC* | *1* | *11-Feb-2023 17:31* |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

**ALS Houston, US** Date: 14-Jun-23

Client: Aptim Environmental & Infrastucture, Inc. **ANALYTICAL REPORT**
Project: LHAAP46 Febuary 2023 WorkOrder:HS23020265
Sample ID: 46WW14-230206 Lab ID:HS23020265-06
Collection Date: 06-Feb-2023 11:55 Matrix:GW

| ANALYSES | RESULT | QUAL | DL | LOD | LOQ | UNITS | DILUTION FACTOR | DATE ANALYZED |
|---|---|---|---|---|---|---|---|---|
| **VOLATILES ORGANICS BY METHOD 8260C** | **Method:SW8260** | | | | | | | Analyst: PC |
| cis-1,2-Dichloroethene | 0.50 | U | 0.20 | 0.50 | 1.0 | ug/L | 1 | 11-Feb-2023 17:52 |
| Trichloroethene | 0.50 | U | 0.20 | 0.50 | 1.0 | ug/L | 1 | 11-Feb-2023 17:52 |
| Vinyl chloride | 0.50 | U | 0.20 | 0.50 | 1.0 | ug/L | 1 | 11-Feb-2023 17:52 |
| *Surr: 1,2-Dichloroethane-d4* | *101* | | | **0** | *81-118* | *%REC* | *1* | *11-Feb-2023 17:52* |
| *Surr: 4-Bromofluorobenzene* | *107* | | | **0** | *85-114* | *%REC* | *1* | *11-Feb-2023 17:52* |
| *Surr: Dibromofluoromethane* | *93.9* | | | **0** | *80-119* | *%REC* | *1* | *11-Feb-2023 17:52* |
| *Surr: Toluene-d8* | *108* | | | **0** | *89-112* | *%REC* | *1* | *11-Feb-2023 17:52* |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

**ALS Houston, US** Date: 14-Jun-23

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP46 Febuary 2023
Sample ID: Trip Blank-230206
Collection Date: 06-Feb-2023 00:00

**ANALYTICAL REPORT**
WorkOrder:HS23020265
Lab ID:HS23020265-07
Matrix:Water

| ANALYSES | RESULT | QUAL | DL | LOD | LOQ | UNITS | DILUTION FACTOR | DATE ANALYZED |
|---|---|---|---|---|---|---|---|---|
| **VOLATILES ORGANICS BY METHOD 8260C** | **Method:SW8260** | | | | | | | Analyst: PC |
| cis-1,2-Dichloroethene | 0.50 | U | 0.20 | 0.50 | 1.0 | ug/L | 1 | 11-Feb-2023 14:21 |
| Trichloroethene | 0.50 | U | 0.20 | 0.50 | 1.0 | ug/L | 1 | 11-Feb-2023 14:21 |
| Vinyl chloride | 0.50 | U | 0.20 | 0.50 | 1.0 | ug/L | 1 | 11-Feb-2023 14:21 |
| *Surr: 1,2-Dichloroethane-d4* | *100* | | | **0** | *81-118* | *%REC* | *1* | *11-Feb-2023 14:21* |
| *Surr: 4-Bromofluorobenzene* | *109* | | | **0** | *85-114* | *%REC* | *1* | *11-Feb-2023 14:21* |
| *Surr: Dibromofluoromethane* | *93.5* | | | **0** | *80-119* | *%REC* | *1* | *11-Feb-2023 14:21* |
| *Surr: Toluene-d8* | *108* | | | **0** | *89-112* | *%REC* | *1* | *11-Feb-2023 14:21* |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

**ALS Houston, US** Date: 14-Jun-23

**Client:** Aptim Environmental & Infrastucture, Inc.
**Project:** LHAAP46 Febuary 2023
**WorkOrder:** HS23020265

**DATES REPORT**

| Sample ID | Client Samp ID | Collection Date | Leachate Date | Prep Date | Analysis Date | DF |
|---|---|---|---|---|---|---|
| **Batch ID:** R427523 ( 0 ) | **Test Name :** ANIONS BY SW9056A | | | | **Matrix:** GW | |
| HS23020265-01 | LHSMW21-230206 | 06 Feb 2023 07:35 | | | 07 Feb 2023 16:26 | 1 |
| HS23020265-02 | 46WW16-230206 | 06 Feb 2023 08:20 | | | 07 Feb 2023 16:31 | 1 |
| HS23020265-04 | 46WW02-230206 | 06 Feb 2023 10:00 | | | 07 Feb 2023 16:37 | 1 |
| **Batch ID:** R427653 ( 0 ) | **Test Name :** ANIONS BY SW9056A | | | | **Matrix:** GW | |
| HS23020265-01 | LHSMW21-230206 | 06 Feb 2023 07:35 | | | 08 Feb 2023 10:37 | 20 |
| HS23020265-02 | 46WW16-230206 | 06 Feb 2023 08:20 | | | 08 Feb 2023 10:43 | 10 |
| HS23020265-04 | 46WW02-230206 | 06 Feb 2023 10:00 | | | 08 Feb 2023 10:49 | 10 |
| **Batch ID:** R427850 ( 0 ) | **Test Name :** VOLATILES ORGANICS BY METHOD 8260C | | | | **Matrix:** Water | |
| HS23020265-07 | Trip Blank-230206 | 06 Feb 2023 00:00 | | | 11 Feb 2023 14:21 | 1 |
| **Batch ID:** R427850 ( 0 ) | **Test Name :** VOLATILES ORGANICS BY METHOD 8260C | | | | **Matrix:** GW | |
| HS23020265-01 | LHSMW21-230206 | 06 Feb 2023 07:35 | | | 11 Feb 2023 15:03 | 1 |
| HS23020265-02 | 46WW16-230206 | 06 Feb 2023 08:20 | | | 11 Feb 2023 16:49 | 1 |
| HS23020265-03 | 46WW03-230206 | 06 Feb 2023 09:15 | | | 11 Feb 2023 17:10 | 1 |
| HS23020265-04 | 46WW02-230206 | 06 Feb 2023 10:00 | | | 11 Feb 2023 14:42 | 1 |
| HS23020265-05 | 46WW07-230206 | 06 Feb 2023 11:10 | | | 11 Feb 2023 17:31 | 1 |
| HS23020265-06 | 46WW14-230206 | 06 Feb 2023 11:55 | | | 11 Feb 2023 17:52 | 1 |
| **Batch ID:** R427936 ( 0 ) | **Test Name :** SUBCONTRACT ANALYSIS - RSK | | | | **Matrix:** GW | |
| HS23020265-01 | LHSMW21-230206 | 06 Feb 2023 07:35 | | | 14 Feb 2023 10:00 | 1 |
| HS23020265-02 | 46WW16-230206 | 06 Feb 2023 08:20 | | | 14 Feb 2023 10:00 | 1 |
| HS23020265-04 | 46WW02-230206 | 06 Feb 2023 10:00 | | | 14 Feb 2023 10:00 | 1 |
| **Batch ID:** R428010 ( 0 ) | **Test Name :** VOLATILES ORGANICS BY METHOD 8260C | | | | **Matrix:** GW | |
| HS23020265-01 | LHSMW21-230206 | 06 Feb 2023 07:35 | | | 14 Feb 2023 14:36 | 5 |
| **Batch ID:** R428169 ( 0 ) | **Test Name :** DISSOLVED GASES BY RSK-175 | | | | **Matrix:** GW | |
| HS23020265-01 | LHSMW21-230206 | 06 Feb 2023 07:35 | | | 09 Feb 2023 07:55 | 1 |
| HS23020265-02 | 46WW16-230206 | 06 Feb 2023 08:20 | | | 09 Feb 2023 08:05 | 1 |
| HS23020265-04 | 46WW02-230206 | 06 Feb 2023 10:00 | | | 09 Feb 2023 09:26 | 1 |
| **Batch ID:** R428477 ( 0 ) | **Test Name :** TOTAL ORGANIC CARBON - SM5310B-2011 | | | | **Matrix:** GW | |
| HS23020265-01 | LHSMW21-230206 | 06 Feb 2023 07:35 | | | 20 Feb 2023 14:49 | 1 |
| HS23020265-02 | 46WW16-230206 | 06 Feb 2023 08:20 | | | 20 Feb 2023 15:03 | 1 |
| HS23020265-04 | 46WW02-230206 | 06 Feb 2023 10:00 | | | 20 Feb 2023 15:17 | 1 |

**ALS Houston, US** Date: 14-Jun-23

**Client:** Aptim Environmental & Infrastucture, Inc.
**Project:** LHAAP46 Febuary 2023
**WorkOrder:** HS23020265

**QC BATCH REPORT**

**Batch ID:** R428169 ( 0 ) **Instrument:** FID-4 **Method:** DISSOLVED GASES BY RSK-175

**MBLK** Sample ID: **MBLK-230209** Units: **mg/L** Analysis Date: **09-Feb-2023 07:36**
Client ID: Run ID: **FID-4_428169** SeqNo: **7132771** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Ethane | 0.000500 | 0.00100 | | | | | | | | U |
| Ethene | 0.000500 | 0.00100 | | | | | | | | U |
| Methane | 0.000500 | 0.000500 | | | | | | | | U |

**LCS** Sample ID: **LCS-230209** Units: **mg/L** Analysis Date: **09-Feb-2023 07:44**
Client ID: Run ID: **FID-4_428169** SeqNo: **7132772** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Ethane | 0.0205 | 0.00100 | 0.01804 | 0 | 113 | 75 - 125 | | | | |
| Ethene | 0.0175 | 0.00100 | 0.0168 | 0 | 104 | 75 - 125 | | | | |
| Methane | 0.00879 | 0.000500 | 0.009647 | 0 | 91.1 | 75 - 125 | | | | |

**MS** Sample ID: **HS23020265-04MS** Units: **mg/L** Analysis Date: **09-Feb-2023 10:07**
Client ID: **46WW02-230206** Run ID: **FID-4_428169** SeqNo: **7132776** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Ethane | 0.0242 | 0.00100 | 0.01804 | 0 | 134 | 75 - 125 | | | | S |
| Ethene | 0.0209 | 0.00100 | 0.0168 | 0 | 124 | 75 - 125 | | | | |
| Methane | 0.0106 | 0.000500 | 0.009647 | 0.001740 | 92.0 | 75 - 125 | | | | |

**MSD** Sample ID: **HS23020265-04MSD** Units: **mg/L** Analysis Date: **09-Feb-2023 10:16**
Client ID: **46WW02-230206** Run ID: **FID-4_428169** SeqNo: **7132777** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Ethane | 0.0244 | 0.00100 | 0.01804 | 0 | 136 | 75 - 125 | 0.02420 | 1.03 | 30 | S |
| Ethene | 0.0210 | 0.00100 | 0.0168 | 0 | 125 | 75 - 125 | 0.02089 | 0.391 | 30 | |
| Methane | 0.0107 | 0.000500 | 0.009647 | 0.001740 | 93.2 | 75 - 125 | 0.01061 | 1.11 | 30 | |

**The following samples were analyzed in this batch:** HS23020265-01 HS23020265-02 HS23020265-04

**ALS Houston, US** Date: 14-Jun-23

**Client:** Aptim Environmental & Infrastucture, Inc.
**Project:** LHAAP46 Febuary 2023
**WorkOrder:** HS23020265

**QC BATCH REPORT**

**Batch ID: R427850 ( 0 )** **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

**MBLK** Sample ID: **VBLKW-230211** Units: **ug/L** Analysis Date: **11-Feb-2023 14:00**
Client ID: Run ID: **VOA6_427850** SeqNo: **7120406** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| cis-1,2-Dichloroethene | 0.50 | 1.0 | | | | | | | | U |
| Trichloroethene | 0.50 | 1.0 | | | | | | | | U |
| Vinyl chloride | 0.50 | 1.0 | | | | | | | | U |
| *Surr: 1,2-Dichloroethane-d4* | *50.07* | *1.0* | *50* | *0* | *100* | *81 - 118* | | | | |
| *Surr: 4-Bromofluorobenzene* | *53.56* | *1.0* | *50* | *0* | *107* | *85 - 114* | | | | |
| *Surr: Dibromofluoromethane* | *47.35* | *1.0* | *50* | *0* | *94.7* | *80 - 119* | | | | |
| *Surr: Toluene-d8* | *53.07* | *1.0* | *50* | *0* | *106* | *89 - 112* | | | | |

**LCS** Sample ID: **VLCSW-230211** Units: **ug/L** Analysis Date: **11-Feb-2023 13:18**
Client ID: Run ID: **VOA6_427850** SeqNo: **7120405** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| cis-1,2-Dichloroethene | 18.49 | 1.0 | 20 | 0 | 92.4 | 78 - 123 | | | | |
| Trichloroethene | 18.29 | 1.0 | 20 | 0 | 91.4 | 79 - 123 | | | | |
| Vinyl chloride | 18.95 | 1.0 | 20 | 0 | 94.7 | 58 - 137 | | | | |
| *Surr: 1,2-Dichloroethane-d4* | *54.8* | *1.0* | *50* | *0* | *110* | *81 - 118* | | | | |
| *Surr: 4-Bromofluorobenzene* | *54.39* | *1.0* | *50* | *0* | *109* | *85 - 114* | | | | |
| *Surr: Dibromofluoromethane* | *49.85* | *1.0* | *50* | *0* | *99.7* | *80 - 119* | | | | |
| *Surr: Toluene-d8* | *50.95* | *1.0* | *50* | *0* | *102* | *89 - 112* | | | | |

**MS** Sample ID: **HS23020265-04MS** Units: **ug/L** Analysis Date: **11-Feb-2023 15:24**
Client ID: **46WW02-230206** Run ID: **VOA6_427850** SeqNo: **7120410** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| cis-1,2-Dichloroethene | 17.38 | 1.0 | 20 | 1.768 | 78.0 | 78 - 123 | | | | |
| Trichloroethene | 44.84 | 1.0 | 20 | 28.68 | 80.8 | 79 - 123 | | | | |
| Vinyl chloride | 11.53 | 1.0 | 20 | 0.4346 | 55.5 | 58 - 137 | | | | S |
| *Surr: 1,2-Dichloroethane-d4* | *50.33* | *1.0* | *50* | *0* | *101* | *81 - 118* | | | | |
| *Surr: 4-Bromofluorobenzene* | *54.23* | *1.0* | *50* | *0* | *108* | *85 - 114* | | | | |
| *Surr: Dibromofluoromethane* | *46.11* | *1.0* | *50* | *0* | *92.2* | *80 - 119* | | | | |
| *Surr: Toluene-d8* | *53.66* | *1.0* | *50* | *0* | *107* | *89 - 112* | | | | |

**ALS Houston, US** Date: 14-Jun-23

**Client:** Aptim Environmental & Infrastucture, Inc.
**Project:** LHAAP46 Febuary 2023
**WorkOrder:** HS23020265

**QC BATCH REPORT**

**Batch ID:** R427850 ( 0 ) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

**MSD** Sample ID: **HS23020265-04MSD** Units: **ug/L** Analysis Date: **11-Feb-2023 15:45**
Client ID: **46WW02-230206** Run ID: **VOA6_427850** SeqNo: **7120411** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| cis-1,2-Dichloroethene | 22.7 | 1.0 | 20 | 1.768 | 105 | 78 - 123 | 17.38 | 26.6 | 20 | R |
| Trichloroethene | 48.93 | 1.0 | 20 | 28.68 | 101 | 79 - 123 | 44.84 | 8.73 | 20 | |
| Vinyl chloride | 14.19 | 1.0 | 20 | 0.4346 | 68.8 | 58 - 137 | 11.53 | 20.7 | 20 | R |
| *Surr: 1,2-Dichloroethane-d4* | *50.69* | *1.0* | *50* | *0* | *101* | *81 - 118* | *50.33* | *0.716* | *20* | |
| *Surr: 4-Bromofluorobenzene* | *53.66* | *1.0* | *50* | *0* | *107* | *85 - 114* | *54.23* | *1.07* | *20* | |
| *Surr: Dibromofluoromethane* | *45.8* | *1.0* | *50* | *0* | *91.6* | *80 - 119* | *46.11* | *0.677* | *20* | |
| *Surr: Toluene-d8* | *53.17* | *1.0* | *50* | *0* | *106* | *89 - 112* | *53.66* | *0.914* | *20* | |

**The following samples were analyzed in this batch:** HS23020265-01 HS23020265-02 HS23020265-03 HS23020265-04 HS23020265-05 HS23020265-06 HS23020265-07

**ALS Houston, US** Date: 14-Jun-23

**Client:** Aptim Environmental & Infrastucture, Inc.
**Project:** LHAAP46 Febuary 2023
**WorkOrder:** HS23020265

**QC BATCH REPORT**

**Batch ID: R428010 ( 0 )** **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

**MBLK** Sample ID: **VBLKW-230214** Units: **ug/L** Analysis Date: **14-Feb-2023 12:30**
Client ID: Run ID: **VOA6_428010** SeqNo: **7123872** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| cis-1,2-Dichloroethene | 0.50 | 1.0 | | | | | | | | U |
| *Surr: 1,2-Dichloroethane-d4* | *50.66* | *1.0* | *50* | *0* | *101* | *81 - 118* | | | | |
| *Surr: 4-Bromofluorobenzene* | *53.44* | *1.0* | *50* | *0* | *107* | *85 - 114* | | | | |
| *Surr: Dibromofluoromethane* | *47.51* | *1.0* | *50* | *0* | *95.0* | *80 - 119* | | | | |
| *Surr: Toluene-d8* | *53.79* | *1.0* | *50* | *0* | *108* | *89 - 112* | | | | |

**LCS** Sample ID: **VLCSW-230214** Units: **ug/L** Analysis Date: **14-Feb-2023 11:48**
Client ID: Run ID: **VOA6_428010** SeqNo: **7123871** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| cis-1,2-Dichloroethene | 19.38 | 1.0 | 20 | 0 | 96.9 | 78 - 123 | | | | |
| *Surr: 1,2-Dichloroethane-d4* | *56.68* | *1.0* | *50* | *0* | *113* | *81 - 118* | | | | |
| *Surr: 4-Bromofluorobenzene* | *54.26* | *1.0* | *50* | *0* | *109* | *85 - 114* | | | | |
| *Surr: Dibromofluoromethane* | *50.25* | *1.0* | *50* | *0* | *100* | *80 - 119* | | | | |
| *Surr: Toluene-d8* | *51.35* | *1.0* | *50* | *0* | *103* | *89 - 112* | | | | |

**MS** Sample ID: **HS23020265-01MS** Units: **ug/L** Analysis Date: **14-Feb-2023 16:01**
Client ID: **LHSMW21-230206** Run ID: **VOA6_428010** SeqNo: **7123882** PrepDate: DF: **5**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| cis-1,2-Dichloroethene | 282.8 | 5.0 | 100 | 195.5 | 87.3 | 78 - 123 | | | | |
| *Surr: 1,2-Dichloroethane-d4* | *255* | *5.0* | *250* | *0* | *102* | *81 - 118* | | | | |
| *Surr: 4-Bromofluorobenzene* | *266.4* | *5.0* | *250* | *0* | *107* | *85 - 114* | | | | |
| *Surr: Dibromofluoromethane* | *234.3* | *5.0* | *250* | *0* | *93.7* | *80 - 119* | | | | |
| *Surr: Toluene-d8* | *272.6* | *5.0* | *250* | *0* | *109* | *89 - 112* | | | | |

**ALS Houston, US** Date: 14-Jun-23

**Client:** Aptim Environmental & Infrastucture, Inc.
**Project:** LHAAP46 Febuary 2023
**WorkOrder:** HS23020265

**QC BATCH REPORT**

**Batch ID:** R428010 ( 0 ) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

**MSD** Sample ID: **HS23020265-01MSD** Units: **ug/L** Analysis Date: **14-Feb-2023 16:22**
Client ID: **LHSMW21-230206** Run ID: **VOA6_428010** SeqNo: **7123883** PrepDate: DF: **5**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| cis-1,2-Dichloroethene | 270.2 | 5.0 | 100 | 195.5 | 74.7 | 78 - 123 | 282.8 | 4.55 | 20 | S |
| *Surr: 1,2-Dichloroethane-d4* | *243.2* | *5.0* | *250* | *0* | *97.3* | *81 - 118* | *255* | *4.75* | *20* | |
| *Surr: 4-Bromofluorobenzene* | *270.3* | *5.0* | *250* | *0* | *108* | *85 - 114* | *266.4* | *1.45* | *20* | |
| *Surr: Dibromofluoromethane* | *230.5* | *5.0* | *250* | *0* | *92.2* | *80 - 119* | *234.3* | *1.66* | *20* | |
| *Surr: Toluene-d8* | *266.9* | *5.0* | *250* | *0* | *107* | *89 - 112* | *272.6* | *2.1* | *20* | |

**The following samples were analyzed in this batch:** HS23020265-01

**ALS Houston, US** Date: 14-Jun-23

**Client:** Aptim Environmental & Infrastucture, Inc.
**Project:** LHAAP46 Febuary 2023
**WorkOrder:** HS23020265

**QC BATCH REPORT**

**Batch ID: R427523 ( 0 )** **Instrument: ICS-Integrion** **Method: ANIONS BY SW9056A**

**MBLK** Sample ID: **MBLK** Units: **mg/L** Analysis Date: **07-Feb-2023 16:08**
Client ID: Run ID: **ICS-Integrion_427523** SeqNo: **7113148** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 0.250 | 0.500 | | | | | | | | U |
| Nitrogen, Nitrate (As N) | 0.0500 | 0.100 | | | | | | | | U |

**LCS** Sample ID: **LCS** Units: **mg/L** Analysis Date: **07-Feb-2023 16:20**
Client ID: Run ID: **ICS-Integrion_427523** SeqNo: **7113149** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 21.9 | 0.500 | 20 | 0 | 109 | 80 - 120 | | | | |
| Nitrogen, Nitrate (As N) | 4.272 | 0.100 | 4 | 0 | 107 | 80 - 120 | | | | |

**MS** Sample ID: **HS23020265-04MS** Units: **mg/L** Analysis Date: **07-Feb-2023 16:43**
Client ID: **46WW02-230206** Run ID: **ICS-Integrion_427523** SeqNo: **7113153** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 62.66 | 0.500 | 10 | 54.38 | 82.9 | 80 - 120 | | | | O |
| Nitrogen, Nitrate (As N) | 2.147 | 0.100 | 2 | 0 | 107 | 80 - 120 | | | | |

**MSD** Sample ID: **HS23020265-04MSD** Units: **mg/L** Analysis Date: **07-Feb-2023 16:49**
Client ID: **46WW02-230206** Run ID: **ICS-Integrion_427523** SeqNo: **7113154** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 62.43 | 0.500 | 10 | 54.38 | 80.5 | 80 - 120 | 62.66 | 0.379 | 20 | O |
| Nitrogen, Nitrate (As N) | 2.145 | 0.100 | 2 | 0 | 107 | 80 - 120 | 2.147 | 0.0746 | 20 | |

**The following samples were analyzed in this batch:** HS23020265-01 HS23020265-02 HS23020265-04

**ALS Houston, US** Date: 14-Jun-23

**Client:** Aptim Environmental & Infrastucture, Inc.
**Project:** LHAAP46 Febuary 2023
**WorkOrder:** HS23020265

**QC BATCH REPORT**

**Batch ID: R427653 ( 0 )** **Instrument: ICS-Integrion** **Method: ANIONS BY SW9056A**

**MBLK** Sample ID: **MBLK** Units: **mg/L** Analysis Date: **08-Feb-2023 10:20**
Client ID: Run ID: **ICS-Integrion_427653** SeqNo: **7115876** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 0.250 | 0.500 | | | | | | | | U |
| Sulfate | 0.250 | 0.500 | | | | | | | | U |

**LCS** Sample ID: **LCS** Units: **mg/L** Analysis Date: **08-Feb-2023 10:26**
Client ID: Run ID: **ICS-Integrion_427653** SeqNo: **7115877** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 20.93 | 0.500 | 20 | 0 | 105 | 80 - 120 | | | | |
| Sulfate | 21.85 | 0.500 | 20 | 0 | 109 | 80 - 120 | | | | |

**MS** Sample ID: **HS23020265-04MS** Units: **mg/L** Analysis Date: **08-Feb-2023 10:55**
Client ID: **46WW02-230206** Run ID: **ICS-Integrion_427653** SeqNo: **7115881** PrepDate: DF: **10**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 150.5 | 5.00 | 100 | 50.3 | 100 | 80 - 120 | | | | |
| Sulfate | 356.4 | 5.00 | 100 | 269.5 | 86.9 | 80 - 120 | | | | |

**MSD** Sample ID: **HS23020265-04MSD** Units: **mg/L** Analysis Date: **08-Feb-2023 11:00**
Client ID: **46WW02-230206** Run ID: **ICS-Integrion_427653** SeqNo: **7115882** PrepDate: DF: **10**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 153.3 | 5.00 | 100 | 50.3 | 103 | 80 - 120 | 150.5 | 1.84 | 20 | |
| Sulfate | 362.6 | 5.00 | 100 | 269.5 | 93.1 | 80 - 120 | 356.4 | 1.72 | 20 | |

**The following samples were analyzed in this batch:** HS23020265-01 HS23020265-02 HS23020265-04

**ALS Houston, US** Date: 14-Jun-23

**Client:** Aptim Environmental & Infrastucture, Inc.
**Project:** LHAAP46 Febuary 2023
**WorkOrder:** HS23020265

**QC BATCH REPORT**

**Batch ID:** R428477 ( 0 ) **Instrument:** TOC_05 **Method:** TOTAL ORGANIC CARBON - SM5310B-2011

**MBLK** Sample ID: **MBLK-02142023** Units: **mg/L** Analysis Date: **20-Feb-2023 13:26**
Client ID: Run ID: **TOC_05_428477** SeqNo: **7138315** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Organic Carbon, Total | 1.00 | 1.00 | | | | | | | | U |

**LCS** Sample ID: **LCS-02142023** Units: **mg/L** Analysis Date: **20-Feb-2023 13:41**
Client ID: Run ID: **TOC_05_428477** SeqNo: **7138316** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Organic Carbon, Total | 11.42 | 1.00 | 10 | 0 | 114 | 85 - 115 | | | | |

**LCSD** Sample ID: **LCSD-02142023** Units: **mg/L** Analysis Date: **20-Feb-2023 13:55**
Client ID: Run ID: **TOC_05_428477** SeqNo: **7138317** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Organic Carbon, Total | 11.48 | 1.00 | 10 | 0 | 115 | 85 - 115 | 11.42 | 0.524 | 20 | |

**MS** Sample ID: **HS23020265-04MS** Units: **mg/L** Analysis Date: **20-Feb-2023 15:32**
Client ID: **46WW02-230206** Run ID: **TOC_05_428477** SeqNo: **7138324** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Organic Carbon, Total | 20.74 | 1.00 | 10 | 10.31 | 104 | 80 - 120 | | | | |

**The following samples were analyzed in this batch:** HS23020265-01 HS23020265-02 HS23020265-04

**ALS Houston, US** Date: 14-Jun-23

**Client:** Aptim Environmental & Infrastucture, Inc.
**Project:** LHAAP46 Febuary 2023
**WorkOrder:** **HS23020265**

**QUALIFIERS, ACRONYMS, UNITS**

| Qualifier | Description |
|---|---|
| * | Value exceeds Regulatory Limit |
| a | Not accredited |
| B | Analyte detected in the associated Method Blank above the Reporting Limit |
| E | Value above quantitation range |
| H | Analyzed outside of Holding Time |
| J | Analyte detected below quantitation limit |
| M | Manually integrated, see raw data for justification |
| n | Not offered for accreditation |
| ND | Not Detected at the Reporting Limit |
| O | Sample amount is > 4 times amount spiked |
| P | Dual Column results percent difference > 40% |
| R | RPD above laboratory control limit |
| S | Spike Recovery outside laboratory control limits |
| U | Analyzed but not detected above the MDL/SDL |

| Acronym | Description |
|---|---|
| DCS | Detectability Check Study |
| DUP | Method Duplicate |
| LCS | Laboratory Control Sample |
| LCSD | Laboratory Control Sample Duplicate |
| MBLK | Method Blank |
| MDL | Method Detection Limit |
| MQL | Method Quantitation Limit |
| MS | Matrix Spike |
| MSD | Matrix Spike Duplicate |
| PDS | Post Digestion Spike |
| PQL | Practical Quantitaion Limit |
| SD | Serial Dilution |
| SDL | Sample Detection Limit |
| TRRP | Texas Risk Reduction Program |

| Unit Reported | Description |
|---|---|
| mg/L | Milligrams per Liter |

## CERTIFICATIONS,ACCREDITATIONS & LICENSES

| Agency | Number | Expire Date |
|---|---|---|
| Arkansas | 88-00356 | 27-Mar-2024 |
| Dept of Defense | L23-358 | 31-May-2025 |
| Florida | E87611-37 | 30-Jun-2023 |
| Kansas | E-10352; 2022-2023 | 31-Jul-2023 |
| Louisiana | 03087, 2022-2023 | 30-Jun-2023 |
| Maryland | 343, 2022-2023 | 30-Jun-2023 |
| North Carolina | 624-2023 | 31-Dec-2023 |
| Oklahoma | 2022-141 | 31-Aug-2023 |
| Texas | T104704231-23-31 | 30-Apr-2024 |
| Utah | TX026932022-13 | 31-Jul-2023 |

**ALS Houston, US** Date: 14-Jun-23

## Sample Receipt Checklist

**Work Order ID:** HS23020265 **Date/Time Received:** **07-Feb-2023 11:00**

**Client Name:** CBI-Houston **Received by:** **Nilesh D. Ranchod**

| **Completed By:** | /S/ Nilesh D. Ranchod | 07-Feb-2023 12:04 | **Reviewed by:** | /S/ Dane J. Wacasey | 14-Feb-2023 17:35 |
|---|---|---|---|---|---|
| | eSignature | Date/Time | | eSignature | Date/Time |

Matrices: **WATER** Carrier name: **FedEx**

| | | | |
|---|---|---|---|
| Shipping container/cooler in good condition? | Yes ☑ | No ☐ | Not Present ☐ |
| Custody seals intact on shipping container/cooler? | Yes ☑ | No ☐ | Not Present ☐ |
| Custody seals intact on sample bottles? | Yes ☐ | No ☐ | Not Present ☑ |
| VOA/TX1005/TX1006 Solids in hermetically sealed vials? | Yes ☐ | No ☐ | Not Present ☑ |
| Chain of custody present? | Yes ☑ | No ☐ | 2 Page(s) |
| Chain of custody signed when relinquished and received? | Yes ☑ | No ☐ | |
| Samplers name present on COC? | Yes ☑ | No ☐ | |
| Chain of custody agrees with sample labels? | Yes ☑ | No ☐ | |
| Samples in proper container/bottle? | Yes ☑ | No ☐ | |
| Sample containers intact? | Yes ☑ | No ☐ | |
| Sufficient sample volume for indicated test? | Yes ☑ | No ☐ | |
| All samples received within holding time? | Yes ☑ | No ☐ | |
| Container/Temp Blank temperature in compliance? | Yes ☑ | No ☐ | |

| | | |
|---|---|---|
| Temperature(s)/Thermometer(s): | 0.9C/0.4C UC/C | IR 31 |
| Cooler(s)/Kit(s): | 49090 | |
| Date/Time sample(s) sent to storage: | 02/07/2023 12:15 | |

| | | | |
|---|---|---|---|
| Water - VOA vials have zero headspace? | Yes ☑ | No ☐ | No VOA vials submitted ☐ |
| Water - pH acceptable upon receipt? | Yes ☑ | No ☐ | N/A ☐ |
| pH adjusted? | Yes ☐ | No ☑ | N/A ☐ |
| pH adjusted by: | | | |

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

Corrective Action:

# CHAIN OF CUSTODY

Name Of Lab Shipping To: ALS 10450 Stancliff Rd. Suite 210 Houston, TX. 77099 (281) 575-2190 ATTN: Dane Wacasey



Project: APTIM LONGHORN
ARMY AMMN. PLANT (LHAAP)
GROUNDWATER TREATMENT PLANT (GWTP)
KARNACK, TEXAS

Project No. 501032

Job: **LHAAP46 February 2023**

Prepared By: Scott Beesinger

P.O. Number

| Field Sample I.D. | Sample Matrix | Date / Time | MS / MSD | No. OF CONTAINERS | VOC by SW 8260B | TOC by SM5310C | MEE by RSK 175 | Anions (chloride sulfate, nitrate) by SW9056 | CO2 by RSK 175 | Remarks (Preservatives, etc.) |
|---|---|---|---|---|---|---|---|---|---|---|
| LHSmw21-230206 | wg | 2/6/23 0735 | | 12 | X | X | X | X | X | |
| 46wwl6-230206 | wg | 2/6/23 0820 | | 12 | X | X | X | X | X | |
| 46wwl03-230206 | wg | 2/6/23 0915 | | 3 | X | | | | | |
| 46wwl02-230206 | wg | 2/6/23 1000 | | 12 | X | X | X | X | X | |
| 46wwl02-230206-ms | wg | 2/6/23 1000 | | 12 | X | X | X | X | X | |
| 46wwl02-230206-msD | wg | 2/6/23 1000 | | 12 | X | X | X | X | X | |
| 46wwl07-230206 | wg | 2/6/23 1110 | | 3 | X | | | | | |
| 46wwl4-230206 | wg | 2/6/23 1155 | | 3 | X | | | | | |

Analyses

Additional Remarks: **Standard TAT on all parameters. Please email results to Vicki.Graves@aptim.com and invoices to fedinvoices@aptim.com**

| Relinquished By: | Date | Time | Received By: | Date | Time | Relinquished By: | Date | Time | Received By: | Date | Time |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Scott Beesinger | 2/6/23 | 1330 | NC | 2/7/23 | 11:20 | | | | | | |

For Lab Use Only

| Received At Lab By: | Date | Time | Airbill No. | Opened By: | Date | Time | Temp of Container | Seal No. | Condition |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |

Remarks:

49090 WC 0.9

Aptim Environmental & Infrastucture, Inc.
LHAAP46 Febuary 2023

HS23020265

# CHAIN OF CUSTODY

Name Of Lab Shipping To: ALS 10450 Stancliff Rd. Suite 210 Houston, TX, 77099 (281) 575-2190 ATTN: Dane Wacasey



**Project:** APTIM LONGHORN
ARMY AMMN. PLANT (LHAAP)
GROUNDWATER TREATMENT PLANT (GWTP)
KARNACK, TEXAS

**Project No.** 501032

**Job:** LHAAP46 February 2023

**Prepared By:** Scott Beesinger

**P.O. Number**

| Field Sample I.D. | Sample Matrix | Date / Time | MS / MSD | No. OF CONTAINERS | Analyses: VOC by SW 8260B | TOC by SM5310C | MEE by RSK 175 | Anions (chloride sulfate, nitrate) by SW9056 | CO2 by RSK 175 | | | | | | Remarks (Preservatives, etc.) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TRIP BLANK-230206 | W | 2/6/23 | | 2 | X | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |

Additional Remarks: **Standard TAT on all parameters. Please email results to Vicki.Graves@aptim.com and invoices to fedinvoices@aptim.com**

| Relinquished By: | Date | Time | Received By: | Date | Time | Relinquished By: | Date | Time | Received By: | Date | Time |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Scott Beesinger | 2/6/23 | 1330 | N/A | 2/7/23 | 1110 | | | | | | |

**For Lab Use Only**

| Received At Lab By: | Date | Time | Airbill No. | Opened By: | Date | Time | Temp of Container | Seal No. | Condition |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |

Remarks:

Aptim Environmental & Infrastucture, Inc.
LHAAP46 Febuary 2023

HS2302026S

(Word) S:\1-ces\Forms\Chain of Custody - BiWeekly

ALS
10450 Stancliff Rd., Suite 210
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5887

ua090

**CUSTODY SEAL**

Date: 2/6/23 Time: 1330
Name: Scott Beesinger
Company: BHATS

Seal Broken By: slm
Date: 02/07/23

ua090 FEB 07 2023

ua090

ORIGIN ID:SGRA (903) 930-8193
ATT: SCOTT BEESINGER
APTIM ENVIRONMENTAL & INFRAST. INC
1203-B EAST GRAND AVE PMB202

MARSHALL, TX 75670
UNITED STATES US

SHIP DATE: 31JAN23
ACTWGT: 1.00 LB MAN
CAD: 0221247/CAFE3616
DIMS: 19x16x13 IN

TO SHIPPING DEPT
ALS LABORATORY GROUP
10450 STANCLIFF RD
SUITE 210
HOUSTON TX 77099
(281) 530-5868
REF: LHAAP-46-90619-DW

RMA:

FedEx Express

FedEx 0221 8230 2994 7823

PRIORITY OVERNIGHT

AB SGRA

77099
TX-US
IAH

4238674 0GFeb2023 GGGA 581G1/B8B7/C49B

eurofins | Environment Testing

# ANALYTICAL REPORT

## PREPARED FOR

Attn: Dane Wacasey
ALS Group USA, Corp
10450 Stancliff Rd.
Suite 210
Houston, Texas 77099

Generated 2/10/2023 11:32:34 AM

## JOB DESCRIPTION

HS23020265

## JOB NUMBER

410-114929-1

Eurofins Lancaster Laboratories Environment Testing, LLC
2425 New Holland Pike
Lancaster PA 17601

See page two for job notes and contact information.



my EOL

# Eurofins Lancaster Laboratories Environment Testing, LLC



## Job Notes

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

## Authorization



Generated
2/10/2023 11:32:34 AM

Authorized for release by
Kelly Bauer, Project Manager
Kelly.Bauer@et.eurofinsus.com
(717)556-7262

# Eurofins Lancaster Laboratories Environment Testing, LLC

## Compliance Statement

Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.
· QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
· Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
· Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

This report shall not be reproduced except in full, without the written approval of the laboratory.

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# Definitions/Glossary

Client: ALS Group USA, Corp
Project/Site: HS23020265

Job ID: 410-114929-1

## Qualifiers

### GC VOA

| Qualifier | Qualifier Description |
|---|---|
| J1 | Estimated: The quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria. |
| M | Manual integrated compound. |
| U | Undetected at the Limit of Detection. |

## Glossary

| Abbreviation | These commonly used abbreviations may or may not be present in this report. |
|---|---|
| ¤ | Listed under the "D" column to designate that the result is reported on a dry weight basis |
| %R | Percent Recovery |
| CFL | Contains Free Liquid |
| CFU | Colony Forming Unit |
| CNF | Contains No Free Liquid |
| DER | Duplicate Error Ratio (normalized absolute difference) |
| Dil Fac | Dilution Factor |
| DL | Detection Limit (DoD/DOE) |
| DL, RA, RE, IN | Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample |
| DLC | Decision Level Concentration (Radiochemistry) |
| EDL | Estimated Detection Limit (Dioxin) |
| LOD | Limit of Detection (DoD/DOE) |
| LOQ | Limit of Quantitation (DoD/DOE) |
| MCL | EPA recommended "Maximum Contaminant Level" |
| MDA | Minimum Detectable Activity (Radiochemistry) |
| MDC | Minimum Detectable Concentration (Radiochemistry) |
| MDL | Method Detection Limit |
| ML | Minimum Level (Dioxin) |
| MPN | Most Probable Number |
| MQL | Method Quantitation Limit |
| NC | Not Calculated |
| ND | Not Detected at the reporting limit (or MDL or EDL if shown) |
| NEG | Negative / Absent |
| POS | Positive / Present |
| PQL | Practical Quantitation Limit |
| PRES | Presumptive |
| QC | Quality Control |
| RER | Relative Error Ratio (Radiochemistry) |
| RL | Reporting Limit or Requested Limit (Radiochemistry) |
| RPD | Relative Percent Difference, a measure of the relative difference between two points |
| TEF | Toxicity Equivalent Factor (Dioxin) |
| TEQ | Toxicity Equivalent Quotient (Dioxin) |
| TNTC | Too Numerous To Count |

# Case Narrative

Client: ALS Group USA, Corp
Project/Site: HS23020265

Job ID: 410-114929-1

## Job ID: 410-114929-1

**Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC**

**Narrative**

**Job Narrative**
**410-114929-1**

**Receipt**

The samples were received on 2/9/2023 10:25 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 2.7°C

**GC VOA**

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

# Detection Summary

Client: ALS Group USA, Corp
Project/Site: HS23020265

Job ID: 410-114929-1

## Client Sample ID: HS23020265-01 — Lab Sample ID: 410-114929-1

| Analyte | Result | Qualifier | LOQ | DL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| Carbon dioxide | 46000 | | 12000 | 2600 | ug/L | 1 | | RSK-175 | Total/NA |

## Client Sample ID: HS23020265-02 — Lab Sample ID: 410-114929-2

No Detections.

## Client Sample ID: HS23020265-04 — Lab Sample ID: 410-114929-3

| Analyte | Result | Qualifier | LOQ | DL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| Carbon dioxide | 90000 | J1 | 12000 | 2600 | ug/L | 1 | | RSK-175 | Total/NA |

This Detection Summary does not include radiochemical test results.

# Client Sample Results

Client: ALS Group USA, Corp
Project/Site: HS23020265

Job ID: 410-114929-1

## Client Sample ID: HS23020265-01

**Lab Sample ID: 410-114929-1**

**Date Collected: 02/06/23 07:35**
**Matrix: Water**
**Date Received: 02/09/23 10:25**

**Method: RSK-175 - Dissolved Gases (GC)**

| Analyte | Result | Qualifier | LOQ | DL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Carbon dioxide** | **46000** | | 12000 | 2600 | ug/L | | 02/10/23 08:21 | 02/10/23 09:41 | 1 |

## Client Sample ID: HS23020265-02

**Lab Sample ID: 410-114929-2**

**Date Collected: 02/06/23 08:20**
**Matrix: Water**
**Date Received: 02/09/23 10:25**

**Method: RSK-175 - Dissolved Gases (GC)**

| Analyte | Result | Qualifier | LOQ | DL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Carbon dioxide | 2600 | U | 12000 | 2600 | ug/L | | 02/10/23 08:21 | 02/10/23 09:48 | 1 |

## Client Sample ID: HS23020265-04

**Lab Sample ID: 410-114929-3**

**Date Collected: 02/06/23 10:00**
**Matrix: Water**
**Date Received: 02/09/23 10:25**

**Method: RSK-175 - Dissolved Gases (GC)**

| Analyte | Result | Qualifier | LOQ | DL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Carbon dioxide** | **90000** | **J1** | 12000 | 2600 | ug/L | | 02/10/23 08:21 | 02/10/23 09:56 | 1 |

# QC Sample Results

Client: ALS Group USA, Corp
Project/Site: HS23020265

Job ID: 410-114929-1

## Method: RSK-175 - Dissolved Gases (GC)

**Lab Sample ID: MB 410-343431/1-A**
**Matrix: Water**
**Analysis Batch: 343395**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 343431**

| Analyte | MB Result | MB Qualifier | LOQ | DL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Carbon dioxide | 2600 | U | 12000 | 2600 | ug/L | | 02/10/23 08:21 | 02/10/23 09:12 | 1 |

**Lab Sample ID: LCS 410-343431/2-A**
**Matrix: Water**
**Analysis Batch: 343395**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 343431**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Carbon dioxide | | | 35800 | 33700 | | ug/L | | 94 | 80 - 122 | | |

**Lab Sample ID: 410-114929-3 MS**
**Matrix: Water**
**Analysis Batch: 343395**

**Client Sample ID: HS23020265-04**
**Prep Type: Total/NA**
**Prep Batch: 343431**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Carbon dioxide | 90000 | J1 | 35800 | 151000 | M J1 | ug/L | | 168 | 80 - 122 | | |

**Lab Sample ID: 410-114929-3 MSD**
**Matrix: Water**
**Analysis Batch: 343395**

**Client Sample ID: HS23020265-04**
**Prep Type: Total/NA**
**Prep Batch: 343431**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Carbon dioxide | 90000 | J1 | 35800 | 210000 | M J1 | ug/L | | 334 | 80 - 122 | 33 | 30 |

# QC Association Summary

Client: ALS Group USA, Corp
Project/Site: HS23020265

Job ID: 410-114929-1

## GC VOA

### Analysis Batch: 343395

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 410-114929-1 | HS23020265-01 | Total/NA | Water | RSK-175 | 343431 |
| 410-114929-2 | HS23020265-02 | Total/NA | Water | RSK-175 | 343431 |
| 410-114929-3 | HS23020265-04 | Total/NA | Water | RSK-175 | 343431 |
| MB 410-343431/1-A | Method Blank | Total/NA | Water | RSK-175 | 343431 |
| LCS 410-343431/2-A | Lab Control Sample | Total/NA | Water | RSK-175 | 343431 |
| 410-114929-3 MS | HS23020265-04 | Total/NA | Water | RSK-175 | 343431 |
| 410-114929-3 MSD | HS23020265-04 | Total/NA | Water | RSK-175 | 343431 |

### Prep Batch: 343431

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 410-114929-1 | HS23020265-01 | Total/NA | Water | RSK-175 | |
| 410-114929-2 | HS23020265-02 | Total/NA | Water | RSK-175 | |
| 410-114929-3 | HS23020265-04 | Total/NA | Water | RSK-175 | |
| MB 410-343431/1-A | Method Blank | Total/NA | Water | RSK-175 | |
| LCS 410-343431/2-A | Lab Control Sample | Total/NA | Water | RSK-175 | |
| 410-114929-3 MS | HS23020265-04 | Total/NA | Water | RSK-175 | |
| 410-114929-3 MSD | HS23020265-04 | Total/NA | Water | RSK-175 | |

# Lab Chronicle

Client: ALS Group USA, Corp
Project/Site: HS23020265

Job ID: 410-114929-1

## Client Sample ID: HS23020265-01

**Lab Sample ID: 410-114929-1**

**Date Collected: 02/06/23 07:35**

**Matrix: Water**

**Date Received: 02/09/23 10:25**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab | Prepared or Analyzed |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | RSK-175 | | | 343431 | WN7O | ELLE | 02/10/23 08:21 |
| Total/NA | Analysis | RSK-175 | | 1 | 343395 | WN7O | ELLE | 02/10/23 09:41 |

## Client Sample ID: HS23020265-02

**Lab Sample ID: 410-114929-2**

**Date Collected: 02/06/23 08:20**

**Matrix: Water**

**Date Received: 02/09/23 10:25**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab | Prepared or Analyzed |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | RSK-175 | | | 343431 | WN7O | ELLE | 02/10/23 08:21 |
| Total/NA | Analysis | RSK-175 | | 1 | 343395 | WN7O | ELLE | 02/10/23 09:48 |

## Client Sample ID: HS23020265-04

**Lab Sample ID: 410-114929-3**

**Date Collected: 02/06/23 10:00**

**Matrix: Water**

**Date Received: 02/09/23 10:25**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab | Prepared or Analyzed |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | RSK-175 | | | 343431 | WN7O | ELLE | 02/10/23 08:21 |
| Total/NA | Analysis | RSK-175 | | 1 | 343395 | WN7O | ELLE | 02/10/23 09:56 |

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

# Accreditation/Certification Summary

Client: ALS Group USA, Corp
Project/Site: HS23020265

Job ID: 410-114929-1

## Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

The accreditations/certifications listed below are applicable to this report.

| Authority | Program | Identification Number | Expiration Date |
|---|---|---|---|
| A2LA | Dept. of Defense ELAP | 0001.01 | 11-30-24 |

# Method Summary

Client: ALS Group USA, Corp
Project/Site: HS23020265

Job ID: 410-114929-1

| Method | Method Description | Protocol | Laboratory |
|---|---|---|---|
| RSK-175 | Dissolved Gases (GC) | RSK | ELLE |
| RSK-175 | Dissolved Gases Prep | RSK | ELLE |

**Protocol References:**

RSK = Sample Prep And Calculations For Dissolved Gas Analysis In Water Samples Using A GC Headspace Equilibration Technique , RSKSOP-175, Rev. 0, 8/11/94, USEPA Research Lab

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

# Sample Summary

Client: ALS Group USA, Corp
Project/Site: HS23020265

Job ID: 410-114929-1

| Lab Sample ID | Client Sample ID | Matrix | Collected | Received |
|---|---|---|---|---|
| 410-114929-1 | HS23020265-01 | Water | 02/06/23 07:35 | 02/09/23 10:25 |
| 410-114929-2 | HS23020265-02 | Water | 02/06/23 08:20 | 02/09/23 10:25 |
| 410-114929-3 | HS23020265-04 | Water | 02/06/23 10:00 | 02/09/23 10:25 |

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Houston, TX 77099
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**F:** +1 281 530 5887
**www.alsglobal.com**

410-114929 Chain of Custody

# Subcontract Chain of Custody

**SAMPLING STATE:** **Dept of Defense** **COC ID:** **20913**

**SUBCONTRACT TO:**

Eurofins Lancaster Laboratories Envt Testing
2425 New Holland Pike
Lancaster, PA 17601 **Phone:** +1 717 656 2300

**CUSTOMER INFORMATION:**

| | |
|---|---|
| **Company:** | ALS Houston |
| **Contact:** | Dane J. Wacasey |
| **Address:** | 10450 Stancliff Rd, Ste 210 |
| **Phone:** | +1 281 530 5656 |
| **Email:** | Dane.Wacasey@alsglobal.com |
| **Alternate Contact:** | Jumoke M. Lawal |
| **Email:** | jumoke.lawal@alsglobal.com |

**INVOICE INFORMATION:**

| | |
|---|---|
| **Company:** | ALS Houston |
| **Contact:** | Accounts Payable |
| **Address:** | 10450 Stancliff Rd, Ste 210 |
| **Phone:** | +1 281 530 5656 |
| **Reference:** | HS23020265 |
| **TSR:** | Ron Martino |

| | LAB SAMPLE ID | CLIENT SAMPLE ID | MATRIX | COLLECT DATE |
|---|---|---|---|---|
| | ANALYSIS REQUESTED | | | DUE DATE |
| 1. | **HS23020265-01** | **LHSMW21-230206** | **Water** | **06 Feb 2023 07:35** |
| | RSK-CO2; DoD Level II & IV, Equ_APTIM_GISKey | | | 21 Feb 2023 |
| 2. | **HS23020265-02** | **46WW16-230206** | **Water** | **06 Feb 2023 08:20** |
| | RSK-CO2; DoD Level II & IV, Equ_APTIM_GISKey | | | 21 Feb 2023 |
| 3. | **HS23020265-04** | **46WW02-230206** | **Water** | **06 Feb 2023 10:00** |
| | RSK-CO2; DoD Level II & IV, Equ_APTIM_GISKey | | | 21 Feb 2023 |

**Comments:** MS/MSD - HS23020265-04

Please analyze for the analysis listed above.
Send report to the emails shown above.

**QC Level:** DOD IV (DoD Data Package)

Relinquished By: _____ Date/Time: 2/8/23 1800

Received By: _____ Date/Time: 2/9/23 10:25

Cooler ID(s): _____ Temperature(s): _____

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Houston, TX 77099
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# Purchase Order

**PO: HS23020265**

**VENDOR:**

Eurofins Lancaster Laboratories Envt Testing
2425 New Holland Pike
Lancaster, PA 17601

**Phone:** +1 717 656 2300

**CUSTOMER INFORMATION:**

| | |
|---|---|
| **Company:** | ALS Houston |
| **Contact:** | Dane J. Wacasey |
| **Address:** | 10450 Stancliff Rd, Ste 210 |
| **Phone:** | +1 281 530 5656 |
| **Email:** | Dane.Wacasey@alsglobal.com |
| **Alternate Contact:** | Jumoke M. Lawal |
| **Email:** | jumoke.lawal@alsglobal.com |

**INVOICE INFORMATION:**

| | |
|---|---|
| **Company:** | ALS Houston |
| **Contact:** | Accounts Payable |
| **Address:** | 10450 Stancliff Rd, Ste 210 |
| **Phone:** | +1 281 530 5656 |
| **Reference:** | 20913 |
| **TSR:** | Ron Martino |

| | Item | Catalog No | Unit Price | Quantity | Ext Price |
|---|---|---|---|---|---|
| 1. | RSK-CO2; DoD Level II & IV, Equ_APTIM_GISKey | NA | $120.00 | 3 | $360.00 |

**Order Total:** $360.00

# Login Sample Receipt Checklist

Client: ALS Group USA, Corp

Job Number: 410-114929-1

**Login Number: 114929**
**List Number: 1**
**Creator: Ballard, Megan**

**List Source: Eurofins Lancaster Laboratories Environment Testing, LLC**

| Question | Answer | Comment |
|---|---|---|
| The cooler's custody seal is intact. | True | |
| The cooler or samples do not appear to have been compromised or tampered with. | True | |
| Samples were received on ice. | True | |
| Cooler Temperature is acceptable (</=6C, not frozen). | True | |
| Cooler Temperature is recorded. | True | |
| WV: Container Temperature is acceptable (</=6C, not frozen). | N/A | |
| WV: Container Temperature is recorded. | N/A | |
| COC is present. | True | |
| COC is filled out in ink and legible. | True | |
| COC is filled out with all pertinent information. | True | |
| There are no discrepancies between the containers received and the COC. | True | |
| Sample containers have legible labels. | True | |
| Containers are not broken or leaking. | True | |
| Sample collection date/times are provided. | True | |
| Appropriate sample containers are used. | True | |
| Sample bottles are completely filled. | True | |
| There is sufficient vol. for all requested analyses. | True | |
| Is the Field Sampler's name present on COC? | False | Received project as a subcontract. |
| Sample custody seals are intact. | N/A | |
| VOA sample vials do not have headspace >6mm in diameter (none, if from WV)? | True | |

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January 22, 2024

Vicki Graves
Aptim Environmental & Infrastucture, Inc.
10333 Richmond Ave
Ste 1030
Houston, TX 77042

Work Order: **HS23020330**

Laboratory Results for: **LHAAP 46 Febuary 2023**

Dear Vicki Graves ,

ALS Environmental received 4 sample(s) on Feb 08, 2023 for the analysis presented in the following report.

This is a REVISED REPORT. Please see the Case Narrative for discussion concerning this revision.

Regards,

**Generated By: DAYNA.FISHER**
Dane J. Wacasey

**ALS Houston, US** Date: 22-Jan-24

**Client:** Aptim Environmental & Infrastucture, Inc.
**Project:** LHAAP 46 Febuary 2023
**Work Order:** HS23020330

**SAMPLE SUMMARY**

| Lab Samp ID | Client Sample ID | Matrix | TagNo | Collection Date | Date Received | Hold |
|---|---|---|---|---|---|---|
| HS23020330-01 | 46WW05-230207 | Water | | 07-Feb-2023 08:20 | 08-Feb-2023 09:45 | ☐ |
| HS23020330-02 | 46WW09-230207 | Water | | 07-Feb-2023 09:10 | 08-Feb-2023 09:45 | ☐ |
| HS23020330-03 | 46WW09-230207-FD | Water | | 07-Feb-2023 09:10 | 08-Feb-2023 09:45 | ☐ |
| HS23020330-04 | Trip Blank-2302207 | Water | CG-061422-305 | 07-Feb-2023 00:00 | 08-Feb-2023 09:45 | ☐ |

**ALS Houston, US** Date: 22-Jan-24

**Client:** Aptim Environmental & Infrastucture, Inc. **CASE NARRATIVE**
**Project:** LHAAP 46 Febuary 2023
**Work Order:** HS23020330

## Work Order Comments

• Revision I: This report was revised 01/22/24 to include the correct LOD at 0.5 ug/L for method 8260.

## Work Order Comments

• The analysis for CO2 by RSK175 was subcontracted to Eurofins in Lancaster, PA. The final report is appended.

## Work Order Comments

• The instrument used for nitrate analysis became inoperable on the day the samples were being analyzed. A split was made and sent to ALS Kelso for nitrate analysis. Due to a delay in delivery of the samples to Kelso, the samples arrived six days post collection. The analysis of nitrate was cancelled per client request.

## GC Semivolatiles by Method RSK-175

### Batch ID: R428169

**Sample ID: HS23020265-04MS**

• MS and MSD are for an unrelated sample

## GCMS Volatiles by Method SW8260

### Batch ID: R427850

**Sample ID: HS23020265-04MS**

• MS and MSD are for an unrelated sample

## WetChemistry by Method SM5310B

### Batch ID: R428559

• The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

## WetChemistry by Method SW9056

### Batch ID: R427935

**Sample ID: HS23011621-01MS**

• MS and MSD are for an unrelated sample (Chloride,Sulfate)

**ALS Houston, US** Date: 22-Jan-24

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 46 Febuary 2023
Sample ID: 46WW05-230207
Collection Date: 07-Feb-2023 08:20

**ANALYTICAL REPORT**
WorkOrder:HS23020330
Lab ID:HS23020330-01
Matrix:Water

| ANALYSES | RESULT | QUAL | DL | LOD | LOQ | UNITS | DILUTION FACTOR | DATE ANALYZED |
|---|---|---|---|---|---|---|---|---|
| **VOLATILES ORGANICS BY METHOD 8260C** | | **Method:SW8260** | | | | | | Analyst: PC |
| **cis-1,2-Dichloroethene** | **1.8** | | **0.20** | **0.50** | **1.0** | **ug/L** | 1 | 11-Feb-2023 18:55 |
| **Trichloroethene** | **33** | | **0.20** | **0.50** | **1.0** | **ug/L** | 1 | 11-Feb-2023 18:55 |
| Vinyl chloride | 0.50 | U | 0.20 | 0.50 | 1.0 | ug/L | 1 | 11-Feb-2023 18:55 |
| *Surr: 1,2-Dichloroethane-d4* | *102* | | | **0** | *81-118* | *%REC* | *1* | *11-Feb-2023 18:55* |
| *Surr: 4-Bromofluorobenzene* | *108* | | | **0** | *85-114* | *%REC* | *1* | *11-Feb-2023 18:55* |
| *Surr: Dibromofluoromethane* | *93.8* | | | **0** | *80-119* | *%REC* | *1* | *11-Feb-2023 18:55* |
| *Surr: Toluene-d8* | *109* | | | **0** | *89-112* | *%REC* | *1* | *11-Feb-2023 18:55* |
| **DISSOLVED GASES BY RSK-175** | | **Method:RSK-175** | | | | | | Analyst: SAM |
| Ethane | 0.000500 | U | 0.000144 | 0.000500 | 0.00100 | mg/L | 1 | 09-Feb-2023 10:30 |
| **Ethene** | **0.00132** | | **0.000234** | **0.000500** | **0.00100** | **mg/L** | 1 | 09-Feb-2023 10:30 |
| **Methane** | **0.00332** | | **0.000107** | **0.000500** | **0.000500** | **mg/L** | 1 | 09-Feb-2023 10:30 |
| **TOTAL ORGANIC CARBON - SM5310B-2011** | | **Method:SM5310B** | | | | | | Analyst: JAC |
| **Organic Carbon, Total** | **7.38** | | **0.500** | **1.00** | **1.00** | **mg/L** | 1 | 22-Feb-2023 11:31 |
| **ANIONS BY SW9056A** | | **Method:SW9056** | | | | | | Analyst: TH |
| **Chloride** | **172** | | **1.00** | **1.25** | **2.50** | **mg/L** | 5 | 14-Feb-2023 05:30 |
| **Sulfate** | **4,440** | | **10.0** | **12.5** | **25.0** | **mg/L** | 50 | 14-Feb-2023 05:36 |
| **SUBCONTRACT ANALYSIS - RSK** | | **Method:NA** | | | | | | Analyst: SUB |
| Subcontract Analysis | See Attached | | 0 | 0 | | NA | 1 | 13-Feb-2023 16:26 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

**Revision:** 1

**ALS Houston, US** Date: 22-Jan-24

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 46 Febuary 2023
Sample ID: 46WW09-230207
Collection Date: 07-Feb-2023 09:10

**ANALYTICAL REPORT**
WorkOrder:HS23020330
Lab ID:HS23020330-02
Matrix:Water

| ANALYSES | RESULT | QUAL | DL | LOD | LOQ | UNITS | DILUTION FACTOR | DATE ANALYZED |
|---|---|---|---|---|---|---|---|---|
| **VOLATILES ORGANICS BY METHOD 8260C** | | **Method:SW8260** | | | | | | Analyst: PC |
| cis-1,2-Dichloroethene | 0.50 | U | 0.20 | 0.50 | 1.0 | ug/L | 1 | 11-Feb-2023 18:13 |
| Trichloroethene | 0.50 | U | 0.20 | 0.50 | 1.0 | ug/L | 1 | 11-Feb-2023 18:13 |
| Vinyl chloride | 0.50 | U | 0.20 | 0.50 | 1.0 | ug/L | 1 | 11-Feb-2023 18:13 |
| *Surr: 1,2-Dichloroethane-d4* | *100* | | | **0** | *81-118* | *%REC* | *1* | *11-Feb-2023 18:13* |
| *Surr: 4-Bromofluorobenzene* | *106* | | | **0** | *85-114* | *%REC* | *1* | *11-Feb-2023 18:13* |
| *Surr: Dibromofluoromethane* | *94.2* | | | **0** | *80-119* | *%REC* | *1* | *11-Feb-2023 18:13* |
| *Surr: Toluene-d8* | *107* | | | **0** | *89-112* | *%REC* | *1* | *11-Feb-2023 18:13* |
| **DISSOLVED GASES BY RSK-175** | | **Method:RSK-175** | | | | | | Analyst: SAM |
| Ethane | 0.000500 | U | 0.000144 | 0.000500 | 0.00100 | mg/L | 1 | 09-Feb-2023 10:50 |
| **Ethene** | **0.00117** | | **0.000234** | **0.000500** | **0.00100** | **mg/L** | 1 | 09-Feb-2023 10:50 |
| **Methane** | **0.00185** | | **0.000107** | **0.000500** | **0.000500** | **mg/L** | 1 | 09-Feb-2023 10:50 |
| **TOTAL ORGANIC CARBON - SM5310B-2011** | | **Method:SM5310B** | | | | | | Analyst: JAC |
| **Organic Carbon, Total** | **3.95** | | **0.500** | **1.00** | **1.00** | **mg/L** | 1 | 22-Feb-2023 11:43 |
| **ANIONS BY SW9056A** | | **Method:SW9056** | | | | | | Analyst: TH |
| **Chloride** | **473** | | **4.00** | **5.00** | **10.0** | **mg/L** | 20 | 14-Feb-2023 05:48 |
| **Sulfate** | **2,270** | | **8.00** | **10.0** | **20.0** | **mg/L** | 40 | 14-Feb-2023 08:50 |
| **SUBCONTRACT ANALYSIS - RSK** | | **Method:NA** | | | | | | Analyst: SUB |
| Subcontract Analysis | See Attached | | 0 | 0 | | NA | 1 | 13-Feb-2023 16:26 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

**Revision:** 1

**ALS Houston, US** Date: 22-Jan-24

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 46 Febuary 2023
Sample ID: 46WW09-230207-FD
Collection Date: 07-Feb-2023 09:10

**ANALYTICAL REPORT**
WorkOrder:HS23020330
Lab ID:HS23020330-03
Matrix:Water

| ANALYSES | RESULT | QUAL | DL | LOD | LOQ | UNITS | DILUTION FACTOR | DATE ANALYZED |
|---|---|---|---|---|---|---|---|---|
| **VOLATILES ORGANICS BY METHOD 8260C** | | **Method:SW8260** | | | | | | Analyst: PC |
| cis-1,2-Dichloroethene | 0.50 | U | 0.20 | 0.50 | 1.0 | ug/L | 1 | 11-Feb-2023 18:34 |
| Trichloroethene | 0.50 | U | 0.20 | 0.50 | 1.0 | ug/L | 1 | 11-Feb-2023 18:34 |
| Vinyl chloride | 0.50 | U | 0.20 | 0.50 | 1.0 | ug/L | 1 | 11-Feb-2023 18:34 |
| *Surr: 1,2-Dichloroethane-d4* | *100* | | | **0** | *81-118* | *%REC* | *1* | *11-Feb-2023 18:34* |
| *Surr: 4-Bromofluorobenzene* | *106* | | | **0** | *85-114* | *%REC* | *1* | *11-Feb-2023 18:34* |
| *Surr: Dibromofluoromethane* | *93.1* | | | **0** | *80-119* | *%REC* | *1* | *11-Feb-2023 18:34* |
| *Surr: Toluene-d8* | *106* | | | **0** | *89-112* | *%REC* | *1* | *11-Feb-2023 18:34* |
| **DISSOLVED GASES BY RSK-175** | | **Method:RSK-175** | | | | | | Analyst: SAM |
| **Ethane** | **0.000958** | J | **0.000144** | **0.000500** | **0.00100** | **mg/L** | 1 | 09-Feb-2023 11:24 |
| Ethene | 0.000500 | U | 0.000234 | 0.000500 | 0.00100 | mg/L | 1 | 09-Feb-2023 11:24 |
| **Methane** | **0.00112** | | **0.000107** | **0.000500** | **0.000500** | **mg/L** | 1 | 09-Feb-2023 11:24 |
| **TOTAL ORGANIC CARBON - SM5310B-2011** | | **Method:SM5310B** | | | | | | Analyst: JAC |
| **Organic Carbon, Total** | **4.24** | | **0.500** | **1.00** | **1.00** | **mg/L** | 1 | 22-Feb-2023 11:56 |
| **ANIONS BY SW9056A** | | **Method:SW9056** | | | | | | Analyst: TH |
| **Chloride** | **465** | | **4.00** | **5.00** | **10.0** | **mg/L** | 20 | 14-Feb-2023 05:59 |
| **Sulfate** | **2,250** | | **8.00** | **10.0** | **20.0** | **mg/L** | 40 | 14-Feb-2023 08:55 |
| **SUBCONTRACT ANALYSIS - RSK** | | **Method:NA** | | | | | | Analyst: SUB |
| Subcontract Analysis | See Attached | | 0 | 0 | | NA | 1 | 13-Feb-2023 16:26 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

**Revision:** 1

**ALS Houston, US** Date: 22-Jan-24

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 46 Febuary 2023
Sample ID: Trip Blank-2302207
Collection Date: 07-Feb-2023 00:00

**ANALYTICAL REPORT**
WorkOrder:HS23020330
Lab ID:HS23020330-04
Matrix:Water

| ANALYSES | RESULT | QUAL | DL | LOD | LOQ | UNITS | DILUTION FACTOR | DATE ANALYZED |
|---|---|---|---|---|---|---|---|---|
| **VOLATILES ORGANICS BY METHOD 8260C** | **Method:SW8260** | | | | | | | Analyst: PC |
| cis-1,2-Dichloroethene | 0.50 | U | 0.20 | 0.50 | 1.0 | ug/L | 1 | 11-Feb-2023 16:28 |
| Trichloroethene | 0.50 | U | 0.20 | 0.50 | 1.0 | ug/L | 1 | 11-Feb-2023 16:28 |
| Vinyl chloride | 0.50 | U | 0.20 | 0.50 | 1.0 | ug/L | 1 | 11-Feb-2023 16:28 |
| *Surr: 1,2-Dichloroethane-d4* | *100* | | | **0** | *81-118* | *%REC* | *1* | *11-Feb-2023 16:28* |
| *Surr: 4-Bromofluorobenzene* | *107* | | | **0** | *85-114* | *%REC* | *1* | *11-Feb-2023 16:28* |
| *Surr: Dibromofluoromethane* | *93.9* | | | **0** | *80-119* | *%REC* | *1* | *11-Feb-2023 16:28* |
| *Surr: Toluene-d8* | *107* | | | **0** | *89-112* | *%REC* | *1* | *11-Feb-2023 16:28* |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

**Revision:** 1

**ALS Houston, US** Date: 22-Jan-24

**Client:** Aptim Environmental & Infrastucture, Inc.
**Project:** LHAAP 46 Febuary 2023
**WorkOrder:** HS23020330

**DATES REPORT**

| Sample ID | Client Samp ID | Collection Date | Leachate Date | Prep Date | Analysis Date | DF |
|---|---|---|---|---|---|---|
| **Batch ID:** R427850 ( 0 ) | **Test Name :** VOLATILES ORGANICS BY METHOD 8260C | | | | **Matrix:** Water | |
| HS23020330-01 | 46WW05-230207 | 07 Feb 2023 08:20 | | | 11 Feb 2023 18:55 | 1 |
| HS23020330-02 | 46WW09-230207 | 07 Feb 2023 09:10 | | | 11 Feb 2023 18:13 | 1 |
| HS23020330-03 | 46WW09-230207-FD | 07 Feb 2023 09:10 | | | 11 Feb 2023 18:34 | 1 |
| HS23020330-04 | Trip Blank-2302207 | 07 Feb 2023 00:00 | | | 11 Feb 2023 16:28 | 1 |
| **Batch ID:** R427900 ( 0 ) | **Test Name :** SUBCONTRACT ANALYSIS - RSK | | | | **Matrix:** Water | |
| HS23020330-01 | 46WW05-230207 | 07 Feb 2023 08:20 | | | 13 Feb 2023 16:26 | 1 |
| HS23020330-02 | 46WW09-230207 | 07 Feb 2023 09:10 | | | 13 Feb 2023 16:26 | 1 |
| HS23020330-03 | 46WW09-230207-FD | 07 Feb 2023 09:10 | | | 13 Feb 2023 16:26 | 1 |
| **Batch ID:** R427935 ( 0 ) | **Test Name :** ANIONS BY SW9056A | | | | **Matrix:** Water | |
| HS23020330-01 | 46WW05-230207 | 07 Feb 2023 08:20 | | | 14 Feb 2023 05:36 | 50 |
| HS23020330-01 | 46WW05-230207 | 07 Feb 2023 08:20 | | | 14 Feb 2023 05:30 | 5 |
| HS23020330-02 | 46WW09-230207 | 07 Feb 2023 09:10 | | | 14 Feb 2023 08:50 | 40 |
| HS23020330-02 | 46WW09-230207 | 07 Feb 2023 09:10 | | | 14 Feb 2023 05:48 | 20 |
| HS23020330-03 | 46WW09-230207-FD | 07 Feb 2023 09:10 | | | 14 Feb 2023 08:55 | 40 |
| HS23020330-03 | 46WW09-230207-FD | 07 Feb 2023 09:10 | | | 14 Feb 2023 05:59 | 20 |
| **Batch ID:** R428169 ( 0 ) | **Test Name :** DISSOLVED GASES BY RSK-175 | | | | **Matrix:** Water | |
| HS23020330-01 | 46WW05-230207 | 07 Feb 2023 08:20 | | | 09 Feb 2023 10:30 | 1 |
| HS23020330-02 | 46WW09-230207 | 07 Feb 2023 09:10 | | | 09 Feb 2023 10:50 | 1 |
| HS23020330-03 | 46WW09-230207-FD | 07 Feb 2023 09:10 | | | 09 Feb 2023 11:24 | 1 |
| **Batch ID:** R428559 ( 0 ) | **Test Name :** TOTAL ORGANIC CARBON - SM5310B-2011 | | | | **Matrix:** Water | |
| HS23020330-01 | 46WW05-230207 | 07 Feb 2023 08:20 | | | 22 Feb 2023 11:31 | 1 |
| HS23020330-02 | 46WW09-230207 | 07 Feb 2023 09:10 | | | 22 Feb 2023 11:43 | 1 |
| HS23020330-03 | 46WW09-230207-FD | 07 Feb 2023 09:10 | | | 22 Feb 2023 11:56 | 1 |

**ALS Houston, US** Date: 22-Jan-24

**Client:** Aptim Environmental & Infrastucture, Inc.
**Project:** LHAAP 46 Febuary 2023
**WorkOrder:** HS23020330

**QC BATCH REPORT**

**Batch ID: R428169 ( 0 )** **Instrument: FID-4** **Method: DISSOLVED GASES BY RSK-175**

**MBLK** Sample ID: **MBLK-230209** Units: **mg/L** Analysis Date: **09-Feb-2023 07:36**
Client ID: Run ID: **FID-4_428169** SeqNo: **7132771** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Ethane | 0.000500 | 0.00100 | | | | | | | | U |
| Ethene | 0.000500 | 0.00100 | | | | | | | | U |
| Methane | 0.000500 | 0.000500 | | | | | | | | U |

**LCS** Sample ID: **LCS-230209** Units: **mg/L** Analysis Date: **09-Feb-2023 07:44**
Client ID: Run ID: **FID-4_428169** SeqNo: **7132772** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Ethane | 0.0205 | 0.00100 | 0.01804 | 0 | 113 | 75 - 125 | | | | |
| Ethene | 0.0175 | 0.00100 | 0.0168 | 0 | 104 | 75 - 125 | | | | |
| Methane | 0.00879 | 0.000500 | 0.009647 | 0 | 91.1 | 75 - 125 | | | | |

**MS** Sample ID: **HS23020265-04MS** Units: **mg/L** Analysis Date: **09-Feb-2023 10:07**
Client ID: Run ID: **FID-4_428169** SeqNo: **7132776** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Ethane | 0.0242 | 0.00100 | 0.01804 | 0 | 134 | 75 - 125 | | | | S |
| Ethene | 0.0209 | 0.00100 | 0.0168 | 0 | 124 | 75 - 125 | | | | |
| Methane | 0.0106 | 0.000500 | 0.009647 | 0.001740 | 92.0 | 75 - 125 | | | | |

**MSD** Sample ID: **HS23020265-04MSD** Units: **mg/L** Analysis Date: **09-Feb-2023 10:16**
Client ID: Run ID: **FID-4_428169** SeqNo: **7132777** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Ethane | 0.0244 | 0.00100 | 0.01804 | 0 | 136 | 75 - 125 | 0.02420 | 1.03 | 30 | S |
| Ethene | 0.0210 | 0.00100 | 0.0168 | 0 | 125 | 75 - 125 | 0.02089 | 0.391 | 30 | |
| Methane | 0.0107 | 0.000500 | 0.009647 | 0.001740 | 93.2 | 75 - 125 | 0.01061 | 1.11 | 30 | |

**The following samples were analyzed in this batch:** HS23020330-01 HS23020330-02 HS23020330-03

**ALS Houston, US** Date: 22-Jan-24

**Client:** Aptim Environmental & Infrastucture, Inc.
**Project:** LHAAP 46 Febuary 2023
**WorkOrder:** HS23020330

**QC BATCH REPORT**

**Batch ID: R427850 ( 0 )** **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

**MBLK** Sample ID: **VBLKW-230211** Units: **ug/L** Analysis Date: **11-Feb-2023 14:00**
Client ID: Run ID: **VOA6_427850** SeqNo: **7120406** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| cis-1,2-Dichloroethene | 0.50 | 1.0 | | | | | | | | U |
| Trichloroethene | 0.50 | 1.0 | | | | | | | | U |
| Vinyl chloride | 0.50 | 1.0 | | | | | | | | U |
| *Surr: 1,2-Dichloroethane-d4* | *50.07* | *1.0* | *50* | *0* | *100* | *81 - 118* | | | | |
| *Surr: 4-Bromofluorobenzene* | *53.56* | *1.0* | *50* | *0* | *107* | *85 - 114* | | | | |
| *Surr: Dibromofluoromethane* | *47.35* | *1.0* | *50* | *0* | *94.7* | *80 - 119* | | | | |
| *Surr: Toluene-d8* | *53.07* | *1.0* | *50* | *0* | *106* | *89 - 112* | | | | |

**LCS** Sample ID: **VLCSW-230211** Units: **ug/L** Analysis Date: **11-Feb-2023 13:18**
Client ID: Run ID: **VOA6_427850** SeqNo: **7120405** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| cis-1,2-Dichloroethene | 18.49 | 1.0 | 20 | 0 | 92.4 | 78 - 123 | | | | |
| Trichloroethene | 18.29 | 1.0 | 20 | 0 | 91.4 | 79 - 123 | | | | |
| Vinyl chloride | 18.95 | 1.0 | 20 | 0 | 94.7 | 58 - 137 | | | | |
| *Surr: 1,2-Dichloroethane-d4* | *54.8* | *1.0* | *50* | *0* | *110* | *81 - 118* | | | | |
| *Surr: 4-Bromofluorobenzene* | *54.39* | *1.0* | *50* | *0* | *109* | *85 - 114* | | | | |
| *Surr: Dibromofluoromethane* | *49.85* | *1.0* | *50* | *0* | *99.7* | *80 - 119* | | | | |
| *Surr: Toluene-d8* | *50.95* | *1.0* | *50* | *0* | *102* | *89 - 112* | | | | |

**MS** Sample ID: **HS23020265-04MS** Units: **ug/L** Analysis Date: **11-Feb-2023 15:24**
Client ID: Run ID: **VOA6_427850** SeqNo: **7120410** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| cis-1,2-Dichloroethene | 17.38 | 1.0 | 20 | 1.768 | 78.0 | 78 - 123 | | | | |
| Trichloroethene | 44.84 | 1.0 | 20 | 28.68 | 80.8 | 79 - 123 | | | | |
| Vinyl chloride | 11.53 | 1.0 | 20 | 0.4346 | 55.5 | 58 - 137 | | | | S |
| *Surr: 1,2-Dichloroethane-d4* | *50.33* | *1.0* | *50* | *0* | *101* | *81 - 118* | | | | |
| *Surr: 4-Bromofluorobenzene* | *54.23* | *1.0* | *50* | *0* | *108* | *85 - 114* | | | | |
| *Surr: Dibromofluoromethane* | *46.11* | *1.0* | *50* | *0* | *92.2* | *80 - 119* | | | | |
| *Surr: Toluene-d8* | *53.66* | *1.0* | *50* | *0* | *107* | *89 - 112* | | | | |

**ALS Houston, US** Date: 22-Jan-24

**Client:** Aptim Environmental & Infrastucture, Inc.
**Project:** LHAAP 46 Febuary 2023
**WorkOrder:** HS23020330

**QC BATCH REPORT**

**Batch ID:** R427850 ( 0 ) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

**MSD** Sample ID: **HS23020265-04MSD** Units: **ug/L** Analysis Date: **11-Feb-2023 15:45**
Client ID: Run ID: **VOA6_427850** SeqNo: **7120411** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| cis-1,2-Dichloroethene | 22.7 | 1.0 | 20 | 1.768 | 105 | 78 - 123 | 17.38 | 26.6 | 20 | R |
| Trichloroethene | 48.93 | 1.0 | 20 | 28.68 | 101 | 79 - 123 | 44.84 | 8.73 | 20 | |
| Vinyl chloride | 14.19 | 1.0 | 20 | 0.4346 | 68.8 | 58 - 137 | 11.53 | 20.7 | 20 | R |
| *Surr: 1,2-Dichloroethane-d4* | *50.69* | *1.0* | *50* | *0* | *101* | *81 - 118* | *50.33* | *0.716* | *20* | |
| *Surr: 4-Bromofluorobenzene* | *53.66* | *1.0* | *50* | *0* | *107* | *85 - 114* | *54.23* | *1.07* | *20* | |
| *Surr: Dibromofluoromethane* | *45.8* | *1.0* | *50* | *0* | *91.6* | *80 - 119* | *46.11* | *0.677* | *20* | |
| *Surr: Toluene-d8* | *53.17* | *1.0* | *50* | *0* | *106* | *89 - 112* | *53.66* | *0.914* | *20* | |

**The following samples were analyzed in this batch:** HS23020330-01 HS23020330-02 HS23020330-03 HS23020330-04

**ALS Houston, US** Date: 22-Jan-24

**Client:** Aptim Environmental & Infrastucture, Inc.
**Project:** LHAAP 46 Febuary 2023
**WorkOrder:** HS23020330

**QC BATCH REPORT**

**Batch ID: R427935 ( 0 )** **Instrument: ICS-Integrion** **Method: ANIONS BY SW9056A**

**MBLK** Sample ID: **MBLK** Units: **mg/L** Analysis Date: **14-Feb-2023 01:14**
Client ID: Run ID: **ICS-Integrion_427935** SeqNo: **7122262** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 0.250 | 0.500 | | | | | | | | U |
| Sulfate | 0.250 | 0.500 | | | | | | | | U |

**LCS** Sample ID: **LCS** Units: **mg/L** Analysis Date: **14-Feb-2023 01:26**
Client ID: Run ID: **ICS-Integrion_427935** SeqNo: **7122263** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 19.91 | 0.500 | 20 | 0 | 99.6 | 80 - 120 | | | | |
| Sulfate | 20.19 | 0.500 | 20 | 0 | 101 | 80 - 120 | | | | |

**MS** Sample ID: **HS23011621-01MS** Units: **mg/L** Analysis Date: **14-Feb-2023 01:38**
Client ID: Run ID: **ICS-Integrion_427935** SeqNo: **7122265** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 305.8 | 0.500 | 10 | 305.5 | 3.03 | 80 - 120 | | | | SEO |
| Sulfate | 117.6 | 0.500 | 10 | 113.1 | 45.5 | 80 - 120 | | | | SEO |

**MSD** Sample ID: **HS23011621-01MSD** Units: **mg/L** Analysis Date: **14-Feb-2023 01:43**
Client ID: Run ID: **ICS-Integrion_427935** SeqNo: **7122266** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 305.5 | 0.500 | 10 | 305.5 | 0.190 | 80 - 120 | 305.8 | 0.0929 | 20 | SEO |
| Sulfate | 117.5 | 0.500 | 10 | 113.1 | 44.5 | 80 - 120 | 117.6 | 0.0875 | 20 | SEO |

**The following samples were analyzed in this batch:** HS23020330-01 HS23020330-02 HS23020330-03

**ALS Houston, US** Date: 22-Jan-24

**Client:** Aptim Environmental & Infrastucture, Inc.
**Project:** LHAAP 46 Febuary 2023
**WorkOrder:** HS23020330

**QC BATCH REPORT**

**Batch ID:** R428559 ( 0 ) **Instrument:** TOC_04 **Method:** TOTAL ORGANIC CARBON - SM5310B-2011

**MBLK** Sample ID: **MBLK-02222023** Units: **mg/L** Analysis Date: **22-Feb-2023 10:25**
Client ID: Run ID: **TOC_04_428559** SeqNo: **7140281** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Organic Carbon, Total | 1.00 | 1.00 | | | | | | | | U |

**LCS** Sample ID: **LCS-02222023** Units: **mg/L** Analysis Date: **22-Feb-2023 10:38**
Client ID: Run ID: **TOC_04_428559** SeqNo: **7140282** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Organic Carbon, Total | 10.64 | 1.00 | 10 | 0 | 106 | 85 - 115 | | | | |

**LCSD** Sample ID: **LCSD-02222023** Units: **mg/L** Analysis Date: **22-Feb-2023 10:52**
Client ID: Run ID: **TOC_04_428559** SeqNo: **7140283** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Organic Carbon, Total | 10.6 | 1.00 | 10 | 0 | 106 | 85 - 115 | 10.64 | 0.377 | 20 | |

**MS** Sample ID: **HS23020738-01MS** Units: **mg/L** Analysis Date: **22-Feb-2023 11:18**
Client ID: Run ID: **TOC_04_428559** SeqNo: **7140285** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Organic Carbon, Total | 15.11 | 1.00 | 10 | 4.232 | 109 | 80 - 120 | | | | |

**The following samples were analyzed in this batch:** HS23020330-01 HS23020330-02 HS23020330-03

**Revision:** 1

**ALS Houston, US** Date: 22-Jan-24

**Client:** Aptim Environmental & Infrastucture, Inc.
**Project:** LHAAP 46 Febuary 2023
**WorkOrder:** **HS23020330**

**QUALIFIERS, ACRONYMS, UNITS**

| Qualifier | Description |
|---|---|
| * | Value exceeds Regulatory Limit |
| a | Not accredited |
| B | Analyte detected in the associated Method Blank above the Reporting Limit |
| E | Value above quantitation range |
| H | Analyzed outside of Holding Time |
| J | Analyte detected below quantitation limit |
| M | Manually integrated, see raw data for justification |
| n | Not offered for accreditation |
| ND | Not Detected at the Reporting Limit |
| O | Sample amount is > 4 times amount spiked |
| P | Dual Column results percent difference > 40% |
| R | RPD above laboratory control limit |
| S | Spike Recovery outside laboratory control limits |
| U | Analyzed but not detected above the MDL/SDL |

| Acronym | Description |
|---|---|
| DCS | Detectability Check Study |
| DUP | Method Duplicate |
| LCS | Laboratory Control Sample |
| LCSD | Laboratory Control Sample Duplicate |
| MBLK | Method Blank |
| MDL | Method Detection Limit |
| MQL | Method Quantitation Limit |
| MS | Matrix Spike |
| MSD | Matrix Spike Duplicate |
| PDS | Post Digestion Spike |
| PQL | Practical Quantitaion Limit |
| SD | Serial Dilution |
| SDL | Sample Detection Limit |
| TRRP | Texas Risk Reduction Program |

| Unit Reported | Description |
|---|---|
| mg/L | Milligrams per Liter |

**ALS Houston, US** Date: 22-Jan-24

## CERTIFICATIONS,ACCREDITATIONS & LICENSES

| Agency | Number | Expire Date |
|---|---|---|
| Arkansas | 88-00356 | 27-Mar-2024 |
| California | 2919; 2024 | 30-Apr-2024 |
| Dept of Defense | L23-358 | 31-May-2025 |
| Florida | E87611-38 | 30-Jun-2024 |
| Illinois | 2000322023-11 | 30-Jun-2024 |
| Kansas | E-10352 2023-2024 | 31-Jul-2024 |
| Louisiana | 03087 2023-2024 | 30-Jun-2024 |
| Maryland | 343; 2023-2024 | 30-Jun-2024 |
| North Carolina | 624 - 2024 | 31-Dec-2024 |
| North Dakota | R-193 2023-2024 | 30-Apr-2024 |
| Oklahoma | 2023-140 | 31-Aug-2024 |
| Texas | T104704231-23-32 | 30-Apr-2024 |
| Utah | TX026932023-14 | 31-Jul-2024 |

**ALS Houston, US** Date: 22-Jan-24

## Sample Receipt Checklist

**Work Order ID:** HS23020330 **Date/Time Received:** **08-Feb-2023 09:45**

**Client Name:** CBI-Houston **Received by:** **Corey Grandits**

**Completed By:** */S/ Paresh M. Giga* (eSignature) 08-Feb-2023 11:04 (Date/Time) **Reviewed by:** */S/ Dane J. Wacasey* (eSignature) 13-Feb-2023 15:19 (Date/Time)

Matrices: **GW/Water** Carrier name: **FedEx Priority Overnight**

| | | | |
|---|---|---|---|
| Shipping container/cooler in good condition? | Yes ☑ | No ☐ | Not Present ☐ |
| Custody seals intact on shipping container/cooler? | Yes ☑ | No ☐ | Not Present ☐ |
| Custody seals intact on sample bottles? | Yes ☐ | No ☐ | Not Present ☑ |
| VOA/TX1005/TX1006 Solids in hermetically sealed vials? | Yes ☐ | No ☐ | Not Present ☑ |
| Chain of custody present? | Yes ☑ | No ☐ | 1 Page(s) |
| Chain of custody signed when relinquished and received? | Yes ☑ | No ☐ | COC IDs:none |
| Samplers name present on COC? | Yes ☑ | No ☐ | |
| Chain of custody agrees with sample labels? | Yes ☑ | No ☐ | |
| Samples in proper container/bottle? | Yes ☑ | No ☐ | |
| Sample containers intact? | Yes ☑ | No ☐ | |
| Sufficient sample volume for indicated test? | Yes ☑ | No ☐ | |
| All samples received within holding time? | Yes ☑ | No ☐ | |
| Container/Temp Blank temperature in compliance? | Yes ☑ | No ☐ | |
| Temperature(s)/Thermometer(s): | 2.9C/2.4C U/C | IR31 | |
| Cooler(s)/Kit(s): | 48674 | | |
| Date/Time sample(s) sent to storage: | 2/8/23 11:15 | | |
| Water - VOA vials have zero headspace? | Yes ☑ | No ☐ | No VOA vials submitted ☐ |
| Water - pH acceptable upon receipt? | Yes ☐ | No ☐ | N/A ☑ |
| pH adjusted? | Yes ☐ | No ☐ | N/A ☑ |
| pH adjusted by: | | | |

Login Notes: create split for NO3 to send to ALS Kelso.

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

Corrective Action:

# CHAIN OF CUSTODY

Name Of Lab Shipping To: ALS 10450 Stancliff Rd. Suite 210 Houston, TX, 77099 (281) 575-2190 ATTN: Dane Wacasey



**HS23020330**

Aptim Environmental & Infrastucture, Inc.

LHAAP46 Febuary 2023

**Project:** APTIM LONGHORN
ARMY AMMN. PLANT (LHAAP)
GROUNDWATER TREATMENT PLANT (GWTP)
KARNACK, TEXAS

**Project No.** 501032

**Job:** **LHAAP46 February 2023**

**Prepared By:** Scott Beesinger

**P.O. Number**

| Field Sample I.D. | Sample Matrix | Date / Time | MS / MSD | No. OF CONTAINERS | Analyses: VOC by SW 8260B | TOC by SM5310C | MEE by RSK 175 | Anions (chloride sulfate, nitrate) by SW9056 | CO2 by RSK 175 | Remarks (Preservatives, etc.) | Lab I.D.# |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 46WW05-230207 | WG | 2/7/23 0820 | | 12 | X | X | X | X | X | | |
| 46WW09-230207 | WG | 2/7/23 0910 | | 12 | X | X | X | X | X | | |
| 46WW09-230207-FD | WG | 2/7/23 0910 | | 12 | X | X | X | X | X | | |
| TRIP BLANK-230207 | W | 2/7/23 | | 2 | X | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |

Additional Remarks: **Standard TAT on all parameters. Please email results to Vicki.Graves@aptim.com and invoices to fedinvoices@aptim.com**

| Relinquished By: | Date | Time | Received By: | Date | Time | Relinquished By: | Date | Time | Received By: | Date | Time |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Scott Beesinger | 2/7/23 | 1430 | [illegible] | 2/8/23 | 0945 | | | | | | |

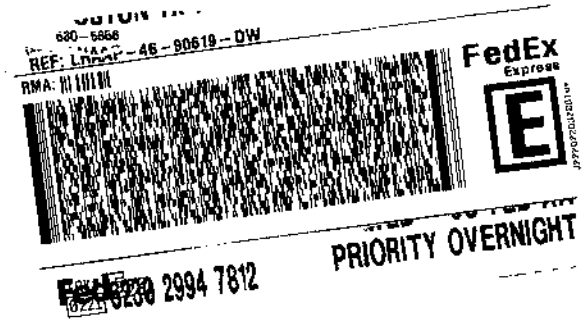
**For Lab Use Only**

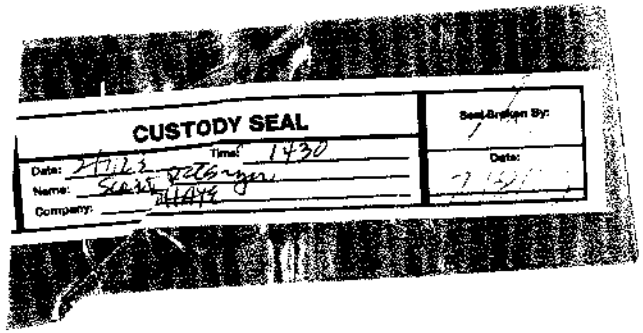
| Received At Lab By: | Date | Time | Airbill No. | Opened By: | Date | Time | Temp of Container | Seal No. | Condition |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |

Remarks:

IR#: CF=-0.5 48674 2.9°


ALS
10450 Stancliff Rd., Suite 210
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5887


680-5668
REF: - 46 - 90619 - DW
RMA:
FedEx
Express
PRIORITY OVERNIGHT
8230 2994 7812


CUSTODY SEAL
Seal Broken By:
Date:
Time: 1430
Name:
Company:
Date:

eurofins | Environment Testing

# ANALYTICAL REPORT

## PREPARED FOR

Attn: Dane Wacasey
ALS Group USA, Corp
10450 Stancliff Rd.
Suite 210
Houston, Texas 77099

Generated 2/13/2023 4:47:11 PM

## JOB DESCRIPTION

HS23020330

## JOB NUMBER

410-114936-1

Eurofins Lancaster Laboratories Environment Testing, LLC
2425 New Holland Pike
Lancaster PA 17601

See page two for job notes and contact information.



my EOL

# Eurofins Lancaster Laboratories Environment Testing, LLC



## Job Notes

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

## Authorization



Generated
2/13/2023 4:47:11 PM

Authorized for release by
Kelly Bauer, Project Manager
Kelly.Bauer@et.eurofinsus.com
(717)556-7262

# Eurofins Lancaster Laboratories Environment Testing, LLC

## Compliance Statement

Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.
· QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
· Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
· Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

This report shall not be reproduced except in full, without the written approval of the laboratory.

WARRANTY AND LIMITS OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. The foregoing express warranty is exclusive and is given in lieu of all other warranties, expressed or implied, except as otherwise agreed. We disclaim any other warranties, expressed or implied, including a warranty of fitness for particular purpose and warranty of merchantability. In no event shall Eurofins Lancaster Laboratories Environmental, LLC be liable for indirect, special, consequential, or incidental damages including, but not limited to, damages for loss of profit or goodwill regardless of (A) the negligence (either sole or concurrent) of Eurofins Lancaster Laboratories Environmental and (B) whether Eurofins Lancaster Laboratories Environmental has been informed of the possibility of such damages. We accept no legal responsibility for the purposes for which the client uses the test results. Except as otherwise agreed, no purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.



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# Definitions/Glossary

Client: ALS Group USA, Corp
Project/Site: HS23020330

Job ID: 410-114936-1

## Qualifiers

### GC VOA

| Qualifier | Qualifier Description |
|---|---|
| M | Manual integrated compound. |
| U | Undetected at the Limit of Detection. |

## Glossary

| Abbreviation | These commonly used abbreviations may or may not be present in this report. |
|---|---|
| ¤ | Listed under the "D" column to designate that the result is reported on a dry weight basis |
| %R | Percent Recovery |
| CFL | Contains Free Liquid |
| CFU | Colony Forming Unit |
| CNF | Contains No Free Liquid |
| DER | Duplicate Error Ratio (normalized absolute difference) |
| Dil Fac | Dilution Factor |
| DL | Detection Limit (DoD/DOE) |
| DL, RA, RE, IN | Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample |
| DLC | Decision Level Concentration (Radiochemistry) |
| EDL | Estimated Detection Limit (Dioxin) |
| LOD | Limit of Detection (DoD/DOE) |
| LOQ | Limit of Quantitation (DoD/DOE) |
| MCL | EPA recommended "Maximum Contaminant Level" |
| MDA | Minimum Detectable Activity (Radiochemistry) |
| MDC | Minimum Detectable Concentration (Radiochemistry) |
| MDL | Method Detection Limit |
| ML | Minimum Level (Dioxin) |
| MPN | Most Probable Number |
| MQL | Method Quantitation Limit |
| NC | Not Calculated |
| ND | Not Detected at the reporting limit (or MDL or EDL if shown) |
| NEG | Negative / Absent |
| POS | Positive / Present |
| PQL | Practical Quantitation Limit |
| PRES | Presumptive |
| QC | Quality Control |
| RER | Relative Error Ratio (Radiochemistry) |
| RL | Reporting Limit or Requested Limit (Radiochemistry) |
| RPD | Relative Percent Difference, a measure of the relative difference between two points |
| TEF | Toxicity Equivalent Factor (Dioxin) |
| TEQ | Toxicity Equivalent Quotient (Dioxin) |
| TNTC | Too Numerous To Count |

# Case Narrative

Client: ALS Group USA, Corp
Project/Site: HS23020330

Job ID: 410-114936-1

## Job ID: 410-114936-1

### Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

**Narrative**

**Job Narrative**
**410-114936-1**

**Receipt**
The samples were received on 2/9/2023 10:25 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 2.7°C

**GC VOA**
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

# Detection Summary

Client: ALS Group USA, Corp
Project/Site: HS23020330

Job ID: 410-114936-1

## Client Sample ID: 46WW05-230207 — Lab Sample ID: 410-114936-1

| Analyte | Result | Qualifier | LOQ | LOD | DL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|---|
| Carbon dioxide | 150000 | M | 12000 | | 2600 | ug/L | 1 | | RSK-175 | Total/NA |

## Client Sample ID: 46WW09-230207 — Lab Sample ID: 410-114936-2

| Analyte | Result | Qualifier | LOQ | LOD | DL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|---|
| Carbon dioxide | 54000 | | 12000 | | 2600 | ug/L | 1 | | RSK-175 | Total/NA |

## Client Sample ID: 46WW09-230207-FD — Lab Sample ID: 410-114936-3

| Analyte | Result | Qualifier | LOQ | LOD | DL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|---|
| Carbon dioxide | 59000 | | 12000 | | 2600 | ug/L | 1 | | RSK-175 | Total/NA |

This Detection Summary does not include radiochemical test results.

# Client Sample Results

Client: ALS Group USA, Corp
Project/Site: HS23020330

Job ID: 410-114936-1

## Client Sample ID: 46WW05-230207
**Lab Sample ID: 410-114936-1**
**Date Collected: 02/07/23 08:20**
**Matrix: Water**
**Date Received: 02/09/23 10:25**

### Method: RSK-175 - Dissolved Gases (GC)

| Analyte | Result | Qualifier | LOQ | LOD | DL | Unit | D | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Carbon dioxide | 150000 | M | 12000 | | 2600 | ug/L | | 02/10/23 10:19 | 1 |

## Client Sample ID: 46WW09-230207
**Lab Sample ID: 410-114936-2**
**Date Collected: 02/07/23 09:10**
**Matrix: Water**
**Date Received: 02/09/23 10:25**

### Method: RSK-175 - Dissolved Gases (GC)

| Analyte | Result | Qualifier | LOQ | LOD | DL | Unit | D | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Carbon dioxide | 54000 | | 12000 | | 2600 | ug/L | | 02/10/23 10:27 | 1 |

## Client Sample ID: 46WW09-230207-FD
**Lab Sample ID: 410-114936-3**
**Date Collected: 02/07/23 09:10**
**Matrix: Water**
**Date Received: 02/09/23 10:25**

### Method: RSK-175 - Dissolved Gases (GC)

| Analyte | Result | Qualifier | LOQ | LOD | DL | Unit | D | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Carbon dioxide | 59000 | | 12000 | | 2600 | ug/L | | 02/10/23 10:35 | 1 |

# QC Sample Results

Client: ALS Group USA, Corp
Project/Site: HS23020330

Job ID: 410-114936-1

## Method: RSK-175 - Dissolved Gases (GC)

**Lab Sample ID: MB 410-343431/1-A**
**Matrix: Water**
**Analysis Batch: 343395**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 343431**

| Analyte | MB Result | MB Qualifier | LOQ | LOD | DL | Unit | D | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Carbon dioxide | 2600 | U | 12000 | | 2600 | ug/L | | 02/10/23 09:12 | 1 |

**Lab Sample ID: LCS 410-343431/2-A**
**Matrix: Water**
**Analysis Batch: 343395**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 343431**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Carbon dioxide | | | 35800 | 33700 | | ug/L | | 94 | 80 - 122 | | |

# QC Association Summary

Client: ALS Group USA, Corp
Project/Site: HS23020330

Job ID: 410-114936-1

## GC VOA

### Analysis Batch: 343395

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 410-114936-1 | 46WW05-230207 | Total/NA | Water | RSK-175 | 343431 |
| 410-114936-2 | 46WW09-230207 | Total/NA | Water | RSK-175 | 343431 |
| 410-114936-3 | 46WW09-230207-FD | Total/NA | Water | RSK-175 | 343431 |
| MB 410-343431/1-A | Method Blank | Total/NA | Water | RSK-175 | 343431 |
| LCS 410-343431/2-A | Lab Control Sample | Total/NA | Water | RSK-175 | 343431 |

### Prep Batch: 343431

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 410-114936-1 | 46WW05-230207 | Total/NA | Water | RSK-175 | |
| 410-114936-2 | 46WW09-230207 | Total/NA | Water | RSK-175 | |
| 410-114936-3 | 46WW09-230207-FD | Total/NA | Water | RSK-175 | |
| MB 410-343431/1-A | Method Blank | Total/NA | Water | RSK-175 | |
| LCS 410-343431/2-A | Lab Control Sample | Total/NA | Water | RSK-175 | |

# Lab Chronicle

Client: ALS Group USA, Corp
Project/Site: HS23020330

Job ID: 410-114936-1

## Client Sample ID: 46WW05-230207
**Date Collected: 02/07/23 08:20**
**Date Received: 02/09/23 10:25**

## Lab Sample ID: 410-114936-1
**Matrix: Water**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab | Prepared or Analyzed |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | RSK-175 | | | 343431 | WN7O | ELLE | 02/10/23 08:21 |
| Total/NA | Analysis | RSK-175 | | 1 | 343395 | WN7O | ELLE | 02/10/23 10:19 |

## Client Sample ID: 46WW09-230207
**Date Collected: 02/07/23 09:10**
**Date Received: 02/09/23 10:25**

## Lab Sample ID: 410-114936-2
**Matrix: Water**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab | Prepared or Analyzed |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | RSK-175 | | | 343431 | WN7O | ELLE | 02/10/23 08:21 |
| Total/NA | Analysis | RSK-175 | | 1 | 343395 | WN7O | ELLE | 02/10/23 10:27 |

## Client Sample ID: 46WW09-230207-FD
**Date Collected: 02/07/23 09:10**
**Date Received: 02/09/23 10:25**

## Lab Sample ID: 410-114936-3
**Matrix: Water**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab | Prepared or Analyzed |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | RSK-175 | | | 343431 | WN7O | ELLE | 02/10/23 08:21 |
| Total/NA | Analysis | RSK-175 | | 1 | 343395 | WN7O | ELLE | 02/10/23 10:35 |

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

# Accreditation/Certification Summary

Client: ALS Group USA, Corp
Project/Site: HS23020330

Job ID: 410-114936-1

## Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

The accreditations/certifications listed below are applicable to this report.

| Authority | Program | Identification Number | Expiration Date |
|---|---|---|---|
| A2LA | Dept. of Defense ELAP | 0001.01 | 11-30-24 |

# Method Summary

Client: ALS Group USA, Corp
Project/Site: HS23020330

Job ID: 410-114936-1

| Method | Method Description | Protocol | Laboratory |
|---|---|---|---|
| RSK-175 | Dissolved Gases (GC) | RSK | ELLE |
| RSK-175 | Dissolved Gases Prep | RSK | ELLE |

**Protocol References:**

RSK = Sample Prep And Calculations For Dissolved Gas Analysis In Water Samples Using A GC Headspace Equilibration Technique, RSKSOP-175, Rev. 0, 8/11/94, USEPA Research Lab

**Laboratory References:**

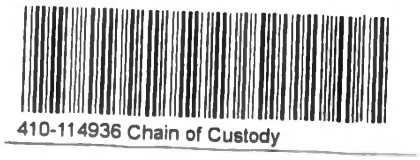
ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

# Sample Summary

Client: ALS Group USA, Corp
Project/Site: HS23020330

Job ID: 410-114936-1

| Lab Sample ID | Client Sample ID | Matrix | Collected | Received |
|---|---|---|---|---|
| 410-114936-1 | 2 | Water | 02/07/23 08:20 | 02/09/23 10:25 |
| 410-114936-2 | 46WW09-230207 | Water | 02/07/23 09:10 | 02/09/23 10:25 |
| 410-114936-3 | 46WW09-230207-FD | Water | 02/07/23 09:10 | 02/09/23 10:25 |




10450 Stancliff Rd, Ste 210
Houston, TX 77099
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**F:** +1 281 530 5887
**www.alsglobal.com**

# Subcontract Chain of Custody

**SAMPLING STATE:** **Dept of Defense** **COC ID:** **20918**

**SUBCONTRACT TO:**

Eurofins Lancaster Laboratories Envt Testing
2425 New Holland Pike
Lancaster, PA 17601 **Phone:** +1 717 656 2300

**CUSTOMER INFORMATION:**

| | |
|---|---|
| **Company:** | ALS Houston |
| **Contact:** | Dane J. Wacasey |
| **Address:** | 10450 Stancliff Rd, Ste 210 |
| **Phone:** | +1 281 530 5656 |
| **Email:** | Dane.Wacasey@alsglobal.com |
| **Alternate Contact:** | Jumoke M. Lawal |
| **Email:** | jumoke.lawal@alsglobal.com |

**INVOICE INFORMATION:**

| | |
|---|---|
| **Company:** | ALS Houston |
| **Contact:** | Accounts Payable |
| **Address:** | 10450 Stancliff Rd, Ste 210 |
| **Phone:** | +1 281 530 5656 |
| **Reference:** | HS23020330 |
| **TSR:** | Ron Martino |

| | LAB SAMPLE ID | CLIENT SAMPLE ID | MATRIX | COLLECT DATE |
|---|---|---|---|---|
| | ANALYSIS REQUESTED | | | DUE DATE |
| 1. | **HS23020330-01** | **46WW05-230207** | **Water** | **07 Feb 2023 08:20** |
| | RSK-CO2; DoD Level II & IV, Equ_APTIM_GISKey | | | 22 Feb 2023 |
| 2. | **HS23020330-02** | **46WW09-230207** | **Water** | **07 Feb 2023 09:10** |
| | RSK-CO2; DoD Level II & IV, Equ_APTIM_GISKey | | | 22 Feb 2023 |
| 3. | **HS23020330-03** | **46WW09-230207-FD** | **Water** | **07 Feb 2023 09:10** |
| | RSK-CO2; DoD Level II & IV, Equ_APTIM_GISKey | | | 22 Feb 2023 |

**Comments:** Please analyze for the analysis listed above.
Send report to the emails shown above.

**QC Level:** DOD IV (DoD Data Package)

Relinquished By: _____ Date/Time: 2/8/23 1800.

Received By: _____ Date/Time: 2/9/23 10:25

Cooler ID(s): _____ Temperature(s): _____

RIGHT SOLUTIONS | RIGHT PARTNER

10450 Stancliff Rd, Ste 210
Houston, TX 77099
**T:** +1 281 530 5656
**F:** +1 281 530 5887
**www.alsglobal.com**

# Purchase Order

**PO: HS23020330**

**VENDOR:**

Eurofins Lancaster Laboratories Envt Testing
2425 New Holland Pike
Lancaster, PA 17601

**Phone:** +1 717 656 2300

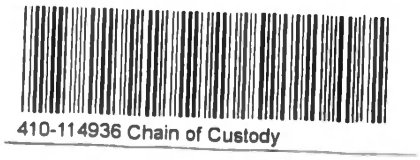
**CUSTOMER INFORMATION:**

| | |
|---|---|
| **Company:** | ALS Houston |
| **Contact:** | Dane J. Wacasey |
| **Address:** | 10450 Stancliff Rd, Ste 210 |
| **Phone:** | +1 281 530 5656 |
| **Email:** | Dane.Wacasey@alsglobal.com |
| **Alternate Contact:** | Jumoke M. Lawal |
| **Email:** | jumoke.lawal@alsglobal.com |

**INVOICE INFORMATION:**

| | |
|---|---|
| **Company:** | ALS Houston |
| **Contact:** | Accounts Payable |
| **Address:** | 10450 Stancliff Rd, Ste 210 |
| **Phone:** | +1 281 530 5656 |
| **Reference:** | 20918 |
| **TSR:** | Ron Martino |

| | Item | Catalog No | Unit Price | Quantity | Ext Price |
|---|---|---|---|---|---|
| 1. | RSK-CO2; DoD Level II & IV, Equ_APTIM_GISKey | NA | $120.00 | 3 | $360.00 |
| | | | | **Order Total:** | $360.00 |




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Houston, TX 77099
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**F:** +1 281 530 5887
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# Subcontract Chain of Custody

**SAMPLING STATE:** **Dept of Defense** **COC ID:** **20918**

**SUBCONTRACT TO:**

Eurofins Lancaster Laboratories Envt Testing
2425 New Holland Pike
Lancaster, PA 17601

**Phone:** +1 717 656 2300

**CUSTOMER INFORMATION:**

| | |
|---|---|
| **Company:** | ALS Houston |
| **Contact:** | Dane J. Wacasey |
| **Address:** | 10450 Stancliff Rd, Ste 210 |
| **Phone:** | +1 281 530 5656 |
| **Email:** | Dane.Wacasey@alsglobal.com |
| **Alternate Contact:** | Jumoke M. Lawal |
| **Email:** | jumoke.lawal@alsglobal.com |

**INVOICE INFORMATION:**

| | |
|---|---|
| **Company:** | ALS Houston |
| **Contact:** | Accounts Payable |
| **Address:** | 10450 Stancliff Rd, Ste 210 |
| **Phone:** | +1 281 530 5656 |
| **Reference:** | HS23020330 |
| **TSR:** | Ron Martino |

| | LAB SAMPLE ID | CLIENT SAMPLE ID | MATRIX | COLLECT DATE |
|---|---|---|---|---|
| | ANALYSIS REQUESTED | | | DUE DATE |
| 1. | **HS23020330-01** | **46WW05-230207** | **Water** | **07 Feb 2023 08:20** |
| | RSK-CO2; DoD Level II & IV, Equ_APTIM_GISKey | | | 22 Feb 2023 |
| 2. | **HS23020330-02** | **46WW09-230207** | **Water** | **07 Feb 2023 09:10** |
| | RSK-CO2; DoD Level II & IV, Equ_APTIM_GISKey | | | 22 Feb 2023 |
| 3. | **HS23020330-03** | **46WW09-230207-FD** | **Water** | **07 Feb 2023 09:10** |
| | RSK-CO2; DoD Level II & IV, Equ_APTIM_GISKey | | | 22 Feb 2023 |

**Comments:** Please analyze for the analysis listed above.
Send report to the emails shown above.

**QC Level:** DOD IV (DoD Data Package)

Relinquished By: _____ Date/Time: 2/8/23 1800.

Received By: _____ Date/Time: 2/9/23 10:25

Cooler ID(s): _____ Temperature(s): _____

RIGHT SOLUTIONS | RIGHT PARTNER

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Houston, TX 77099
**T:** +1 281 530 5656
**F:** +1 281 530 5887
**www.alsglobal.com**

# Purchase Order

**PO: HS23020330**

**VENDOR:**

Eurofins Lancaster Laboratories Envt Testing
2425 New Holland Pike
Lancaster, PA 17601

**Phone:** +1 717 656 2300

**CUSTOMER INFORMATION:**

| | |
|---|---|
| **Company:** | ALS Houston |
| **Contact:** | Dane J. Wacasey |
| **Address:** | 10450 Stancliff Rd, Ste 210 |
| **Phone:** | +1 281 530 5656 |
| **Email:** | Dane.Wacasey@alsglobal.com |
| **Alternate Contact:** | Jumoke M. Lawal |
| **Email:** | jumoke.lawal@alsglobal.com |

**INVOICE INFORMATION:**

| | |
|---|---|
| **Company:** | ALS Houston |
| **Contact:** | Accounts Payable |
| **Address:** | 10450 Stancliff Rd, Ste 210 |
| **Phone:** | +1 281 530 5656 |
| **Reference:** | 20918 |
| **TSR:** | Ron Martino |

| | Item | Catalog No | Unit Price | Quantity | Ext Price |
|---|---|---|---|---|---|
| 1. | RSK-CO2; DoD Level II & IV, Equ_APTIM_GISKey | NA | $120.00 | 3 | $360.00 |
| | | | | **Order Total:** | $360.00 |

# Login Sample Receipt Checklist

Client: ALS Group USA, Corp

Job Number: 410-114936-1

**Login Number: 114936**
**List Number: 1**
**Creator: Ballard, Megan**

**List Source: Eurofins Lancaster Laboratories Environment Testing, LLC**

| Question | Answer | Comment |
|---|---|---|
| The cooler's custody seal is intact. | True | |
| The cooler or samples do not appear to have been compromised or tampered with. | True | |
| Samples were received on ice. | True | |
| Cooler Temperature is acceptable (</=6C, not frozen). | True | |
| Cooler Temperature is recorded. | True | |
| WV: Container Temperature is acceptable (</=6C, not frozen). | N/A | |
| WV:  Container Temperature is recorded. | N/A | |
| COC is present. | True | |
| COC is filled out in ink and legible. | True | |
| COC is filled out with all pertinent information. | True | |
| There are no discrepancies between the containers received and the COC. | True | |
| Sample containers have legible labels. | True | |
| Containers are not broken or leaking. | True | |
| Sample collection date/times are provided. | True | |
| Appropriate sample containers are used. | True | |
| Sample bottles are completely filled. | True | |
| There is sufficient vol. for all requested analyses. | True | |
| Is the Field Sampler's name present on COC? | False | Received project as a subcontract. |
| Sample custody seals are intact. | N/A | |
| VOA sample vials do not have headspace >6mm in diameter (none, if from WV)? | True | |

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January 22, 2024

Vicki Graves
Aptim Environmental & Infrastucture, Inc.
10333 Richmond Ave
Ste 1030
Houston, TX 77042

Work Order: **HS23020487**

Laboratory Results for: **LHAAP46 Febuary 2023**

Dear Vicki Graves ,

ALS Environmental received 10 sample(s) on Feb 10, 2023 for the analysis presented in the following report.

This is a REVISED REPORT. Please see the Case Narrative for discussion concerning this revision.

Regards,

**Generated By: DAYNA.FISHER**
Dane J. Wacasey

**ALS Houston, US** Date: 22-Jan-24

**Client:** Aptim Environmental & Infrastucture, Inc.
**Project:** LHAAP46 Febuary 2023
**Work Order:** HS23020487

**SAMPLE SUMMARY**

| Lab Samp ID | Client Sample ID | Matrix | TagNo | Collection Date | Date Received | Hold |
|---|---|---|---|---|---|---|
| HS23020487-01 | 46WW11-230209 | GW | | 09-Feb-2023 07:55 | 10-Feb-2023 09:20 | ☐ |
| HS23020487-02 | LHSMW19-230209 | GW | | 09-Feb-2023 08:40 | 10-Feb-2023 09:20 | ☐ |
| HS23020487-03 | LHSMW19-230209-FD | GW | | 09-Feb-2023 08:40 | 10-Feb-2023 09:20 | ☐ |
| HS23020487-04 | LHSMW23R-230209 | GW | | 09-Feb-2023 09:25 | 10-Feb-2023 09:20 | ☐ |
| HS23020487-05 | LHSMW23R-230209-FD | GW | | 09-Feb-2023 09:25 | 10-Feb-2023 09:20 | ☐ |
| HS23020487-06 | 46WW08-230209 | GW | | 09-Feb-2023 10:10 | 10-Feb-2023 09:20 | ☐ |
| HS23020487-07 | LHSMW25-230209 | GW | | 09-Feb-2023 10:55 | 10-Feb-2023 09:20 | ☐ |
| HS23020487-08 | 46WW17-230209 | GW | | 09-Feb-2023 11:35 | 10-Feb-2023 09:20 | ☐ |
| HS23020487-09 | 46WW06-230209 | GW | | 09-Feb-2023 12:20 | 10-Feb-2023 09:20 | ☐ |
| HS23020487-10 | Trip Blank-230209 | Water | CG-120922-56 | 09-Feb-2023 00:00 | 10-Feb-2023 09:20 | ☐ |

**ALS Houston, US** Date: 22-Jan-24

**Client:** Aptim Environmental & Infrastucture, Inc. **CASE NARRATIVE**
**Project:** LHAAP46 Febuary 2023
**Work Order:** HS23020487

## Work Order Comments

- Revision II: This report was revised 01/22/24 to change the sample ID from 46MW06-230209 to the correct sample ID 46WW06-230209 per client request.

## Work Order Comments

- Revised ID from LHSWW19 to LHSMW19.

  Revised ID LHSWW23R to LHSMW23R.

  Revised ID LHSWW25 to LHSMW25.

- The analysis for CO2 by RSK175 was subcontracted to Eurofins in Lancaster, PA. The final report is appended.

- The analysis for Nitrate was subcontracted to ALS Environmental in Kelso, WA. Final Report attached.

## GC Semivolatiles by Method RSK-175

### Batch ID: R428018

**Sample ID: HS23020497-01MS**

- MS and MSD are for an unrelated sample

## GCMS Volatiles by Method SW8260

### Batch ID: R427850

**Sample ID: HS23020265-04MS**

- MS and MSD are for an unrelated sample

### Batch ID: R427911

**Sample ID: HS23020489-01MS**

- MS and MSD are for an unrelated sample

## WetChemistry by Method SM5310B

### Batch ID: R428760

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

## WetChemistry by Method SW9056

### Batch ID: R428512

**Sample ID: HS23020489-01MS**

- MS and MSD are for an unrelated sample

**ALS Houston, US** Date: 22-Jan-24

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP46 Febuary 2023
Sample ID: 46WW11-230209
Collection Date: 09-Feb-2023 07:55

**ANALYTICAL REPORT**
WorkOrder:HS23020487
Lab ID:HS23020487-01
Matrix:GW

| ANALYSES | RESULT | QUAL | DL | LOD | LOQ | UNITS | DILUTION FACTOR | DATE ANALYZED |
|---|---|---|---|---|---|---|---|---|
| **VOLATILES ORGANICS BY METHOD 8260C** | | **Method:SW8260** | | | | | | Analyst: PC |
| cis-1,2-Dichloroethene | 0.50 | U | 0.20 | 0.50 | 1.0 | ug/L | 1 | 11-Feb-2023 22:04 |
| **Trichloroethene** | **22** | | **0.20** | **0.50** | **1.0** | **ug/L** | 1 | 11-Feb-2023 22:04 |
| Vinyl chloride | 0.50 | U | 0.20 | 0.50 | 1.0 | ug/L | 1 | 11-Feb-2023 22:04 |
| *Surr: 1,2-Dichloroethane-d4* | *101* | | | **0** | *81-118* | *%REC* | *1* | *11-Feb-2023 22:04* |
| *Surr: 4-Bromofluorobenzene* | *107* | | | **0** | *85-114* | *%REC* | *1* | *11-Feb-2023 22:04* |
| *Surr: Dibromofluoromethane* | *93.6* | | | **0** | *80-119* | *%REC* | *1* | *11-Feb-2023 22:04* |
| *Surr: Toluene-d8* | *108* | | | **0** | *89-112* | *%REC* | *1* | *11-Feb-2023 22:04* |
| **DISSOLVED GASES BY RSK-175** | | **Method:RSK-175** | | | | | | Analyst: SAM |
| Ethane | 0.000500 | U | 0.000144 | 0.000500 | 0.00100 | mg/L | 1 | 14-Feb-2023 16:41 |
| Ethene | 0.000500 | U | 0.000234 | 0.000500 | 0.00100 | mg/L | 1 | 14-Feb-2023 16:41 |
| **Methane** | **0.0229** | | **0.000107** | **0.000500** | **0.000500** | **mg/L** | 1 | 14-Feb-2023 16:41 |
| **TOTAL ORGANIC CARBON - SM5310B-2011** | | **Method:SM5310B** | | | | | | Analyst: JAC |
| **Organic Carbon, Total** | **1.74** | | **0.500** | **1.00** | **1.00** | **mg/L** | 1 | 24-Feb-2023 12:02 |
| **ANIONS BY SW9056A** | | **Method:SW9056** | | | | | | Analyst: TH |
| **Chloride** | **142** | | **2.00** | **2.50** | **5.00** | **mg/L** | 10 | 21-Feb-2023 09:05 |
| **Sulfate** | **265** | | **2.00** | **2.50** | **5.00** | **mg/L** | 10 | 21-Feb-2023 09:05 |
| **SUBCONTRACT ANALYSIS - RSK** | | **Method:NA** | | | | | | Analyst: SUB |
| Subcontract Analysis | See Attached | | 0 | 0 | | NA | 1 | 17-Feb-2023 09:03 |
| **SUBCONTRACTED ANALYSIS** | | **Method:NA** | | | | | | Analyst: SUBK |
| Miscellaneous Analysis | See Attached | | 0 | 0 | | NA | 1 | 16-Feb-2023 09:20 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

**Revision:** 2

**ALS Houston, US** Date: 22-Jan-24

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP46 Febuary 2023
Sample ID: LHSMW19-230209
Collection Date: 09-Feb-2023 08:40

**ANALYTICAL REPORT**
WorkOrder:HS23020487
Lab ID:HS23020487-02
Matrix:GW

| ANALYSES | RESULT | QUAL | DL | LOD | LOQ | UNITS | DILUTION FACTOR | DATE ANALYZED |
|---|---|---|---|---|---|---|---|---|
| **VOLATILES ORGANICS BY METHOD 8260C** | **Method:SW8260** | | | | | | | Analyst: PC |
| **cis-1,2-Dichloroethene** | **11** | | **0.20** | **0.50** | **1.0** | **ug/L** | 1 | 11-Feb-2023 19:37 |
| **Trichloroethene** | **24** | | **0.20** | **0.50** | **1.0** | **ug/L** | 1 | 11-Feb-2023 19:37 |
| Vinyl chloride | 0.50 | U | 0.20 | 0.50 | 1.0 | ug/L | 1 | 11-Feb-2023 19:37 |
| *Surr: 1,2-Dichloroethane-d4* | *101* | | | **0** | *81-118* | *%REC* | *1* | *11-Feb-2023 19:37* |
| *Surr: 4-Bromofluorobenzene* | *108* | | | **0** | *85-114* | *%REC* | *1* | *11-Feb-2023 19:37* |
| *Surr: Dibromofluoromethane* | *93.3* | | | **0** | *80-119* | *%REC* | *1* | *11-Feb-2023 19:37* |
| *Surr: Toluene-d8* | *107* | | | **0** | *89-112* | *%REC* | *1* | *11-Feb-2023 19:37* |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

**Revision:** 2

**ALS Houston, US** Date: 22-Jan-24

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP46 Febuary 2023
Sample ID: LHSMW19-230209-FD
Collection Date: 09-Feb-2023 08:40

**ANALYTICAL REPORT**
WorkOrder:HS23020487
Lab ID:HS23020487-03
Matrix:GW

| ANALYSES | RESULT | QUAL | DL | LOD | LOQ | UNITS | DILUTION FACTOR | DATE ANALYZED |
|---|---|---|---|---|---|---|---|---|
| **VOLATILES ORGANICS BY METHOD 8260C** | **Method:SW8260** | | | | | | | Analyst: PC |
| **cis-1,2-Dichloroethene** | **11** | | **0.20** | **0.50** | **1.0** | **ug/L** | 1 | 11-Feb-2023 19:58 |
| **Trichloroethene** | **26** | | **0.20** | **0.50** | **1.0** | **ug/L** | 1 | 11-Feb-2023 19:58 |
| Vinyl chloride | 0.50 | U | 0.20 | 0.50 | 1.0 | ug/L | 1 | 11-Feb-2023 19:58 |
| *Surr: 1,2-Dichloroethane-d4* | *103* | | | **0** | *81-118* | *%REC* | *1* | *11-Feb-2023 19:58* |
| *Surr: 4-Bromofluorobenzene* | *106* | | | **0** | *85-114* | *%REC* | *1* | *11-Feb-2023 19:58* |
| *Surr: Dibromofluoromethane* | *94.9* | | | **0** | *80-119* | *%REC* | *1* | *11-Feb-2023 19:58* |
| *Surr: Toluene-d8* | *108* | | | **0** | *89-112* | *%REC* | *1* | *11-Feb-2023 19:58* |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

**Revision:** 2

**ALS Houston, US** Date: 22-Jan-24

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP46 Febuary 2023
Sample ID: LHSMW23R-230209
Collection Date: 09-Feb-2023 09:25

**ANALYTICAL REPORT**
WorkOrder:HS23020487
Lab ID:HS23020487-04
Matrix:GW

| ANALYSES | RESULT | QUAL | DL | LOD | LOQ | UNITS | DILUTION FACTOR | DATE ANALYZED |
|---|---|---|---|---|---|---|---|---|
| **VOLATILES ORGANICS BY METHOD 8260C** | **Method:SW8260** | | | | | | | Analyst: PC |
| **cis-1,2-Dichloroethene** | **0.77** | J | **0.20** | **0.50** | **1.0** | **ug/L** | 1 | 11-Feb-2023 20:19 |
| **Trichloroethene** | **0.76** | J | **0.20** | **0.50** | **1.0** | **ug/L** | 1 | 11-Feb-2023 20:19 |
| Vinyl chloride | 0.50 | U | 0.20 | 0.50 | 1.0 | ug/L | 1 | 11-Feb-2023 20:19 |
| *Surr: 1,2-Dichloroethane-d4* | *99.9* | | | **0** | *81-118* | *%REC* | *1* | *11-Feb-2023 20:19* |
| *Surr: 4-Bromofluorobenzene* | *108* | | | **0** | *85-114* | *%REC* | *1* | *11-Feb-2023 20:19* |
| *Surr: Dibromofluoromethane* | *93.2* | | | **0** | *80-119* | *%REC* | *1* | *11-Feb-2023 20:19* |
| *Surr: Toluene-d8* | *105* | | | **0** | *89-112* | *%REC* | *1* | *11-Feb-2023 20:19* |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

**Revision:** 2

**ALS Houston, US** Date: 22-Jan-24

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP46 Febuary 2023
Sample ID: LHSMW23R-230209-FD
Collection Date: 09-Feb-2023 09:25

**ANALYTICAL REPORT**
WorkOrder:HS23020487
Lab ID:HS23020487-05
Matrix:GW

| ANALYSES | RESULT | QUAL | DL | LOD | LOQ | UNITS | DILUTION FACTOR | DATE ANALYZED |
|---|---|---|---|---|---|---|---|---|
| **VOLATILES ORGANICS BY METHOD 8260C** | **Method:SW8260** | | | | | | | Analyst: PC |
| **cis-1,2-Dichloroethene** | **0.86** | J | **0.20** | **0.50** | **1.0** | **ug/L** | 1 | 11-Feb-2023 20:40 |
| **Trichloroethene** | **0.78** | J | **0.20** | **0.50** | **1.0** | **ug/L** | 1 | 11-Feb-2023 20:40 |
| Vinyl chloride | 0.50 | U | 0.20 | 0.50 | 1.0 | ug/L | 1 | 11-Feb-2023 20:40 |
| *Surr: 1,2-Dichloroethane-d4* | *101* | | | **0** | *81-118* | *%REC* | *1* | *11-Feb-2023 20:40* |
| *Surr: 4-Bromofluorobenzene* | *107* | | | **0** | *85-114* | *%REC* | *1* | *11-Feb-2023 20:40* |
| *Surr: Dibromofluoromethane* | *93.9* | | | **0** | *80-119* | *%REC* | *1* | *11-Feb-2023 20:40* |
| *Surr: Toluene-d8* | *109* | | | **0** | *89-112* | *%REC* | *1* | *11-Feb-2023 20:40* |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

**Revision:** 2

**ALS Houston, US** Date: 22-Jan-24

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP46 Febuary 2023
Sample ID: 46WW08-230209
Collection Date: 09-Feb-2023 10:10

**ANALYTICAL REPORT**
WorkOrder:HS23020487
Lab ID:HS23020487-06
Matrix:GW

| ANALYSES | RESULT | QUAL | DL | LOD | LOQ | UNITS | DILUTION FACTOR | DATE ANALYZED |
|---|---|---|---|---|---|---|---|---|
| **VOLATILES ORGANICS BY METHOD 8260C** | **Method:SW8260** | | | | | | | Analyst: PC |
| cis-1,2-Dichloroethene | 0.50 | U | 0.20 | 0.50 | 1.0 | ug/L | 1 | 11-Feb-2023 21:01 |
| Trichloroethene | 0.50 | U | 0.20 | 0.50 | 1.0 | ug/L | 1 | 11-Feb-2023 21:01 |
| Vinyl chloride | 0.50 | U | 0.20 | 0.50 | 1.0 | ug/L | 1 | 11-Feb-2023 21:01 |
| *Surr: 1,2-Dichloroethane-d4* | *101* | | | **0** | *81-118* | *%REC* | *1* | *11-Feb-2023 21:01* |
| *Surr: 4-Bromofluorobenzene* | *107* | | | **0** | *85-114* | *%REC* | *1* | *11-Feb-2023 21:01* |
| *Surr: Dibromofluoromethane* | *92.7* | | | **0** | *80-119* | *%REC* | *1* | *11-Feb-2023 21:01* |
| *Surr: Toluene-d8* | *106* | | | **0** | *89-112* | *%REC* | *1* | *11-Feb-2023 21:01* |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

**Revision:** 2

**ALS Houston, US** Date: 22-Jan-24

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP46 Febuary 2023
Sample ID: LHSMW25-230209
Collection Date: 09-Feb-2023 10:55

**ANALYTICAL REPORT**
WorkOrder:HS23020487
Lab ID:HS23020487-07
Matrix:GW

| ANALYSES | RESULT | QUAL | DL | LOD | LOQ | UNITS | DILUTION FACTOR | DATE ANALYZED |
|---|---|---|---|---|---|---|---|---|
| **VOLATILES ORGANICS BY METHOD 8260C** | **Method:SW8260** | | | | | | | Analyst: PC |
| cis-1,2-Dichloroethene | 0.50 | U | 0.20 | 0.50 | 1.0 | ug/L | 1 | 11-Feb-2023 21:22 |
| Trichloroethene | 0.50 | U | 0.20 | 0.50 | 1.0 | ug/L | 1 | 11-Feb-2023 21:22 |
| Vinyl chloride | 0.50 | U | 0.20 | 0.50 | 1.0 | ug/L | 1 | 11-Feb-2023 21:22 |
| *Surr: 1,2-Dichloroethane-d4* | *102* | | | **0** | *81-118* | *%REC* | *1* | *11-Feb-2023 21:22* |
| *Surr: 4-Bromofluorobenzene* | *107* | | | **0** | *85-114* | *%REC* | *1* | *11-Feb-2023 21:22* |
| *Surr: Dibromofluoromethane* | *93.2* | | | **0** | *80-119* | *%REC* | *1* | *11-Feb-2023 21:22* |
| *Surr: Toluene-d8* | *108* | | | **0** | *89-112* | *%REC* | *1* | *11-Feb-2023 21:22* |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

**Revision:** 2

**ALS Houston, US** Date: 22-Jan-24

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP46 Febuary 2023
Sample ID: 46WW17-230209
Collection Date: 09-Feb-2023 11:35

**ANALYTICAL REPORT**
WorkOrder:HS23020487
Lab ID:HS23020487-08
Matrix:GW

| ANALYSES | RESULT | QUAL | DL | LOD | LOQ | UNITS | DILUTION FACTOR | DATE ANALYZED |
|---|---|---|---|---|---|---|---|---|
| **VOLATILES ORGANICS BY METHOD 8260C** | **Method:SW8260** | | | | | | | Analyst: PC |
| cis-1,2-Dichloroethene | 0.50 | U | 0.20 | 0.50 | 1.0 | ug/L | 1 | 11-Feb-2023 21:43 |
| Trichloroethene | 0.50 | U | 0.20 | 0.50 | 1.0 | ug/L | 1 | 11-Feb-2023 21:43 |
| Vinyl chloride | 0.50 | U | 0.20 | 0.50 | 1.0 | ug/L | 1 | 11-Feb-2023 21:43 |
| *Surr: 1,2-Dichloroethane-d4* | *102* | | | **0** | *81-118* | *%REC* | *1* | *11-Feb-2023 21:43* |
| *Surr: 4-Bromofluorobenzene* | *109* | | | **0** | *85-114* | *%REC* | *1* | *11-Feb-2023 21:43* |
| *Surr: Dibromofluoromethane* | *94.1* | | | **0** | *80-119* | *%REC* | *1* | *11-Feb-2023 21:43* |
| *Surr: Toluene-d8* | *107* | | | **0** | *89-112* | *%REC* | *1* | *11-Feb-2023 21:43* |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

**Revision:** 2

**ALS Houston, US** Date: 22-Jan-24

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP46 Febuary 2023
Sample ID: 46WW06-230209
Collection Date: 09-Feb-2023 12:20

**ANALYTICAL REPORT**
WorkOrder:HS23020487
Lab ID:HS23020487-09
Matrix:GW

| ANALYSES | RESULT | QUAL | DL | LOD | LOQ | UNITS | DILUTION FACTOR | DATE ANALYZED |
|---|---|---|---|---|---|---|---|---|
| **VOLATILES ORGANICS BY METHOD 8260C** | **Method:SW8260** | | | | | | | Analyst: PC |
| cis-1,2-Dichloroethene | 0.50 | U | 0.20 | 0.50 | 1.0 | ug/L | 1 | 13-Feb-2023 15:21 |
| Trichloroethene | 0.50 | U | 0.20 | 0.50 | 1.0 | ug/L | 1 | 13-Feb-2023 15:21 |
| Vinyl chloride | 0.50 | U | 0.20 | 0.50 | 1.0 | ug/L | 1 | 13-Feb-2023 15:21 |
| *Surr: 1,2-Dichloroethane-d4* | *99.6* | | | **0** | *81-118* | *%REC* | *1* | *13-Feb-2023 15:21* |
| *Surr: 4-Bromofluorobenzene* | *109* | | | **0** | *85-114* | *%REC* | *1* | *13-Feb-2023 15:21* |
| *Surr: Dibromofluoromethane* | *93.9* | | | **0** | *80-119* | *%REC* | *1* | *13-Feb-2023 15:21* |
| *Surr: Toluene-d8* | *106* | | | **0** | *89-112* | *%REC* | *1* | *13-Feb-2023 15:21* |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

**Revision:** 2

**ALS Houston, US** Date: 22-Jan-24

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP46 Febuary 2023
Sample ID: Trip Blank-230209
Collection Date: 09-Feb-2023 00:00

**ANALYTICAL REPORT**
WorkOrder:HS23020487
Lab ID:HS23020487-10
Matrix:Water

| ANALYSES | RESULT | QUAL | DL | LOD | LOQ | UNITS | DILUTION FACTOR | DATE ANALYZED |
|---|---|---|---|---|---|---|---|---|
| **VOLATILES ORGANICS BY METHOD 8260C** | **Method:SW8260** | | | | | | | Analyst: PC |
| cis-1,2-Dichloroethene | 0.50 | U | 0.20 | 0.50 | 1.0 | ug/L | 1 | 13-Feb-2023 15:00 |
| Trichloroethene | 0.50 | U | 0.20 | 0.50 | 1.0 | ug/L | 1 | 13-Feb-2023 15:00 |
| Vinyl chloride | 0.50 | U | 0.20 | 0.50 | 1.0 | ug/L | 1 | 13-Feb-2023 15:00 |
| *Surr: 1,2-Dichloroethane-d4* | *98.6* | | | **0** | *81-118* | *%REC* | *1* | *13-Feb-2023 15:00* |
| *Surr: 4-Bromofluorobenzene* | *108* | | | **0** | *85-114* | *%REC* | *1* | *13-Feb-2023 15:00* |
| *Surr: Dibromofluoromethane* | *93.7* | | | **0** | *80-119* | *%REC* | *1* | *13-Feb-2023 15:00* |
| *Surr: Toluene-d8* | *107* | | | **0** | *89-112* | *%REC* | *1* | *13-Feb-2023 15:00* |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

**Revision:** 2

**ALS Houston, US** Date: 22-Jan-24

**Client:** Aptim Environmental & Infrastucture, Inc.
**Project:** LHAAP46 Febuary 2023
**WorkOrder:** HS23020487

## DATES REPORT

| Sample ID | Client Samp ID | Collection Date | Leachate Date | Prep Date | Analysis Date | DF |
|---|---|---|---|---|---|---|
| **Batch ID:** R427850 ( 0 ) | **Test Name :** VOLATILES ORGANICS BY METHOD 8260C | | | | **Matrix:** GW | |
| HS23020487-01 | 46WW11-230209 | 09 Feb 2023 07:55 | | | 11 Feb 2023 22:04 | 1 |
| HS23020487-02 | LHSMW19-230209 | 09 Feb 2023 08:40 | | | 11 Feb 2023 19:37 | 1 |
| HS23020487-03 | LHSMW19-230209-FD | 09 Feb 2023 08:40 | | | 11 Feb 2023 19:58 | 1 |
| HS23020487-04 | LHSMW23R-230209 | 09 Feb 2023 09:25 | | | 11 Feb 2023 20:19 | 1 |
| HS23020487-05 | LHSMW23R-230209-FD | 09 Feb 2023 09:25 | | | 11 Feb 2023 20:40 | 1 |
| HS23020487-06 | 46WW08-230209 | 09 Feb 2023 10:10 | | | 11 Feb 2023 21:01 | 1 |
| HS23020487-07 | LHSMW25-230209 | 09 Feb 2023 10:55 | | | 11 Feb 2023 21:22 | 1 |
| HS23020487-08 | 46WW17-230209 | 09 Feb 2023 11:35 | | | 11 Feb 2023 21:43 | 1 |
| **Batch ID:** R427911 ( 0 ) | **Test Name :** VOLATILES ORGANICS BY METHOD 8260C | | | | **Matrix:** Water | |
| HS23020487-10 | Trip Blank-230209 | 09 Feb 2023 00:00 | | | 13 Feb 2023 15:00 | 1 |
| **Batch ID:** R427911 ( 0 ) | **Test Name :** VOLATILES ORGANICS BY METHOD 8260C | | | | **Matrix:** GW | |
| HS23020487-09 | 46WW06-230209 | 09 Feb 2023 12:20 | | | 13 Feb 2023 15:21 | 1 |
| **Batch ID:** R428018 ( 0 ) | **Test Name :** DISSOLVED GASES BY RSK-175 | | | | **Matrix:** GW | |
| HS23020487-01 | 46WW11-230209 | 09 Feb 2023 07:55 | | | 14 Feb 2023 16:41 | 1 |
| **Batch ID:** R428104 ( 0 ) | **Test Name :** SUBCONTRACTED ANALYSIS | | | | **Matrix:** GW | |
| HS23020487-01 | 46WW11-230209 | 09 Feb 2023 07:55 | | | 16 Feb 2023 09:20 | 1 |
| **Batch ID:** R428193 ( 0 ) | **Test Name :** SUBCONTRACT ANALYSIS - RSK | | | | **Matrix:** GW | |
| HS23020487-01 | 46WW11-230209 | 09 Feb 2023 07:55 | | | 17 Feb 2023 09:03 | 1 |
| **Batch ID:** R428512 ( 0 ) | **Test Name :** ANIONS BY SW9056A | | | | **Matrix:** GW | |
| HS23020487-01 | 46WW11-230209 | 09 Feb 2023 07:55 | | | 21 Feb 2023 09:05 | 10 |
| **Batch ID:** R428760 ( 0 ) | **Test Name :** TOTAL ORGANIC CARBON - SM5310B-2011 | | | | **Matrix:** GW | |
| HS23020487-01 | 46WW11-230209 | 09 Feb 2023 07:55 | | | 24 Feb 2023 12:02 | 1 |

**ALS Houston, US** Date: 22-Jan-24

**Client:** Aptim Environmental & Infrastucture, Inc.
**Project:** LHAAP46 Febuary 2023
**WorkOrder:** HS23020487

**QC BATCH REPORT**

**Batch ID: R428018 ( 0 )** **Instrument: FID-4** **Method: DISSOLVED GASES BY RSK-175**

**MBLK** Sample ID: **MBLK-230214** Units: **mg/L** Analysis Date: **14-Feb-2023 08:42**
Client ID: Run ID: **FID-4_428018** SeqNo: **7124177** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Ethane | 0.000500 | 0.00100 | | | | | | | | U |
| Ethene | 0.000500 | 0.00100 | | | | | | | | U |
| Methane | 0.000500 | 0.000500 | | | | | | | | U |

**LCS** Sample ID: **LCS-230214** Units: **mg/L** Analysis Date: **14-Feb-2023 08:51**
Client ID: Run ID: **FID-4_428018** SeqNo: **7124178** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Ethane | 0.0189 | 0.00100 | 0.01804 | 0 | 105 | 75 - 125 | | | | |
| Ethene | 0.0161 | 0.00100 | 0.0168 | 0 | 95.8 | 75 - 125 | | | | |
| Methane | 0.00790 | 0.000500 | 0.009647 | 0 | 81.9 | 75 - 125 | | | | |

**MS** Sample ID: **HS23020497-01MS** Units: **mg/L** Analysis Date: **14-Feb-2023 17:17**
Client ID: Run ID: **FID-4_428018** SeqNo: **7124194** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Ethane | 0.0775 | 0.00100 | 0.01804 | 0 | 429 | 75 - 125 | | | | SE |
| Ethene | 0.0538 | 0.00100 | 0.0168 | 0 | 320 | 75 - 125 | | | | S |
| Methane | 7.27 | 0.000500 | 0.009647 | 7.637 | -3790 | 75 - 125 | | | | SEO |

**MSD** Sample ID: **HS23020497-01MSD** Units: **mg/L** Analysis Date: **14-Feb-2023 18:07**
Client ID: Run ID: **FID-4_428018** SeqNo: **7124195** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Ethane | 0.0602 | 0.00100 | 0.01804 | 0 | 334 | 75 - 125 | 0.07748 | 25.1 | 30 | S |
| Ethene | 0.0610 | 0.00100 | 0.0168 | 0 | 363 | 75 - 125 | 0.05381 | 12.5 | 30 | S |
| Methane | 7.28 | 0.000500 | 0.009647 | 7.637 | -3750 | 75 - 125 | 7.271 | 0.0606 | 30 | SEO |

**The following samples were analyzed in this batch:** HS23020487-01

**ALS Houston, US** Date: 22-Jan-24

**Client:** Aptim Environmental & Infrastucture, Inc.
**Project:** LHAAP46 Febuary 2023
**WorkOrder:** HS23020487

**QC BATCH REPORT**

**Batch ID: R427850 ( 0 )** **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

**MBLK** Sample ID: **VBLKW-230211** Units: **ug/L** Analysis Date: **11-Feb-2023 14:00**
Client ID: Run ID: **VOA6_427850** SeqNo: **7120406** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| cis-1,2-Dichloroethene | 0.50 | 1.0 | | | | | | | | U |
| Trichloroethene | 0.50 | 1.0 | | | | | | | | U |
| Vinyl chloride | 0.50 | 1.0 | | | | | | | | U |
| *Surr: 1,2-Dichloroethane-d4* | *50.07* | *1.0* | *50* | *0* | *100* | *81 - 118* | | | | |
| *Surr: 4-Bromofluorobenzene* | *53.56* | *1.0* | *50* | *0* | *107* | *85 - 114* | | | | |
| *Surr: Dibromofluoromethane* | *47.35* | *1.0* | *50* | *0* | *94.7* | *80 - 119* | | | | |
| *Surr: Toluene-d8* | *53.07* | *1.0* | *50* | *0* | *106* | *89 - 112* | | | | |

**LCS** Sample ID: **VLCSW-230211** Units: **ug/L** Analysis Date: **11-Feb-2023 13:18**
Client ID: Run ID: **VOA6_427850** SeqNo: **7120405** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| cis-1,2-Dichloroethene | 18.49 | 1.0 | 20 | 0 | 92.4 | 78 - 123 | | | | |
| Trichloroethene | 18.29 | 1.0 | 20 | 0 | 91.4 | 79 - 123 | | | | |
| Vinyl chloride | 18.95 | 1.0 | 20 | 0 | 94.7 | 58 - 137 | | | | |
| *Surr: 1,2-Dichloroethane-d4* | *54.8* | *1.0* | *50* | *0* | *110* | *81 - 118* | | | | |
| *Surr: 4-Bromofluorobenzene* | *54.39* | *1.0* | *50* | *0* | *109* | *85 - 114* | | | | |
| *Surr: Dibromofluoromethane* | *49.85* | *1.0* | *50* | *0* | *99.7* | *80 - 119* | | | | |
| *Surr: Toluene-d8* | *50.95* | *1.0* | *50* | *0* | *102* | *89 - 112* | | | | |

**MS** Sample ID: **HS23020265-04MS** Units: **ug/L** Analysis Date: **11-Feb-2023 15:24**
Client ID: Run ID: **VOA6_427850** SeqNo: **7120410** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| cis-1,2-Dichloroethene | 17.38 | 1.0 | 20 | 1.768 | 78.0 | 78 - 123 | | | | |
| Trichloroethene | 44.84 | 1.0 | 20 | 28.68 | 80.8 | 79 - 123 | | | | |
| Vinyl chloride | 11.53 | 1.0 | 20 | 0.4346 | 55.5 | 58 - 137 | | | | S |
| *Surr: 1,2-Dichloroethane-d4* | *50.33* | *1.0* | *50* | *0* | *101* | *81 - 118* | | | | |
| *Surr: 4-Bromofluorobenzene* | *54.23* | *1.0* | *50* | *0* | *108* | *85 - 114* | | | | |
| *Surr: Dibromofluoromethane* | *46.11* | *1.0* | *50* | *0* | *92.2* | *80 - 119* | | | | |
| *Surr: Toluene-d8* | *53.66* | *1.0* | *50* | *0* | *107* | *89 - 112* | | | | |

**ALS Houston, US** Date: 22-Jan-24

**Client:** Aptim Environmental & Infrastucture, Inc.
**Project:** LHAAP46 Febuary 2023
**WorkOrder:** HS23020487

**QC BATCH REPORT**

**Batch ID:** R427850 ( 0 ) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

**MSD** Sample ID: **HS23020265-04MSD** Units: **ug/L** Analysis Date: **11-Feb-2023 15:45**
Client ID: Run ID: **VOA6_427850** SeqNo: **7120411** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| cis-1,2-Dichloroethene | 22.7 | 1.0 | 20 | 1.768 | 105 | 78 - 123 | 17.38 | 26.6 | 20 | R |
| Trichloroethene | 48.93 | 1.0 | 20 | 28.68 | 101 | 79 - 123 | 44.84 | 8.73 | 20 | |
| Vinyl chloride | 14.19 | 1.0 | 20 | 0.4346 | 68.8 | 58 - 137 | 11.53 | 20.7 | 20 | R |
| *Surr: 1,2-Dichloroethane-d4* | *50.69* | *1.0* | *50* | *0* | *101* | *81 - 118* | *50.33* | *0.716* | *20* | |
| *Surr: 4-Bromofluorobenzene* | *53.66* | *1.0* | *50* | *0* | *107* | *85 - 114* | *54.23* | *1.07* | *20* | |
| *Surr: Dibromofluoromethane* | *45.8* | *1.0* | *50* | *0* | *91.6* | *80 - 119* | *46.11* | *0.677* | *20* | |
| *Surr: Toluene-d8* | *53.17* | *1.0* | *50* | *0* | *106* | *89 - 112* | *53.66* | *0.914* | *20* | |

**The following samples were analyzed in this batch:** HS23020487-01 HS23020487-02 HS23020487-03 HS23020487-04 HS23020487-05 HS23020487-06 HS23020487-07 HS23020487-08

**ALS Houston, US** Date: 22-Jan-24

**Client:** Aptim Environmental & Infrastucture, Inc.
**Project:** LHAAP46 Febuary 2023
**WorkOrder:** HS23020487

**QC BATCH REPORT**

**Batch ID: R427911 ( 0 )** **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

**MBLK** Sample ID: **VBLKW-230213** Units: **ug/L** Analysis Date: **13-Feb-2023 14:39**
Client ID: Run ID: **VOA6_427911** SeqNo: **7121683** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| cis-1,2-Dichloroethene | 0.50 | 1.0 | | | | | | | | U |
| Trichloroethene | 0.50 | 1.0 | | | | | | | | U |
| Vinyl chloride | 0.50 | 1.0 | | | | | | | | U |
| *Surr: 1,2-Dichloroethane-d4* | *49.89* | *1.0* | *50* | *0* | *99.8* | *81 - 118* | | | | |
| *Surr: 4-Bromofluorobenzene* | *54.68* | *1.0* | *50* | *0* | *109* | *85 - 114* | | | | |
| *Surr: Dibromofluoromethane* | *47.28* | *1.0* | *50* | *0* | *94.6* | *80 - 119* | | | | |
| *Surr: Toluene-d8* | *53.37* | *1.0* | *50* | *0* | *107* | *89 - 112* | | | | |

**LCS** Sample ID: **VLCSW-230213** Units: **ug/L** Analysis Date: **13-Feb-2023 13:56**
Client ID: Run ID: **VOA6_427911** SeqNo: **7121682** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| cis-1,2-Dichloroethene | 17.21 | 1.0 | 20 | 0 | 86.0 | 78 - 123 | | | | |
| Trichloroethene | 16.57 | 1.0 | 20 | 0 | 82.9 | 79 - 123 | | | | |
| Vinyl chloride | 15.8 | 1.0 | 20 | 0 | 79.0 | 58 - 137 | | | | |
| *Surr: 1,2-Dichloroethane-d4* | *58.4* | *1.0* | *50* | *0* | *117* | *81 - 118* | | | | |
| *Surr: 4-Bromofluorobenzene* | *55.66* | *1.0* | *50* | *0* | *111* | *85 - 114* | | | | |
| *Surr: Dibromofluoromethane* | *51.64* | *1.0* | *50* | *0* | *103* | *80 - 119* | | | | |
| *Surr: Toluene-d8* | *52.29* | *1.0* | *50* | *0* | *105* | *89 - 112* | | | | |

**MS** Sample ID: **HS23020489-01MS** Units: **ug/L** Analysis Date: **13-Feb-2023 16:45**
Client ID: Run ID: **VOA6_427911** SeqNo: **7121689** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| cis-1,2-Dichloroethene | 19.45 | 1.0 | 20 | 0 | 97.2 | 78 - 123 | | | | |
| Trichloroethene | 21.47 | 1.0 | 20 | 0 | 107 | 79 - 123 | | | | |
| Vinyl chloride | 10.81 | 1.0 | 20 | 0 | 54.1 | 58 - 137 | | | | S |
| *Surr: 1,2-Dichloroethane-d4* | *50.68* | *1.0* | *50* | *0* | *101* | *81 - 118* | | | | |
| *Surr: 4-Bromofluorobenzene* | *53.01* | *1.0* | *50* | *0* | *106* | *85 - 114* | | | | |
| *Surr: Dibromofluoromethane* | *47.19* | *1.0* | *50* | *0* | *94.4* | *80 - 119* | | | | |
| *Surr: Toluene-d8* | *54.76* | *1.0* | *50* | *0* | *110* | *89 - 112* | | | | |

**ALS Houston, US** Date: 22-Jan-24

**Client:** Aptim Environmental & Infrastucture, Inc.
**Project:** LHAAP46 Febuary 2023
**WorkOrder:** HS23020487

**QC BATCH REPORT**

**Batch ID:** R427911 ( 0 ) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

**MSD** Sample ID: **HS23020489-01MSD** Units: **ug/L** Analysis Date: **13-Feb-2023 17:06**
Client ID: Run ID: **VOA6_427911** SeqNo: **7121690** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| cis-1,2-Dichloroethene | 17.78 | 1.0 | 20 | 0 | 88.9 | 78 - 123 | 19.45 | 8.96 | 20 | |
| Trichloroethene | 19.67 | 1.0 | 20 | 0 | 98.4 | 79 - 123 | 21.47 | 8.72 | 20 | |
| Vinyl chloride | 9.513 | 1.0 | 20 | 0 | 47.6 | 58 - 137 | 10.81 | 12.8 | 20 | S |
| *Surr: 1,2-Dichloroethane-d4* | *50.98* | *1.0* | *50* | *0* | *102* | *81 - 118* | *50.68* | *0.606* | *20* | |
| *Surr: 4-Bromofluorobenzene* | *53.93* | *1.0* | *50* | *0* | *108* | *85 - 114* | *53.01* | *1.71* | *20* | |
| *Surr: Dibromofluoromethane* | *46.14* | *1.0* | *50* | *0* | *92.3* | *80 - 119* | *47.19* | *2.27* | *20* | |
| *Surr: Toluene-d8* | *54.13* | *1.0* | *50* | *0* | *108* | *89 - 112* | *54.76* | *1.15* | *20* | |

**The following samples were analyzed in this batch:** HS23020487-09 HS23020487-10

**ALS Houston, US** Date: 22-Jan-24

**Client:** Aptim Environmental & Infrastucture, Inc.
**Project:** LHAAP46 Febuary 2023
**WorkOrder:** HS23020487

**QC BATCH REPORT**

**Batch ID: R428512 ( 0 )** **Instrument: ICS-Integrion** **Method: ANIONS BY SW9056A**

**MBLK** Sample ID: **MBLK** Units: **mg/L** Analysis Date: **21-Feb-2023 06:46**
Client ID: Run ID: **ICS-Integrion_428512** SeqNo: **7139432** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 0.250 | 0.500 | | | | | | | | U |
| Sulfate | 0.250 | 0.500 | | | | | | | | U |

**LCS** Sample ID: **LCS** Units: **mg/L** Analysis Date: **21-Feb-2023 07:03**
Client ID: Run ID: **ICS-Integrion_428512** SeqNo: **7139433** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 20.32 | 0.500 | 20 | 0 | 102 | 80 - 120 | | | | |
| Sulfate | 20.72 | 0.500 | 20 | 0 | 104 | 80 - 120 | | | | |

**MS** Sample ID: **HS23020489-01MS** Units: **mg/L** Analysis Date: **21-Feb-2023 09:46**
Client ID: Run ID: **ICS-Integrion_428512** SeqNo: **7139498** PrepDate: DF: **100**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 8811 | 50.0 | 1000 | 7958 | 85.2 | 80 - 120 | | | | O |
| Sulfate | 6796 | 50.0 | 1000 | 6121 | 67.5 | 80 - 120 | | | | SO |

**MSD** Sample ID: **HS23020489-01MSD** Units: **mg/L** Analysis Date: **21-Feb-2023 09:52**
Client ID: Run ID: **ICS-Integrion_428512** SeqNo: **7139499** PrepDate: DF: **100**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 8800 | 50.0 | 1000 | 7958 | 84.2 | 80 - 120 | 8811 | 0.117 | 20 | O |
| Sulfate | 6799 | 50.0 | 1000 | 6121 | 67.8 | 80 - 120 | 6796 | 0.049 | 20 | SO |

**The following samples were analyzed in this batch:** HS23020487-01

**Revision:** 2

**ALS Houston, US** Date: 22-Jan-24

**Client:** Aptim Environmental & Infrastucture, Inc.
**Project:** LHAAP46 Febuary 2023
**WorkOrder:** HS23020487

**QC BATCH REPORT**

**Batch ID:** R428760 ( 0 ) **Instrument:** TOC_04 **Method:** TOTAL ORGANIC CARBON - SM5310B-2011

**MBLK** Sample ID: **MBLK-02242023** Units: **mg/L** Analysis Date: **24-Feb-2023 10:56**
Client ID: Run ID: **TOC_04_428760** SeqNo: **7144596** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Organic Carbon, Total | 1.00 | 1.00 | | | | | | | | U |

**LCS** Sample ID: **LCS-02242023** Units: **mg/L** Analysis Date: **24-Feb-2023 11:09**
Client ID: Run ID: **TOC_04_428760** SeqNo: **7144597** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Organic Carbon, Total | 10.48 | 1.00 | 10 | 0 | 105 | 85 - 115 | | | | |

**LCSD** Sample ID: **LCSD-02242023** Units: **mg/L** Analysis Date: **24-Feb-2023 11:23**
Client ID: Run ID: **TOC_04_428760** SeqNo: **7144598** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Organic Carbon, Total | 10.39 | 1.00 | 10 | 0 | 104 | 85 - 115 | 10.48 | 0.862 | 20 | |

**MS** Sample ID: **HS23021101-01MS** Units: **mg/L** Analysis Date: **24-Feb-2023 11:50**
Client ID: Run ID: **TOC_04_428760** SeqNo: **7144600** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Organic Carbon, Total | 19.6 | 1.00 | 10 | 8.51 | 111 | 80 - 120 | | | | |

**The following samples were analyzed in this batch:** HS23020487-01

**ALS Houston, US** Date: 22-Jan-24

**Client:** Aptim Environmental & Infrastucture, Inc.
**Project:** LHAAP46 Febuary 2023
**WorkOrder:** **HS23020487**

**QUALIFIERS, ACRONYMS, UNITS**

| Qualifier | Description |
|---|---|
| * | Value exceeds Regulatory Limit |
| a | Not accredited |
| B | Analyte detected in the associated Method Blank above the Reporting Limit |
| E | Value above quantitation range |
| H | Analyzed outside of Holding Time |
| J | Analyte detected below quantitation limit |
| M | Manually integrated, see raw data for justification |
| n | Not offered for accreditation |
| ND | Not Detected at the Reporting Limit |
| O | Sample amount is > 4 times amount spiked |
| P | Dual Column results percent difference > 40% |
| R | RPD above laboratory control limit |
| S | Spike Recovery outside laboratory control limits |
| U | Analyzed but not detected above the MDL/SDL |

| Acronym | Description |
|---|---|
| DCS | Detectability Check Study |
| DUP | Method Duplicate |
| LCS | Laboratory Control Sample |
| LCSD | Laboratory Control Sample Duplicate |
| MBLK | Method Blank |
| MDL | Method Detection Limit |
| MQL | Method Quantitation Limit |
| MS | Matrix Spike |
| MSD | Matrix Spike Duplicate |
| PDS | Post Digestion Spike |
| PQL | Practical Quantitaion Limit |
| SD | Serial Dilution |
| SDL | Sample Detection Limit |
| TRRP | Texas Risk Reduction Program |

| Unit Reported | Description |
|---|---|
| mg/L | Milligrams per Liter |

**ALS Houston, US** Date: 22-Jan-24

## CERTIFICATIONS,ACCREDITATIONS & LICENSES

| Agency | Number | Expire Date |
|---|---|---|
| Arkansas | 88-00356 | 27-Mar-2024 |
| California | 2919; 2024 | 30-Apr-2024 |
| Dept of Defense | L23-358 | 31-May-2025 |
| Florida | E87611-38 | 30-Jun-2024 |
| Illinois | 2000322023-11 | 30-Jun-2024 |
| Kansas | E-10352 2023-2024 | 31-Jul-2024 |
| Louisiana | 03087 2023-2024 | 30-Jun-2024 |
| Maryland | 343; 2023-2024 | 30-Jun-2024 |
| North Carolina | 624 - 2024 | 31-Dec-2024 |
| North Dakota | R-193 2023-2024 | 30-Apr-2024 |
| Oklahoma | 2023-140 | 31-Aug-2024 |
| Texas | T104704231-23-32 | 30-Apr-2024 |
| Utah | TX026932023-14 | 31-Jul-2024 |

**ALS Houston, US** Date: 22-Jan-24

## Sample Receipt Checklist

**Work Order ID:** HS23020487 **Date/Time Received:** **10-Feb-2023 09:20**

**Client Name:** CBI-Houston **Received by:** **Malcolm Burleson**

**Completed By:** */S/ Corey Grandits* (eSignature) 10-Feb-2023 12:10 (Date/Time) **Reviewed by:** */S/ Dane J. Wacasey* (eSignature) 24-Feb-2023 21:34 (Date/Time)

Matrices: **W** Carrier name: **FedEx**

| | | | |
|---|---|---|---|
| Shipping container/cooler in good condition? | Yes ☑ | No ☐ | Not Present ☐ |
| Custody seals intact on shipping container/cooler? | Yes ☑ | No ☐ | Not Present ☐ |
| Custody seals intact on sample bottles? | Yes ☐ | No ☐ | Not Present ☑ |
| VOA/TX1005/TX1006 Solids in hermetically sealed vials? | Yes ☐ | No ☐ | Not Present ☑ |
| Chain of custody present? | Yes ☑ | No ☐ | 2 Page(s) |
| Chain of custody signed when relinquished and received? | Yes ☑ | No ☐ | |
| Samplers name present on COC? | Yes ☑ | No ☐ | |
| Chain of custody agrees with sample labels? | Yes ☑ | No ☐ | |
| Samples in proper container/bottle? | Yes ☑ | No ☐ | |
| Sample containers intact? | Yes ☑ | No ☐ | |
| Sufficient sample volume for indicated test? | Yes ☑ | No ☐ | |
| All samples received within holding time? | Yes ☑ | No ☐ | |
| Container/Temp Blank temperature in compliance? | Yes ☑ | No ☐ | |

| | | |
|---|---|---|
| Temperature(s)/Thermometer(s): | 2.2UC/1.7C | IR31 |
| Cooler(s)/Kit(s): | 46374 | |
| Date/Time sample(s) sent to storage: | 2/10/23 | |

| | | | |
|---|---|---|---|
| Water - VOA vials have zero headspace? | Yes ☑ | No ☐ | No VOA vials submitted ☐ |
| Water - pH acceptable upon receipt? | Yes ☑ | No ☐ | N/A ☐ |
| pH adjusted? | Yes ☐ | No ☑ | N/A ☐ |
| pH adjusted by: | | | |

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

Corrective Action:

# CHAIN OF CUSTODY

Name Of Lab Shipping To: ALS 10450 Stancliff Rd. Suite 210 Houston, TX. 77099 (281) 575-2190 ATTN: Dane Wacasey

**HS23020487**

Aptim Environmental & Infrastucture, Inc.
LHAAP46 Febuary 2023

| Project: APTIM / ARMY AMMN. PLANT (LHAAP) / GROUNDWATER TREATMENT PLANT (GWTP) / KARNACK, TEXAS | LONGHORN | Project No. 501032 |
|---|---|---|
| Job: **LHAAP46 February 2023** | | |
| Prepared By: Scott Beesinger | | P.O. Number |

| Field Sample I.D. | Sample Matrix | Date / Time | MS / MSD | No. OF CONTAINERS | VOC by SW 8260B | TOC by SM5310C | MEE by RSK 175 | Anions (chloride sulfate, nitrate) by SW9056 | CO2 by RSK 175 | Ana | | | | Remarks (Preservatives, etc.) | Lab I.D.# |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 46wwl1-230209 | wG | 2/9/23 0755 | | 12 | X | X | X | X | X | | | | | | |
| LHSmw19-230209 | wG | 2/9/23 0840 | | 3 | X | | | | | | | | | | |
| LHSmw19-230209-FD | wG | 2/9/23 0840 | | 3 | X | | | | | | | | | | |
| LHSmw23R-230209 | wG | 2/9/23 0925 | | 3 | X | | | | | | | | | | |
| LHSmw23R-230209-FD | wG | 2/9/23 0925 | | 3 | X | | | | | | | | | | |
| 46wwo8-230209 | wG | 2/9/23 1010 | | 3 | X | | | | | | | | | | |
| LHSmw25-230209 | wG | 2/9/23 1055 | | 3 | X | | | | | | | | | | |
| 46wwl7-230209 | wG | 2/9/23 1135 | | 3 | X | | | | | | | | | | |

Additional Remarks: **Standard TAT on all parameters. Please email results to Vicki.Graves@aptim.com and invoices to fedinvoices@aptim.com**

| Relinquished By: | Date | Time | Received By: | Date | Time | Relinquished By: | Date | Time | Received By: | Date | Time |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Scott Beesinger | 2/9/23 | 1430 | | 2/10/2023 | 0720 | | | | | | |

**For Lab Use Only**

| Received At Lab By: | Date | Time | Airbill No. | Opened By: | Date | Time | Temp of Container | Seal No. | Condition |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |

Remarks:

1R31
2,2uc 46374
-> 5c.

(Word) S:\l-ces\Forms\Chain of Custody - BiWeekly

01255106

# CHAIN OF CUSTODY

Name Of Lab Shipping To: ALS 10450 Stancliff Rd. Suite 210 Houston, TX. 77099 (281) 575-2190 ATTN: Dane Wacasey

Page 1 of 1

| | |
|---|---|
| **Project:** APTIM LONGHORN<br>ARMY AMMN. PLANT (LHAAP)<br>GROUNDWATER TREATMENT PLANT (GWTP)<br>KARNACK, TEXAS | **Project No.**<br>501032 |
| **Job:**<br>**LHAAP46 February 2023** | |
| **Prepared By:**<br>Scott Beesinger | **P.O. Number** |

**HS23020487**

Aptim Environmental & Infrastucture, Inc.

LHAAP46 Febuary 2023

| Field Sample I.D. | Sample Matrix | Date / Time | MS / MSD | No. OF CONTAINERS | Analyses: VOC by SW 8260B | TOC by SM5310C | MEE by RSK 175 | Anions (chloride sulfate, nitrate) by SW9056 | CO2 by RSK 175 | Remarks (Preservatives, etc.) | Lab I.D.# |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 46WWG6-230209 | WG | 2/9/23 1220 | | 3 | X | | | | | | |
| TRIP BLANK-230209 | W | 2/9/23 | | 2 | X | | | | | | |

Additional Remarks: **Standard TAT on all parameters. Please email results to Vicki.Graves@aptim.com and invoices to fedinvoices@aptim.com**

| Relinquished By: | Date | Time | Received By: | Date | Time | Relinquished By: | Date | Time | Received By: | Date | Time |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Scott Beesinger | 2/9/23 | 1430 | | 02/10/23 | 0720 | | | | | | |

**For Lab Use Only**

| Received At Lab By: | Date | Time | Airbill No. | Opened By: | Date | Time | Temp of Container | Seal No. | Condition |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |

Remarks:

1R31
2,2uC 463744
-0.5C

(Word) S:\I-ces\Forms\Chain of Custody - BiWeekly

01255107

ALS
10450 Stancliff Rd., Suite 210
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5867

49374

**CUSTODY SEAL**

Date: 2/9/23 Time: 1430
Name: Scott Beesinger
Company: APTIM

Seal Broken By: SM
Date: 02/10/23

49374 FEB 10 2023

49374

ORIGIN ID:SGRA (903) 930-6183
SCOTT BEESINGER
APTIM ENVIRONMENTAL & INFRASTRUCTURE
1203-B EAST GRAND AVE
PMB 202
MARSHALL, TX 75670
UNITED STATES US

SHIP DATE: 01FEB23
ACTWGT: 1.00 LB MAN
CAD: 0221247/CAFE3616
DIMS: 18x16x13 IN

TO **SHIPPING DEPT**
**ALS LABORATORY GROUP**
**10450 STANCLIFF RD**
**SUITE 210**
**HOUSTON TX 77099**
(281) 530-5656
REF: LHAPP 04 - BO90654 - DW

RMA:

FedEx Express

FedEx.
TRK# 0221 6230 2994 8028

FRI - 10 FEB AA
PRIORITY OVERNIGHT

AB SGRA

77099
TX-US
IAH

4238674 09Feb2023 CGOA 5816J/B802/C0B8

ALS Environmental
ALS Group USA, Corp
1317 South 13th Avenue
Kelso, WA 98626
**T :** +1 360 577 7222
**F :** +1 360 636 1068
**www.alsglobal.com**

February 14, 2023

**Analytical Report for Service Request No:** K2301826

Dane Wacasey
ALS Group USA, Corp.
10450 Stancliff Road
Suite 210
Houston, TX 77099-4338

**RE: HS23020487**

Dear Dane,

Enclosed are the results of the sample(s) submitted to our laboratory February 11, 2023
For your reference, these analyses have been assigned our service request number **K2301826.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3376. You may also contact me via email at Mark.Harris@alsglobal.com.

Respectfully submitted,

**ALS Group USA, Corp. dba ALS Environmental**

Mark Harris
Project Manager

ALS Environmental
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**T :** +1 360 577 7222
**F :** +1 360 636 1068
**www.alsglobal.com**

# Table of Contents

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State Certifications, Accreditations, And Licenses
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General Chemistry

**Acronyms**

| | |
|---|---|
| ASTM | American Society for Testing and Materials |
| A2LA | American Association for Laboratory Accreditation |
| CARB | California Air Resources Board |
| CAS Number | Chemical Abstract Service registry Number |
| CFC | Chlorofluorocarbon |
| CFU | Colony-Forming Unit |
| DEC | Department of Environmental Conservation |
| DEQ | Department of Environmental Quality |
| DHS | Department of Health Services |
| DOE | Department of Ecology |
| DOH | Department of Health |
| EPA | U. S. Environmental Protection Agency |
| ELAP | Environmental Laboratory Accreditation Program |
| GC | Gas Chromatography |
| GC/MS | Gas Chromatography/Mass Spectrometry |
| LOD | Limit of Detection |
| LOQ | Limit of Quantitation |
| LUFT | Leaking Underground Fuel Tank |
| M | Modified |
| MCL | Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA. |
| MDL | Method Detection Limit |
| MPN | Most Probable Number |
| MRL | Method Reporting Limit |
| NA | Not Applicable |
| NC | Not Calculated |
| NCASI | National Council of the Paper Industry for Air and Stream Improvement |
| ND | Not Detected |
| NIOSH | National Institute for Occupational Safety and Health |
| PQL | Practical Quantitation Limit |
| RCRA | Resource Conservation and Recovery Act |
| SIM | Selected Ion Monitoring |
| TPH | Total Petroleum Hydrocarbons |
| tr | Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL. |

## Inorganic Data Qualifiers

| | |
|---|---|
| * | The result is an outlier. See case narrative. |
| # | The control limit criteria is not applicable. |
| B | The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards. |
| E | The result is an estimate amount because the value exceeded the instrument calibration range. |
| J | The result is an estimated value. |
| U | The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution. |
| i | The MRL/MDL or LOQ/LOD is elevated due to a matrix interference. |
| X | See case narrative. |
| Q | See case narrative. One or more quality control criteria was outside the limits. |
| H | The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory. |

## Metals Data Qualifiers

| | |
|---|---|
| # | The control limit criteria is not applicable. |
| J | The result is an estimated value. |
| E | The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample. |
| M | The duplicate injection precision was not met. |
| N | The Matrix Spike sample recovery is not within control limits. See case narrative. |
| S | The reported value was determined by the Method of Standard Additions (MSA). |
| U | The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution. |
| W | The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance. |
| i | The MRL/MDL or LOQ/LOD is elevated due to a matrix interference. |
| X | See case narrative. |
| + | The correlation coefficient for the MSA is less than 0.995. |
| Q | See case narrative. One or more quality control criteria was outside the limits. |

## Organic Data Qualifiers

| | |
|---|---|
| * | The result is an outlier. See case narrative. |
| # | The control limit criteria is not applicable. See case narrative. |
| A | A tentatively identified compound, a suspected aldol-condensation product. |
| B | The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards. |
| C | The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data. |
| D | The reported result is from a dilution. |
| E | The result is an estimated value. |
| J | The result is an estimated value. |
| N | The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed. |
| P | The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results. |
| U | The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution. |
| i | The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference. |
| X | See case narrative. |
| Q | See case narrative. One or more quality control criteria was outside the limits. |

## Additional Petroleum Hydrocarbon Specific Qualifiers

| | |
|---|---|
| F | The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard. |
| L | The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard. |
| H | The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard. |
| O | The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard. |
| Y | The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard. |
| Z | The chromatographic fingerprint does not resemble a petroleum product. |

**ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso**
**State Certifications, Accreditations, and Licenses**

| Agency | Web Site | Number |
|---|---|---|
| Alaska DEH | http://dec.alaska.gov/eh/lab/cs/csapproval.htm | UST-040 |
| Arizona DHS | http://www.azdhs.gov/lab/license/env.htm | AZ0339 |
| Arkansas - DEQ | http://www.adeq.state.ar.us/techsvs/labcert.htm | 88-0637 |
| California DHS (ELAP) | http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx | 2795 |
| DOD ELAP | http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm | L16-58-R4 |
| Florida DOH | http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm | E87412 |
| Hawaii DOH | http://health.hawaii.gov/ | - |
| ISO 17025 | http://www.pjlabs.com/ | L16-57 |
| Louisiana DEQ | http://www.deq.louisiana.gov/page/la-lab-accreditation | 03016 |
| Maine DHS | http://www.maine.gov/dhhs/ | WA01276 |
| Minnesota DOH | http://www.health.state.mn.us/accreditation | 053-999-457 |
| Nevada DEP | http://ndep.nv.gov/bsdw/labservice.htm | WA01276 |
| New Jersey DEP | http://www.nj.gov/dep/enforcement/oqa.html | WA005 |
| New York - DOH | https://www.wadsworth.org/regulatory/elap | 12060 |
| North Carolina DEQ | https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification | 605 |
| Oklahoma DEQ | http://www.deq.state.ok.us/CSDnew/labcert.htm | 9801 |
| Oregon – DEQ (NELAP) | http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx | WA100010 |
| South Carolina DHEC | http://www.scdhec.gov/environment/EnvironmentalLabCertification/ | 61002 |
| Texas CEQ | http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html | T104704427 |
| Washington DOE | http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html | C544 |
| Wyoming (EPA Region 8) | https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water- | - |
| Kelso Laboratory Website | www.alsglobal.com | NA |

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.
Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.

# Case Narrative

**ALS Environmental—Kelso Laboratory**
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

1317 South 13th Ave, Kelso, WA 98626 | 1-360-577-7222 | www.alsglobal.com

**Client:** ALS Environmental - US
**Project:** HS23020487
**Sample Matrix:** Water

**Service Request:** K2301826
**Date Received:** 02/11/2023

## CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples for the Tier level II requested by the client.

**Sample Receipt:**

One water sample was received for analysis at ALS Environmental on 02/11/2023. Any discrepancies upon initial sample inspection are annotated on the sample receipt and preservation form included within this report. The sample was stored at minimum in accordance with the analytical method requirements.

**General Chemistry:**

Method 9056A, 02/11/2023:Sample 46WW11-230209 was received past holding time. The analysis was performed as soon as possible after receipt by the laboratory. The data was flagged to indicate the holding time violation.

Approved by _____ Date 02/14/2023

# Chain of Custody

**ALS Environmental—Kelso Laboratory**
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com



V23018826

10450 Stancliff Rd, Ste 210
Houston, TX 77099
**T:** +1 281 530 5656
**F:** +1 281 530 5887
**www.alsglobal.com**

# Subcontract Chain of Custody

**SAMPLING STATE:** **Dept of Defense** **COC ID:** **20937**

**SUBCONTRACT TO:**

ALS Environmental Kelso
1317 S. 13th Avenue
Kelso, WA 98626

**Phone:** +1 360 501 3312

**CUSTOMER INFORMATION:**

| | |
|---|---|
| **Company:** | ALS Houston |
| **Contact:** | Dane J. Wacasey |
| **Address:** | 10450 Stancliff Rd, Ste 210 |
| **Phone:** | +1 281 530 5656 |
| **Email:** | Dane.Wacasey@alsglobal.com |
| **Alternate Contact:** | Jumoke M. Lawal |
| **Email:** | jumoke.lawal@alsglobal.com |

**INVOICE INFORMATION:**

| | |
|---|---|
| **Company:** | ALS Houston |
| **Contact:** | Accounts Payable |
| **Address:** | 10450 Stancliff Rd, Ste 210 |
| **Phone:** | +1 281 530 5656 |
| **Reference:** | HS23020487 |
| **TSR:** | Ron Martino |

| | LAB SAMPLE ID | CLIENT SAMPLE ID | MATRIX | COLLECT DATE |
|---|---|---|---|---|
| | ANALYSIS REQUESTED | | | DUE DATE |
| **1.** | **HS23020487-01** | **46WW11-230209** | **Water** | **09 Feb 2023 07:55** |
| | 9056 Nitrate DoD Level II & IV, Equ_APTIM_GISKey | | | 24 Feb 2023 |

**Comments:** Please analyze for the analysis listed above.
Send report to the emails shown above.

**QC Level:** DOD IV (DoD Data Package)

Relinquished By: _____ Date/Time: 2/10/23 1800.

Received By: Josh McPherson ALS Date/Time: 2-11-23 1040

Cooler ID(s): _____ Temperature(s): _____

PM LB

# Cooler Receipt and Preservation Form

Client ALS Houston Service Request K23 01826

Received: 2-11-23 Opened: 2-11-23 By: YM Unloaded: 2-11-23 By: YM

1. Samples were received via? *USPS* (*Fed Ex*) *UPS* *DHL* *PDX* *Courier* *Hand Delivered*
2. Samples were received in: (circle) (*Cooler*) *Box* *Envelope* *Other*_____ *NA*
3. Were custody seals on coolers? NA (Y) N If yes, how many and where? 1 FRNT 1 BACK
   If present, were custody seals intact? (Y) N If present, were they signed and dated? (Y) N

| Temp Blank | Sample Temp | IR Gun | Cooler #/COC ID / NA | Out of temp indicate with "X" | PM Notified If out of temp | Tracking Number NA | Filed |
|---|---|---|---|---|---|---|---|
| 1.5 | | T201 | 20137 | | | 6230 29951263 | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

4. Was a Temperature Blank present in cooler? NA (Y) N If yes, notate the temperature in the appropriate column above:
   If no, take the temperature of a representative sample bottle contained within the cooler; notate in the column "Sample Temp":
5. Were samples received within the method specified temperature ranges? NA (Y) N
   If no, were they received on ice and same day as collected? If not, notate the cooler # above and notify the PM. (NA) Y N

If applicable, tissue samples were received: *Frozen* *Partially Thawed* *Thawed*

6. Packing material: *Inserts* (*Baggies*) (*Bubble Wrap*) *Gel Packs* (*Wet Ice*) *Dry Ice* *Sleeves* _____
7. Were custody papers properly filled out (ink, signed, etc.)? NA (Y) N
8. Were samples received in good condition (unbroken) NA (Y) N
9. Were all sample labels complete (ie, analysis, preservation, etc.)? NA (Y) N
10. Did all sample labels and tags agree with custody papers? NA (Y) N
11. Were appropriate bottles/containers and volumes received for the tests indicated? NA (Y) N
12. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* (NA) (Y) 1H N
13. Were VOA vials received without headspace? *Indicate in the table below.* (NA) Y N
14. Was C12/Res negative? (NA) Y N
15. Were samples received within the method specified time limit? If not, notate the error below and notify the PM (NA) Y N
16. Were 100ml sterile microbiology bottles filled exactly to the 100ml mark? (NA) Y N Underfilled Overfilled

| Sample ID on Bottle | Sample ID on COC | Identified by: |
|---|---|---|
| | | |
| | | |
| | | |

| Sample ID | Bottle Count Bottle Type | Head-space | Broke | pH | Reagent | Volume added | Reagent Lot Number | Initials | Time |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

Notes, Discrepancies, Resolutions: _____

# General Chemistry

**ALS Environmental—Kelso Laboratory**
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

**ALS Group USA, Corp.**
**dba ALS Environmental**

Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | ALS Environmental - US | **Service Request:** | K2301826 |
| **Project:** | HS23020487 | **Date Collected:** | 02/9/23 |
| **Sample Matrix:** | Water | **Date Received:** | 02/11/23 |
| **Analysis Method:** | 9056A | **Units:** | mg/L |
| **Prep Method:** | None | **Basis:** | NA |

**Nitrate as Nitrogen**

| Sample Name | Lab Code | Result | LOQ | LOD | MDL | Dil. | Date Analyzed | Q |
|---|---|---|---|---|---|---|---|---|
| 46WW11-230209 | K2301826-001 | ND U | 0.20 | 0.04 | 0.02 | 2 | 02/11/23 14:05 | * |
| Method Blank | K2301826-MB1 | ND U | 0.10 | 0.02 | 0.008 | 1 | 02/10/23 15:10 | |
| Method Blank | K2301826-MB2 | ND U | 0.10 | 0.02 | 0.008 | 1 | 02/10/23 20:46 | |

**ALS Group USA, Corp.**
**dba ALS Environmental**

QA/QC Report

| | | | |
|---|---|---|---|
| **Client:** | ALS Environmental - US | **Service Request:** | K2301826 |
| **Project:** | HS23020487 | **Date Analyzed:** | 02/10/23 |
| **Sample Matrix:** | Water | **Date Extracted:** | NA |

**Lab Control Sample Summary**
**Nitrate as Nitrogen**

| | | | |
|---|---|---|---|
| **Analysis Method:** | 9056A | **Units:** | mg/L |
| **Prep Method:** | None | **Basis:** | NA |
| | | **Analysis Lot:** | 794318 |

| Sample Name | Lab Code | Result | Spike Amount | % Rec | % Rec Limits |
|---|---|---|---|---|---|
| Lab Control Sample | K2301826-LCS1 | 2.46 | 2.50 | 99 | 85-115 |
| Lab Control Sample | K2301826-LCS2 | 2.48 | 2.50 | 99 | 85-115 |

**ALS Group USA, Corp.**
**dba ALS Environmental**

QA/QC Report

**Client:** ALS Environmental - US **Service Request:** K2301826
**Project:** HS23020487

## Continuing Calibration Verification (CCV) Summary

**Nitrate as Nitrogen**

**Analysis Method:** 9056A **Units:** mg/L

| | Analysis Lot | Lab Code | Date Analyzed | True Value | Measured Value | Percent Recovery | Acceptance Limits |
|---|---|---|---|---|---|---|---|
| CCV1 | 794318 | KQ2302781-01 | 02/10/23 14:33 | 2.50 | 2.47 | 99 | 90-110 |
| CCV2 | 794318 | KQ2302781-02 | 02/10/23 17:30 | 2.50 | 2.47 | 99 | 90-110 |
| CCV3 | 794318 | KQ2302781-03 | 02/10/23 20:04 | 2.50 | 2.47 | 99 | 90-110 |
| CCV4 | 794318 | KQ2302781-04 | 02/10/23 22:14 | 2.50 | 2.47 | 99 | 90-110 |
| CCV5 | 794318 | KQ2302781-05 | 02/11/23 14:18 | 2.50 | 2.48 | 99 | 90-110 |

**ALS Group USA, Corp.**
**dba ALS Environmental**

QA/QC Report

**Client:** ALS Environmental - US **Service Request:**K2301826
**Project:** HS23020487

## Continuing Calibration Blank (CCB) Summary
### Nitrate as Nitrogen

**Analysis Method:** 9056A **Units:**mg/L

| | Analysis Lot | Lab Code | Date Analyzed | LOQ | LOD | MDL | Result | Q |
|---|---|---|---|---|---|---|---|---|
| CCB1 | 794318 | KQ2302781-06 | 02/10/23 14:45 | 0.10 | 0.02 | 0.008 | ND | U |
| CCB2 | 794318 | KQ2302781-07 | 02/10/23 17:43 | 0.10 | 0.02 | 0.008 | ND | U |
| CCB3 | 794318 | KQ2302781-08 | 02/10/23 20:18 | 0.10 | 0.02 | 0.008 | ND | U |
| CCB4 | 794318 | KQ2302781-09 | 02/10/23 22:27 | 0.10 | 0.02 | 0.008 | ND | U |
| CCB5 | 794318 | KQ2302781-10 | 02/11/23 14:31 | 0.10 | 0.02 | 0.008 | ND | U |

eurofins | Environment Testing

# ANALYTICAL REPORT

## PREPARED FOR

Attn: Jumoke Lawal
ALS Group USA, Corp
10450 Stancliff Rd.
Suite 210
Houston, Texas 77099

Generated 2/17/2023 7:05:17 AM

## JOB DESCRIPTION

HS23020487

## JOB NUMBER

410-115413-1

Eurofins Lancaster Laboratories Environment Testing, LLC
2425 New Holland Pike
Lancaster PA 17601

See page two for job notes and contact information.



my EOL

# Eurofins Lancaster Laboratories Environment Testing, LLC

## Job Notes

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

## Authorization



Generated
2/17/2023 7:05:17 AM

Authorized for release by
Kelly Bauer, Project Manager
Kelly.Bauer@et.eurofinsus.com
(717)556-7262

# Eurofins Lancaster Laboratories Environment Testing, LLC

## Compliance Statement

Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.
· QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
· Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
· Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

This report shall not be reproduced except in full, without the written approval of the laboratory.

WARRANTY AND LIMITS OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. The foregoing express warranty is exclusive and is given in lieu of all other warranties, expressed or implied, except as otherwise agreed. We disclaim any other warranties, expressed or implied, including a warranty of fitness for particular purpose and warranty of merchantability. In no event shall Eurofins Lancaster Laboratories Environmental, LLC be liable for indirect, special, consequential, or incidental damages including, but not limited to, damages for loss of profit or goodwill regardless of (A) the negligence (either sole or concurrent) of Eurofins Lancaster Laboratories Environmental and (B) whether Eurofins Lancaster Laboratories Environmental has been informed of the possibility of such damages. We accept no legal responsibility for the purposes for which the client uses the test results. Except as otherwise agreed, no purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.



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# Definitions/Glossary

Client: ALS Group USA, Corp
Job ID: 410-115413-1
Project/Site: HS23020487

## Glossary

| Abbreviation | These commonly used abbreviations may or may not be present in this report. |
|---|---|
| ¤ | Listed under the "D" column to designate that the result is reported on a dry weight basis |
| %R | Percent Recovery |
| CFL | Contains Free Liquid |
| CFU | Colony Forming Unit |
| CNF | Contains No Free Liquid |
| DER | Duplicate Error Ratio (normalized absolute difference) |
| Dil Fac | Dilution Factor |
| DL | Detection Limit (DoD/DOE) |
| DL, RA, RE, IN | Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample |
| DLC | Decision Level Concentration (Radiochemistry) |
| EDL | Estimated Detection Limit (Dioxin) |
| LOD | Limit of Detection (DoD/DOE) |
| LOQ | Limit of Quantitation (DoD/DOE) |
| MCL | EPA recommended "Maximum Contaminant Level" |
| MDA | Minimum Detectable Activity (Radiochemistry) |
| MDC | Minimum Detectable Concentration (Radiochemistry) |
| MDL | Method Detection Limit |
| ML | Minimum Level (Dioxin) |
| MPN | Most Probable Number |
| MQL | Method Quantitation Limit |
| NC | Not Calculated |
| ND | Not Detected at the reporting limit (or MDL or EDL if shown) |
| NEG | Negative / Absent |
| POS | Positive / Present |
| PQL | Practical Quantitation Limit |
| PRES | Presumptive |
| QC | Quality Control |
| RER | Relative Error Ratio (Radiochemistry) |
| RL | Reporting Limit or Requested Limit (Radiochemistry) |
| RPD | Relative Percent Difference, a measure of the relative difference between two points |
| TEF | Toxicity Equivalent Factor (Dioxin) |
| TEQ | Toxicity Equivalent Quotient (Dioxin) |
| TNTC | Too Numerous To Count |

# Case Narrative

Client: ALS Group USA, Corp
Project/Site: HS23020487

Job ID: 410-115413-1

## Job ID: 410-115413-1

**Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC**

**Narrative**

**Job Narrative**
**410-115413-1**

**Receipt**

The sample was received on 2/14/2023 10:25 AM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.5°C

**GC VOA**

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

# Detection Summary

Client: ALS Group USA, Corp
Project/Site: HS23020487

Job ID: 410-115413-1

## Client Sample ID: HS23020487-01

## Lab Sample ID: 410-115413-1

| Analyte | Result | Qualifier | LOQ | LOD | DL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|---|
| Carbon dioxide | 66000 | | 12000 | | 2600 | ug/L | 1 | | RSK-175 | Total/NA |

This Detection Summary does not include radiochemical test results.

# Client Sample Results

Client: ALS Group USA, Corp
Project/Site: HS23020487

Job ID: 410-115413-1

## Client Sample ID: HS23020487-01

**Lab Sample ID: 410-115413-1**

**Date Collected: 02/09/23 07:55**

**Matrix: Water**

**Date Received: 02/14/23 10:25**

### Method: RSK-175 - Dissolved Gases (GC)

| Analyte | Result | Qualifier | LOQ | LOD | DL | Unit | D | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Carbon dioxide | 66000 | | 12000 | | 2600 | ug/L | | 02/16/23 10:20 | 1 |

# QC Sample Results

Client: ALS Group USA, Corp
Project/Site: HS23020487

Job ID: 410-115413-1

## Method: RSK-175 - Dissolved Gases (GC)

**Lab Sample ID: MB 410-345187/1-A**
**Matrix: Water**
**Analysis Batch: 345154**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 345187**

| Analyte | MB Result | MB Qualifier | LOQ | LOD | DL | Unit | D | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Carbon dioxide | <2600 | | 12000 | | 2600 | ug/L | | 02/16/23 08:48 | 1 |

**Lab Sample ID: LCS 410-345187/2-A**
**Matrix: Water**
**Analysis Batch: 345154**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 345187**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Carbon dioxide | | | 35800 | 32300 | | ug/L | | 90 | 80 - 122 | | |

**Lab Sample ID: LCSD 410-345187/3-A**
**Matrix: Water**
**Analysis Batch: 345154**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 345187**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Carbon dioxide | | | 35800 | 32300 | | ug/L | | 90 | 80 - 122 | 0 | 20 |

# QC Association Summary

Client: ALS Group USA, Corp
Project/Site: HS23020487

Job ID: 410-115413-1

## GC VOA

### Analysis Batch: 345154

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 410-115413-1 | HS23020487-01 | Total/NA | Water | RSK-175 | 345187 |
| MB 410-345187/1-A | Method Blank | Total/NA | Water | RSK-175 | 345187 |
| LCS 410-345187/2-A | Lab Control Sample | Total/NA | Water | RSK-175 | 345187 |
| LCSD 410-345187/3-A | Lab Control Sample Dup | Total/NA | Water | RSK-175 | 345187 |

### Prep Batch: 345187

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 410-115413-1 | HS23020487-01 | Total/NA | Water | RSK-175 | |
| MB 410-345187/1-A | Method Blank | Total/NA | Water | RSK-175 | |
| LCS 410-345187/2-A | Lab Control Sample | Total/NA | Water | RSK-175 | |
| LCSD 410-345187/3-A | Lab Control Sample Dup | Total/NA | Water | RSK-175 | |

# Lab Chronicle

Client: ALS Group USA, Corp
Project/Site: HS23020487

Job ID: 410-115413-1

## Client Sample ID: HS23020487-01

**Date Collected: 02/09/23 07:55**
**Date Received: 02/14/23 10:25**

## Lab Sample ID: 410-115413-1

**Matrix: Water**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab | Prepared or Analyzed |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | RSK-175 | | | 345187 | WN7O | ELLE | 02/16/23 08:37 |
| Total/NA | Analysis | RSK-175 | | 1 | 345154 | WN7O | ELLE | 02/16/23 10:20 |

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

# Accreditation/Certification Summary

Client: ALS Group USA, Corp
Job ID: 410-115413-1
Project/Site: HS23020487

## Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

| Authority | Program | Identification Number | Expiration Date |
|---|---|---|---|
| Louisiana (All) | NELAP | 02055 | 06-30-23 |

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

| Analysis Method | Prep Method | Matrix | Analyte |
|---|---|---|---|
| RSK-175 | RSK-175 | Water | Carbon dioxide |

| | | | |
|---|---|---|---|
| Texas | NELAP | T104704194-22-45 | 08-31-23 |

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

| Analysis Method | Prep Method | Matrix | Analyte |
|---|---|---|---|
| RSK-175 | RSK-175 | Water | Carbon dioxide |

# Method Summary

Client: ALS Group USA, Corp
Project/Site: HS23020487

Job ID: 410-115413-1

| Method | Method Description | Protocol | Laboratory |
|---|---|---|---|
| RSK-175 | Dissolved Gases (GC) | RSK | ELLE |
| RSK-175 | Dissolved Gases Prep | RSK | ELLE |

**Protocol References:**

RSK = Sample Prep And Calculations For Dissolved Gas Analysis In Water Samples Using A GC Headspace Equilibration Technique , RSKSOP-175, Rev. 0, 8/11/94, USEPA Research Lab

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

# Sample Summary

Client: ALS Group USA, Corp
Project/Site: HS23020487

Job ID: 410-115413-1

| Lab Sample ID | Client Sample ID | Matrix | Collected | Received |
|---|---|---|---|---|
| 410-115413-1 | HS23020487-01 | Water | 02/09/23 07:55 | 02/14/23 10:25 |




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**www.alsglobal.com**

# Subcontract Chain of Custody

**SAMPLING STATE:** **Dept of Defense** **COC ID:** **20938**

**SUBCONTRACT TO:**

Eurofins Lancaster Laboratories Envt Testing
2425 New Holland Pike
Lancaster, PA 17601

**Phone:** +1 717 656 2300

**CUSTOMER INFORMATION:**

| | |
|---|---|
| **Company:** | ALS Houston |
| **Contact:** | Dane J. Wacasey |
| **Address:** | 10450 Stancliff Rd, Ste 210 |
| **Phone:** | +1 281 530 5656 |
| **Email:** | Dane.Wacasey@alsglobal.com |
| **Alternate Contact:** | Jumoke M. Lawal |
| **Email:** | jumoke.lawal@alsglobal.com |

**INVOICE INFORMATION:**

| | |
|---|---|
| **Company:** | ALS Houston |
| **Contact:** | Accounts Payable |
| **Address:** | 10450 Stancliff Rd, Ste 210 |
| **Phone:** | +1 281 530 5656 |
| **Reference:** | HS23020487 |
| **TSR:** | Ron Martino |

| | LAB SAMPLE ID | CLIENT SAMPLE ID | MATRIX | COLLECT DATE |
|---|---|---|---|---|
| | ANALYSIS REQUESTED | | | DUE DATE |
| **1.** | **HS23020487-01** | **46WW11-230209** | **Water** | **09 Feb 2023 07:55** |
| | RSK-CO2; DoD Level II & IV, Equ_APTIM_GISKey | | | 24 Feb 2023 |

**Comments:** Please analyze for the analysis listed above.
Send report to the emails shown above.

**QC Level:** DOD IV (DoD Data Package)

Relinquished By: ROBERT G Date/Time: 2-13-23 1800

Received By: ELLET Date/Time: 2/14/23 1025

Cooler ID(s): Temperature(s): 1.5°

RIGHT SOLUTIONS | RIGHT PARTNER

10450 Stancliff Rd, Ste 210
Houston, TX 77099
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**www.alsglobal.com**

# Purchase Order

**PO: HS23020487**

**VENDOR:**

Eurofins Lancaster Laboratories Envt Testing
2425 New Holland Pike
Lancaster, PA 17601

**Phone:** +1 717 656 2300

**CUSTOMER INFORMATION:**

| | |
|---|---|
| **Company:** | ALS Houston |
| **Contact:** | Dane J. Wacasey |
| **Address:** | 10450 Stancliff Rd, Ste 210 |
| **Phone:** | +1 281 530 5656 |
| **Email:** | Dane.Wacasey@alsglobal.com |
| **Alternate Contact:** | Jumoke M. Lawal |
| **Email:** | jumoke.lawal@alsglobal.com |

**INVOICE INFORMATION:**

| | |
|---|---|
| **Company:** | ALS Houston |
| **Contact:** | Accounts Payable |
| **Address:** | 10450 Stancliff Rd, Ste 210 |
| **Phone:** | +1 281 530 5656 |
| **Reference:** | 20938 |
| **TSR:** | Ron Martino |

| Item | Catalog No | Unit Price | Quantity | Ext Price |
|---|---|---|---|---|
| 1. RSK-CO2; DoD Level II & IV, Equ_APTIM_GISKey | NA | | 1 | |

**Order Total:**

RIGHT SOLUTIONS | RIGHT PARTNER

# Login Sample Receipt Checklist

Client: ALS Group USA, Corp

Job Number: 410-115413-1

**Login Number: 115413**
**List Number: 1**
**Creator: McCaskey, Jonathan**

**List Source: Eurofins Lancaster Laboratories Environment Testing, LLC**

| Question | Answer | Comment |
|---|---|---|
| The cooler's custody seal is intact. | True | |
| The cooler or samples do not appear to have been compromised or tampered with. | True | |
| Samples were received on ice. | True | |
| Cooler Temperature is acceptable (</=6C, not frozen). | True | |
| Cooler Temperature is recorded. | True | |
| WV: Container Temperature is acceptable (</=6C, not frozen). | N/A | |
| WV: Container Temperature is recorded. | N/A | |
| COC is present. | True | |
| COC is filled out in ink and legible. | True | |
| COC is filled out with all pertinent information. | True | |
| There are no discrepancies between the containers received and the COC. | True | |
| Sample containers have legible labels. | True | |
| Containers are not broken or leaking. | True | |
| Sample collection date/times are provided. | True | |
| Appropriate sample containers are used. | True | |
| Sample bottles are completely filled. | True | |
| There is sufficient vol. for all requested analyses. | True | |
| Is the Field Sampler's name present on COC? | False | Received project as a subcontract. |
| Sample custody seals are intact. | N/A | |
| VOA sample vials do not have headspace >6mm in diameter (none, if from WV)? | N/A | |

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June 18, 2023

Vicki Graves
Aptim Environmental & Infrastucture, Inc.
10333 Richmond Ave
Ste 1030
Houston, TX 77042

Work Order: **HS23030010**

Laboratory Results for: **LHAAP 46 February 2023**

Dear Vicki Graves ,

ALS Environmental received 4 sample(s) on Mar 01, 2023 for the analysis presented in the following report.

This is a REVISED REPORT. Please see the Case Narrative for discussion concerning this revision.

Regards,

**Generated By: JUMOKE.LAWAL**
Dane J. Wacasey

**ALS Houston, US** Date: 18-Jun-23

**Client:** Aptim Environmental & Infrastucture, Inc.
**Project:** LHAAP 46 February 2023
**Work Order:** HS23030010

## SAMPLE SUMMARY

| Lab Samp ID | Client Sample ID | Matrix | TagNo | Collection Date | Date Received | Hold |
|---|---|---|---|---|---|---|
| HS23030010-01 | 46WW05R-230228 | Groundwater | | 28-Feb-2023 08:25 | 01-Mar-2023 10:00 | ☐ |
| HS23030010-02 | 46WW09R-230228 | Groundwater | | 28-Feb-2023 09:15 | 01-Mar-2023 10:00 | ☐ |
| HS23030010-03 | 46WW09R-230228-FD | Groundwater | | 28-Feb-2023 09:15 | 01-Mar-2023 10:00 | ☐ |
| HS23030010-04 | 46WW11R-230228 | Groundwater | | 28-Feb-2023 10:05 | 01-Mar-2023 10:00 | ☐ |

**Revision:**1

**ALS Houston, US** Date: 18-Jun-23

**Client:** Aptim Environmental & Infrastucture, Inc. **CASE NARRATIVE**
**Project:** LHAAP 46 February 2023
**Work Order:** HS23030010

## Work Order Comments

• Revised ID on sample 004 from 46WW011R-230228 to the correct ID 46WW11R-230228.

## WetChemistry by Method SW9056

### Batch ID: R429126

**Sample ID: 46WW05R-230228 (HS23030010-01)**

• The reporting limit is elevated due to dilution for high concentrations of non-target analytes. (Nitrogen, Nitrate (As N))

**Sample ID: 46WW09R-230228 (HS23030010-02)**

• The reporting limit is elevated due to dilution for high concentrations of non-target analytes. (Nitrogen, Nitrate (As N))

**Sample ID: 46WW09R-230228-FD (HS23030010-03)**

• The reporting limit is elevated due to dilution for high concentrations of non-target analytes. (Nitrogen, Nitrate (As N))

**ALS Houston, US** Date: 18-Jun-23

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 46 February 2023
Sample ID: 46WW05R-230228
Collection Date: 28-Feb-2023 08:25

**ANALYTICAL REPORT**
WorkOrder:HS23030010
Lab ID:HS23030010-01
Matrix:Groundwater

| ANALYSES | RESULT | QUAL | DL | LOD | LOQ | UNITS | DILUTION FACTOR | DATE ANALYZED |
|---|---|---|---|---|---|---|---|---|
| **ANIONS BY SW9056A** | | **Method:SW9056** | | | | | | Analyst: TH |
| Nitrogen, Nitrate (As N) | 0.250 | U | 0.150 | 0.250 | 0.500 | mg/L | 5 | 01-Mar-2023 17:40 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

**Revision:** 1

**ALS Houston, US** Date: 18-Jun-23

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 46 February 2023
Sample ID: 46WW09R-230228
Collection Date: 28-Feb-2023 09:15

**ANALYTICAL REPORT**
WorkOrder:HS23030010
Lab ID:HS23030010-02
Matrix:Groundwater

| ANALYSES | RESULT | QUAL | DL | LOD | LOQ | UNITS | DILUTION FACTOR | DATE ANALYZED |
|---|---|---|---|---|---|---|---|---|
| **ANIONS BY SW9056A** | | **Method:SW9056** | | | | | | Analyst: TH |
| Nitrogen, Nitrate (As N) | 0.250 | U | 0.150 | 0.250 | 0.500 | mg/L | 5 | 01-Mar-2023 17:46 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

**Revision:** 1

**ALS Houston, US** Date: 18-Jun-23

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 46 February 2023
Sample ID: 46WW09R-230228-FD
Collection Date: 28-Feb-2023 09:15

**ANALYTICAL REPORT**
WorkOrder:HS23030010
Lab ID:HS23030010-03
Matrix:Groundwater

| ANALYSES | RESULT | QUAL | DL | LOD | LOQ | UNITS | DILUTION FACTOR | DATE ANALYZED |
|---|---|---|---|---|---|---|---|---|
| **ANIONS BY SW9056A** | | **Method:SW9056** | | | | | | Analyst: TH |
| Nitrogen, Nitrate (As N) | 0.250 | U | 0.150 | 0.250 | 0.500 | mg/L | 5 | 01-Mar-2023 17:52 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

**Revision:** 1

**ALS Houston, US** Date: 18-Jun-23

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 46 February 2023
Sample ID: 46WW11R-230228
Collection Date: 28-Feb-2023 10:05

**ANALYTICAL REPORT**
WorkOrder:HS23030010
Lab ID:HS23030010-04
Matrix:Groundwater

| ANALYSES | RESULT | QUAL | DL | LOD | LOQ | UNITS | DILUTION FACTOR | DATE ANALYZED |
|---|---|---|---|---|---|---|---|---|
| **ANIONS BY SW9056A** | | **Method:SW9056** | | | | | | Analyst: TH |
| Nitrogen, Nitrate (As N) | 0.0500 | U | 0.0300 | 0.0500 | 0.100 | mg/L | 1 | 01-Mar-2023 17:57 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

**Revision:** 1

**ALS Houston, US** Date: 18-Jun-23

**Client:** Aptim Environmental & Infrastucture, Inc.
**Project:** LHAAP 46 February 2023
**WorkOrder:** HS23030010

**DATES REPORT**

| Sample ID | Client Samp ID | Collection Date | Leachate Date | Prep Date | Analysis Date | DF |
|---|---|---|---|---|---|---|
| **Batch ID:** R429126 ( 0 ) | **Test Name :** ANIONS BY SW9056A | | | | **Matrix:** Groundwater | |
| HS23030010-01 | 46WW05R-230228 | 28 Feb 2023 08:25 | | | 01 Mar 2023 17:40 | 5 |
| HS23030010-02 | 46WW09R-230228 | 28 Feb 2023 09:15 | | | 01 Mar 2023 17:46 | 5 |
| HS23030010-03 | 46WW09R-230228-FD | 28 Feb 2023 09:15 | | | 01 Mar 2023 17:52 | 5 |
| HS23030010-04 | 46WW11R-230228 | 28 Feb 2023 10:05 | | | 01 Mar 2023 17:57 | 1 |

**Revision:** 1

**ALS Houston, US** Date: 18-Jun-23

**Client:** Aptim Environmental & Infrastucture, Inc.
**Project:** LHAAP 46 February 2023
**WorkOrder:** HS23030010

**QC BATCH REPORT**

**Batch ID: R429126 ( 0 )** **Instrument: ICS-Integrion** **Method: ANIONS BY SW9056A**

**MBLK** Sample ID: **MBLK** Units: **mg/L** Analysis Date: **01-Mar-2023 17:22**
Client ID: Run ID: **ICS-Integrion_429126** SeqNo: **7152682** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Nitrogen, Nitrate (As N) | 0.0500 | 0.100 | | | | | | | | U |

**LCS** Sample ID: **LCS** Units: **mg/L** Analysis Date: **01-Mar-2023 17:34**
Client ID: Run ID: **ICS-Integrion_429126** SeqNo: **7152683** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Nitrogen, Nitrate (As N) | 3.992 | 0.100 | 4 | 0 | 99.8 | 80 - 120 | | | | |

**MS** Sample ID: **HS23021229-01MS** Units: **mg/L** Analysis Date: **01-Mar-2023 18:44**
Client ID: Run ID: **ICS-Integrion_429126** SeqNo: **7152691** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Nitrogen, Nitrate (As N) | 3.288 | 0.100 | 2 | 1.391 | 94.8 | 80 - 120 | | | | |

**MSD** Sample ID: **HS23021229-01MSD** Units: **mg/L** Analysis Date: **01-Mar-2023 18:50**
Client ID: Run ID: **ICS-Integrion_429126** SeqNo: **7152692** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Nitrogen, Nitrate (As N) | 3.294 | 0.100 | 2 | 1.391 | 95.1 | 80 - 120 | 3.288 | 0.179 | 20 | |

**The following samples were analyzed in this batch:** HS23030010-01 HS23030010-02 HS23030010-03 HS23030010-04

**Revision:** 1

**ALS Houston, US** Date: 18-Jun-23

**Client:** Aptim Environmental & Infrastucture, Inc.
**Project:** LHAAP 46 February 2023
**WorkOrder:** **HS23030010**

**QUALIFIERS, ACRONYMS, UNITS**

| Qualifier | Description |
|---|---|
| * | Value exceeds Regulatory Limit |
| a | Not accredited |
| B | Analyte detected in the associated Method Blank above the Reporting Limit |
| E | Value above quantitation range |
| H | Analyzed outside of Holding Time |
| J | Analyte detected below quantitation limit |
| M | Manually integrated, see raw data for justification |
| n | Not offered for accreditation |
| ND | Not Detected at the Reporting Limit |
| O | Sample amount is > 4 times amount spiked |
| P | Dual Column results percent difference > 40% |
| R | RPD above laboratory control limit |
| S | Spike Recovery outside laboratory control limits |
| U | Analyzed but not detected above the MDL/SDL |

| Acronym | Description |
|---|---|
| DCS | Detectability Check Study |
| DUP | Method Duplicate |
| LCS | Laboratory Control Sample |
| LCSD | Laboratory Control Sample Duplicate |
| MBLK | Method Blank |
| MDL | Method Detection Limit |
| MQL | Method Quantitation Limit |
| MS | Matrix Spike |
| MSD | Matrix Spike Duplicate |
| PDS | Post Digestion Spike |
| PQL | Practical Quantitaion Limit |
| SD | Serial Dilution |
| SDL | Sample Detection Limit |
| TRRP | Texas Risk Reduction Program |

## CERTIFICATIONS,ACCREDITATIONS & LICENSES

| Agency | Number | Expire Date |
|---|---|---|
| Arkansas | 88-00356 | 27-Mar-2024 |
| Dept of Defense | L23-358 | 31-May-2025 |
| Florida | E87611-37 | 30-Jun-2023 |
| Kansas | E-10352; 2022-2023 | 31-Jul-2023 |
| Louisiana | 03087, 2022-2023 | 30-Jun-2023 |
| Maryland | 343, 2022-2023 | 30-Jun-2023 |
| North Carolina | 624-2023 | 31-Dec-2023 |
| Oklahoma | 2022-141 | 31-Aug-2023 |
| Texas | T104704231-23-31 | 30-Apr-2024 |
| Utah | TX026932022-13 | 31-Jul-2023 |

**ALS Houston, US** Date: 18-Jun-23

## Sample Receipt Checklist

**Work Order ID:** HS23030010 **Date/Time Received:** **01-Mar-2023 10:00**

**Client Name:** CBI-Houston **Received by:** **Corey Grandits**

**Completed By:** */S/ Paresh M. Giga* (eSignature) 01-Mar-2023 10:49 (Date/Time) **Reviewed by:** */S/ Dane J. Wacasey* (eSignature) 02-Mar-2023 11:12 (Date/Time)

Matrices: **GW** Carrier name: **FedEx Priority Overnight**

| | | | |
|---|---|---|---|
| Shipping container/cooler in good condition? | Yes ☑ | No ☐ | Not Present ☐ |
| Custody seals intact on shipping container/cooler? | Yes ☑ | No ☐ | Not Present ☐ |
| Custody seals intact on sample bottles? | Yes ☐ | No ☐ | Not Present ☑ |
| VOA/TX1005/TX1006 Solids in hermetically sealed vials? | Yes ☐ | No ☐ | Not Present ☑ |
| Chain of custody present? | Yes ☑ | No ☐ | 1 Page(s) |
| Chain of custody signed when relinquished and received? | Yes ☑ | No ☐ | COC IDs:none |
| Samplers name present on COC? | Yes ☑ | No ☐ | |
| Chain of custody agrees with sample labels? | Yes ☑ | No ☐ | |
| Samples in proper container/bottle? | Yes ☑ | No ☐ | |
| Sample containers intact? | Yes ☑ | No ☐ | |
| Sufficient sample volume for indicated test? | Yes ☑ | No ☐ | |
| All samples received within holding time? | Yes ☑ | No ☐ | |
| Container/Temp Blank temperature in compliance? | Yes ☑ | No ☐ | |
| Temperature(s)/Thermometer(s): | 3.0C/2.5C U/C | IR31 | |
| Cooler(s)/Kit(s): | Red | | |
| Date/Time sample(s) sent to storage: | 3/1/23 10:55 | | |
| Water - VOA vials have zero headspace? | Yes ☐ | No ☐ | No VOA vials submitted ☑ |
| Water - pH acceptable upon receipt? | Yes ☐ | No ☐ | N/A ☑ |
| pH adjusted? | Yes ☐ | No ☐ | N/A ☑ |
| pH adjusted by: | | | |

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

Corrective Action:

# CHAIN OF CUSTODY

Name Of Lab Shipping To: ALS 10450 Stancliff Rd. Suite 210 Houston, TX. 77099 (281) 575-2190 ATTN: Dane Wacasey

Page 1 of 1

| Project: APTIM / ARMY AMMN. PLANT (LHAAP) / GROUNDWATER TREATMENT PLANT (GWTP) / KARNACK, TEXAS — LONGHORN | Project No. 501032 |
|---|---|
| Job: **LHAAP46 February 2023** | |
| Prepared By: Scott Beesinger | P.O. Number |

| Field Sample I.D. | Sample Matrix | Date / Time | MS / MSD | No. OF CONTAINERS | Analyses: Nitrate by SW9056 | Remarks (Preservatives, etc.) | Lab I.D.# |
|---|---|---|---|---|---|---|---|
| 46wwOSR-230228 | WG | 2/28/23 0825 | | 1 | X | | |
| 46wwOQR-230228 | WG | 2/28/23 0915 | | 1 | X | | |
| 46wwOQR-230228-FD | WG | 2/28/23 0915 | | 1 | X | | |
| 46wwIIR-230228 | WG | 2/28/23 1005 | | 1 | X | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

**HS23030010**

Aptim Environmental & Infrastucture, Inc.

LHAAP 46 February 2023

Additional Remarks: **Standard TAT on all parameters. Please email results to Vicki.Graves@aptim.com and invoices to fedinvoices@aptim.com**

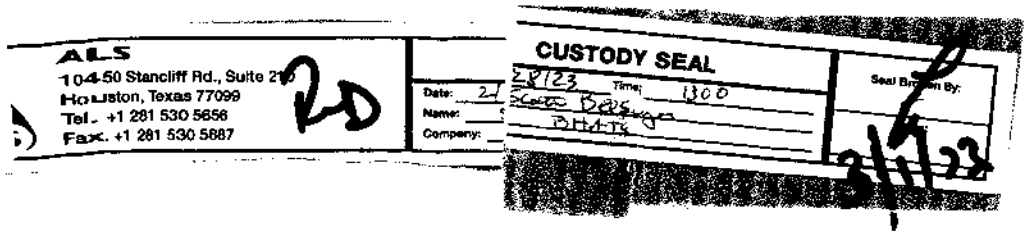
| Relinquished By: | Date | Time | Received By: | Date | Time | Relinquished By: | Date | Time | Received By: | Date | Time |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2/28/23 | 1300 | | 3.1.23 | | | | | | | |

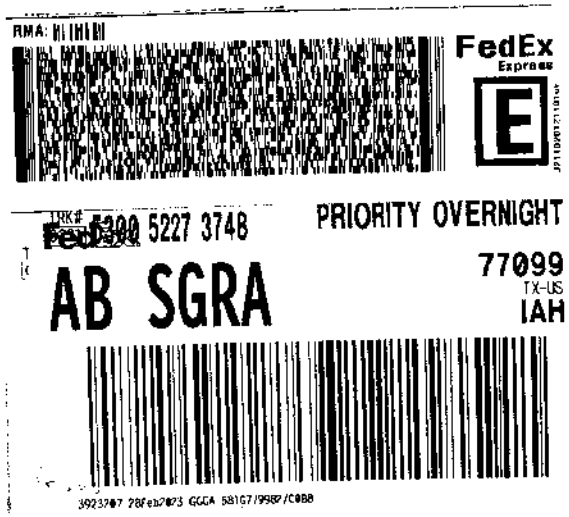
**For Lab Use Only**

| Received At Lab By: | Date | Time | Airbill No. | Opened By: | Date | Time | Temp of Container | Seal No. | Condition |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |

Remarks: IR31 SM RED 3.0°

(Word) S:\1-ces\Forms\Chain of Custody - BiWeekly


ALS
10450 Stancliff Rd., Suite 210
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5887
20
Date:
Name:
Company:
CUSTODY SEAL
28123
Time: 1300
DHATS


RMA:
FedEx
Express
TRK# 5300 5227 3748
PRIORITY OVERNIGHT
AB SGRA
77099
TX-US
IAH

# Appendix E

# Mann-Kendall Trend Analysis

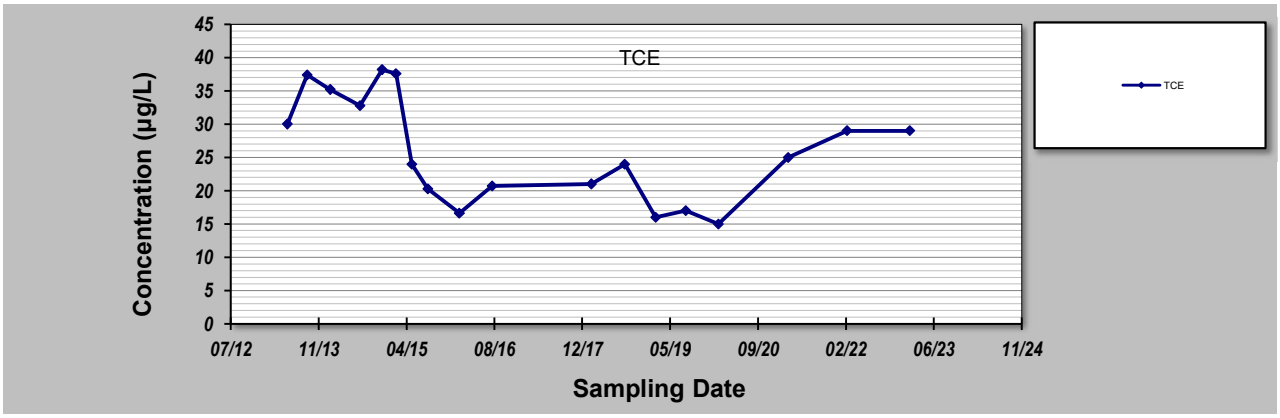
## 46WW02 Mann-Kendall Trend Analysis

# GSI MANN-KENDALL TOOLKIT
## for Constituent Trend Analysis

| | | | |
|---|---|---|---|
| Evaluation Date: | 4-Oct-23 | Job ID: | 501032 |
| Facility Name: | LHAAP-46 | Constituent: | TCE |
| Conducted By: | Chris Long | Concentration Units: | µg/L |

| Sampling Point ID: | TCE | | | | | | |
|---|---|---|---|---|---|---|---|

| Sampling Event | Sampling Date | TCE CONCENTRATION (µg/L) | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 1 | 5/28/2013 | 30 | | | | | | |
| 2 | 9/19/2013 | 37.4 | | | | | | |
| 3 | 1/27/2014 | 35.2 | | | | | | |
| 4 | 7/15/2014 | 32.8 | | | | | | |
| 5 | 11/18/2014 | 38.2 | | | | | | |
| 6 | 2/5/2015 | 37.6 | | | | | | |
| 7 | 5/6/2015 | 24 | | | | | | |
| 8 | 8/5/2015 | 20.3 | | | | | | |
| 9 | 2/1/2016 | 16.6 | | | | | | |
| 10 | 8/4/2016 | 20.7 | | | | | | |
| 11 | 2/20/2018 | 21 | | | | | | |
| 12 | 8/29/2018 | 24 | | | | | | |
| 13 | 2/21/2019 | 16 | | | | | | |
| 14 | 8/12/2019 | 17 | | | | | | |
| 15 | 2/13/2020 | 15 | | | | | | |
| 16 | 3/16/2021 | 25 | | | | | | |
| 17 | 2/15/2022 | 29 | | | | | | |
| 18 | 2/6/2023 | 29 | | | | | | |
| 19 | | | | | | | | |
| 20 | | | | | | | | |
| Coefficient of Variation: | | 0.30 | | | | | | |
| Mann-Kendall Statistic (S): | | -49 | | | | | | |
| Confidence Factor: | | 96.6% | | | | | | |
| Concentration Trend: | | Decreasing | | | | | | |




**Notes:**

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.

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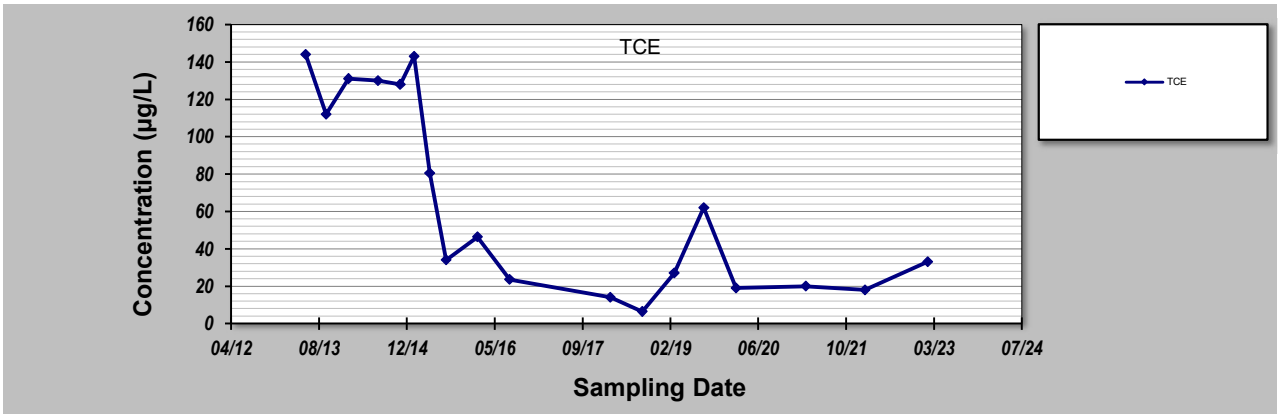
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## 46WW05 Mann-Kendall Trend Analysis

# GSI MANN-KENDALL TOOLKIT
## for Constituent Trend Analysis

| | | | |
|---|---|---|---|
| Evaluation Date: | 4-Oct-23 | Job ID: | 501032 |
| Facility Name: | LHAAP-46 | Constituent: | TCE |
| Conducted By: | Chris Long | Concentration Units: | µg/L |

| Sampling Point ID: | TCE | | | | | | |
|---|---|---|---|---|---|---|---|
| Sampling Event | Sampling Date | TCE CONCENTRATION (µg/L) | | | | | | |
| 1 | 5/30/2013 | 144 | | | | | | |
| 2 | 9/24/2013 | 112 | | | | | | |
| 3 | 1/28/2014 | 131 | | | | | | |
| 4 | 7/16/2014 | 130 | | | | | | |
| 5 | 11/19/2014 | 128 | | | | | | |
| 6 | 2/5/2015 | 143 | | | | | | |
| 7 | 5/5/2015 | 80.5 | | | | | | |
| 8 | 8/6/2015 | 34 | | | | | | |
| 9 | 2/1/2016 | 46.4 | | | | | | |
| 10 | 8/3/2016 | 23.6 | | | | | | |
| 11 | 2/26/2018 | 14 | | | | | | |
| 12 | 8/28/2018 | 6.4 | | | | | | |
| 13 | 2/25/2019 | 27 | | | | | | |
| 14 | 8/13/2019 | 62 | | | | | | |
| 15 | 2/13/2020 | 19 | | | | | | |
| 16 | 3/16/2021 | 20 | | | | | | |
| 17 | 2/15/2022 | 18 | | | | | | |
| 18 | 2/7/2023 | 33 | | | | | | |
| 19 | | | | | | | | |
| 20 | | | | | | | | |
| Coefficient of Variation: | | 0.79 | | | | | | |
| Mann-Kendall Statistic (S): | | -91 | | | | | | |
| Confidence Factor: | | >99.9% | | | | | | |
| Concentration Trend: | | Decreasing | | | | | | |




**Notes:**

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.

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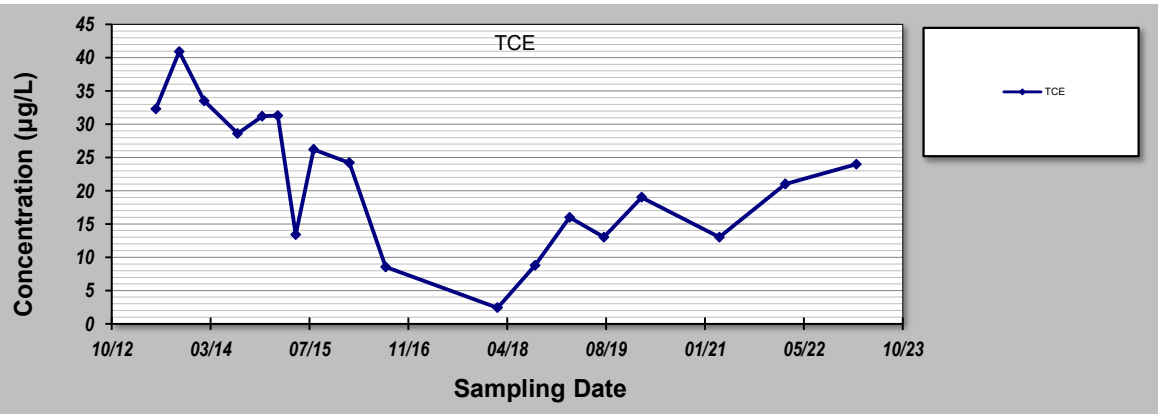
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## LHSMW19 Mann-Kendall Trend Analysis

# GSI MANN-KENDALL TOOLKIT
## for Constituent Trend Analysis

| | | | |
|---|---|---|---|
| Evaluation Date: | 4-Oct-23 | Job ID: | 501032 |
| Facility Name: | LHAAP-46 | Constituent: | TCE |
| Conducted By: | Chris Long | Concentration Units: | µg/L |

| Sampling Point ID: | TCE | | | | | | |
|---|---|---|---|---|---|---|---|
| Sampling Event | Sampling Date | TCE CONCENTRATION (µg/L) | | | | | | |
| 1 | 5/28/2013 | 32.3 | | | | | | |
| 2 | 9/24/2013 | 40.9 | | | | | | |
| 3 | 1/28/2014 | 33.5 | | | | | | |
| 4 | 7/16/2014 | 28.6 | | | | | | |
| 5 | 11/18/2014 | 31.2 | | | | | | |
| 6 | 2/4/2015 | 31.3 | | | | | | |
| 7 | 5/6/2015 | 13.4 | | | | | | |
| 8 | 8/5/2015 | 26.2 | | | | | | |
| 9 | 2/1/2016 | 24.2 | | | | | | |
| 10 | 8/3/2016 | 8.53 | | | | | | |
| 11 | 2/20/2018 | 2.4 | | | | | | |
| 12 | 8/28/2018 | 8.8 | | | | | | |
| 13 | 2/20/2019 | 16 | | | | | | |
| 14 | 8/12/2019 | 13 | | | | | | |
| 15 | 2/19/2020 | 19 | | | | | | |
| 16 | 3/18/2021 | 13 | | | | | | |
| 17 | 2/14/2022 | 21 | | | | | | |
| 18 | 2/9/2023 | 24 | | | | | | |
| 19 | | | | | | | | |
| 20 | | | | | | | | |
| Coefficient of Variation: | | 0.49 | | | | | | |
| Mann-Kendall Statistic (S): | | -68 | | | | | | |
| Confidence Factor: | | 99.6% | | | | | | |
| Concentration Trend: | | Decreasing | | | | | | |




**Notes:**

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.

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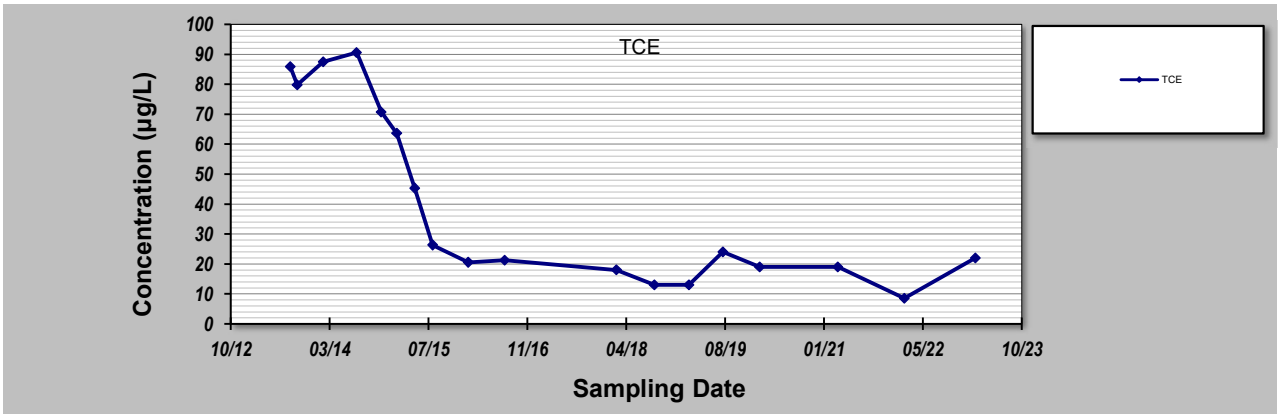
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## 46WW11 Mann-Kendall Trend Analysis

# GSI MANN-KENDALL TOOLKIT
## for Constituent Trend Analysis

| | | | |
|---|---|---|---|
| Evaluation Date: | 4-Oct-23 | Job ID: | 501032 |
| Facility Name: | LHAAP-46 | Constituent: | TCE |
| Conducted By: | Chris Long | Concentration Units: | µg/L |

| Sampling Point ID: | TCE | | | | | | |
|---|---|---|---|---|---|---|---|
| Sampling Event | Sampling Date | TCE CONCENTRATION (µg/L) | | | | | | |
| 1 | 8/14/2013 | 85.9 | | | | | | |
| 2 | 9/19/2013 | 79.8 | | | | | | |
| 3 | 1/28/2014 | 87.5 | | | | | | |
| 4 | 7/16/2014 | 90.6 | | | | | | |
| 5 | 11/18/2014 | 70.7 | | | | | | |
| 6 | 2/4/2015 | 63.6 | | | | | | |
| 7 | 5/6/2015 | 45.3 | | | | | | |
| 8 | 8/5/2015 | 26.3 | | | | | | |
| 9 | 2/1/2016 | 20.5 | | | | | | |
| 10 | 8/3/2016 | 21.2 | | | | | | |
| 11 | 2/20/2018 | 18 | | | | | | |
| 12 | 8/29/2018 | 13 | | | | | | |
| 13 | 2/21/2019 | 13 | | | | | | |
| 14 | 8/12/2019 | 24 | | | | | | |
| 15 | 2/13/2020 | 19 | | | | | | |
| 16 | 3/16/2021 | 19 | | | | | | |
| 17 | 2/14/2022 | 8.5 | | | | | | |
| 18 | 2/9/2023 | 22 | | | | | | |
| 19 | | | | | | | | |
| 20 | | | | | | | | |
| Coefficient of Variation: | | 0.74 | | | | | | |
| Mann-Kendall Statistic (S): | | -101 | | | | | | |
| Confidence Factor: | | >99.9% | | | | | | |
| Concentration Trend: | | Decreasing | | | | | | |




**Notes:**

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.

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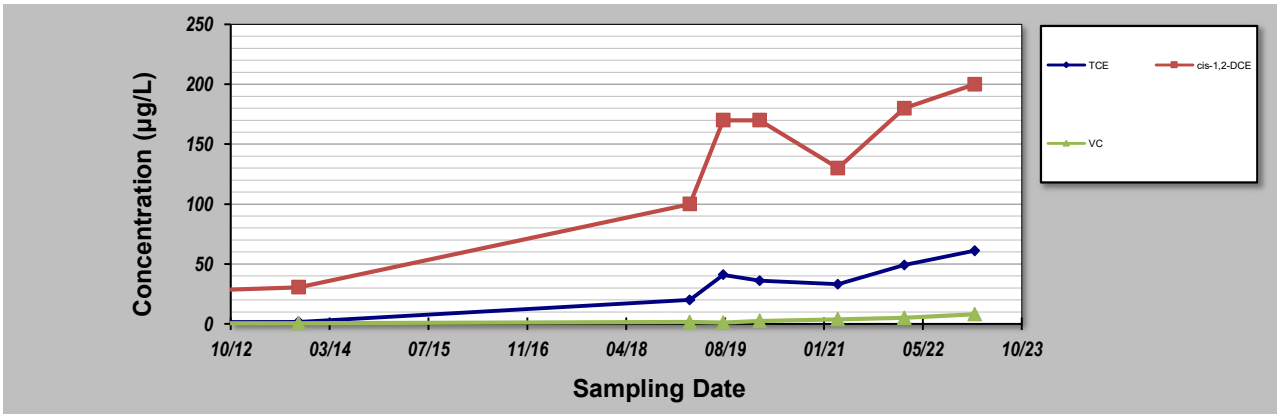
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## LHSMW21 Mann-Kendall Trend Analysis

# GSI MANN-KENDALL TOOLKIT
## for Constituent Trend Analysis

| | | | |
|---|---|---|---|
| Evaluation Date: | 4-Oct-23 | Job ID: | 501032 |
| Facility Name: | LHAAP-46 | Constituent: | TCE, cis-1,2-DCE, and VC |
| Conducted By: | Chris Long | Concentration Units: | µg/L |

| Sampling Point ID: | TCE | cis-1,2-DCE | VC | | | | |
|---|---|---|---|---|---|---|---|
| Sampling Event | Sampling Date | TCE, CIS-1,2-DCE, AND VC CONCENTRATION (µg/L) | | | | | | |
| 1 | 2/7/1996 | 0.5 | 0.5 | 0.5 | | | | |
| 2 | 8/15/1996 | 0.125 | 0.1 | 0.12 | | | | |
| 3 | 5/15/1998 | 0.5 | 0.5 | 0.5 | | | | |
| 4 | 9/25/2013 | 1.64 | 30.6 | 0.5 | | | | |
| 5 | 2/25/2019 | 20 | 100 | 1.44 | | | | |
| 6 | 8/13/2019 | 41 | 170 | 0.97 | | | | |
| 7 | 2/13/2020 | 36 | 170 | 2.4 | | | | |
| 8 | 3/16/2021 | 33 | 130 | 3.7 | | | | |
| 9 | 2/14/2022 | 49 | 180 | 4.9 | | | | |
| 10 | 2/6/2023 | 61 | 200 | 8 | | | | |
| 11 | | | | | | | | |
| 12 | | | | | | | | |
| 13 | | | | | | | | |
| 14 | | | | | | | | |
| 15 | | | | | | | | |
| 16 | | | | | | | | |
| 17 | | | | | | | | |
| 18 | | | | | | | | |
| 19 | | | | | | | | |
| 20 | | | | | | | | |
| Coefficient of Variation: | | 0.94 | 0.84 | 1.10 | | | | |
| Mann-Kendall Statistic (S): | | 36 | 37 | 38 | | | | |
| Confidence Factor: | | >99.9% | >99.9% | >99.9% | | | | |
| Concentration Trend: | | Increasing | Increasing | Increasing | | | | |




**Notes:**

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.

***DISCLAIMER:*** *The GSI Mann-Kendall Toolkit is available "as is". Considerable care has been exercised in preparing this software product; however, no party, including without limitation GSI Environmental Inc., makes any representation or warranty regarding the accuracy, correctness, or completeness of the information contained herein, and no such party shall be liable for any direct, indirect, consequential, incidental or other damages resulting from the use of this product or the information contained herein. Information in this publication is subject to change without notice. GSI Environmental Inc., disclaims any responsibility or obligation to update the information contained herein.*

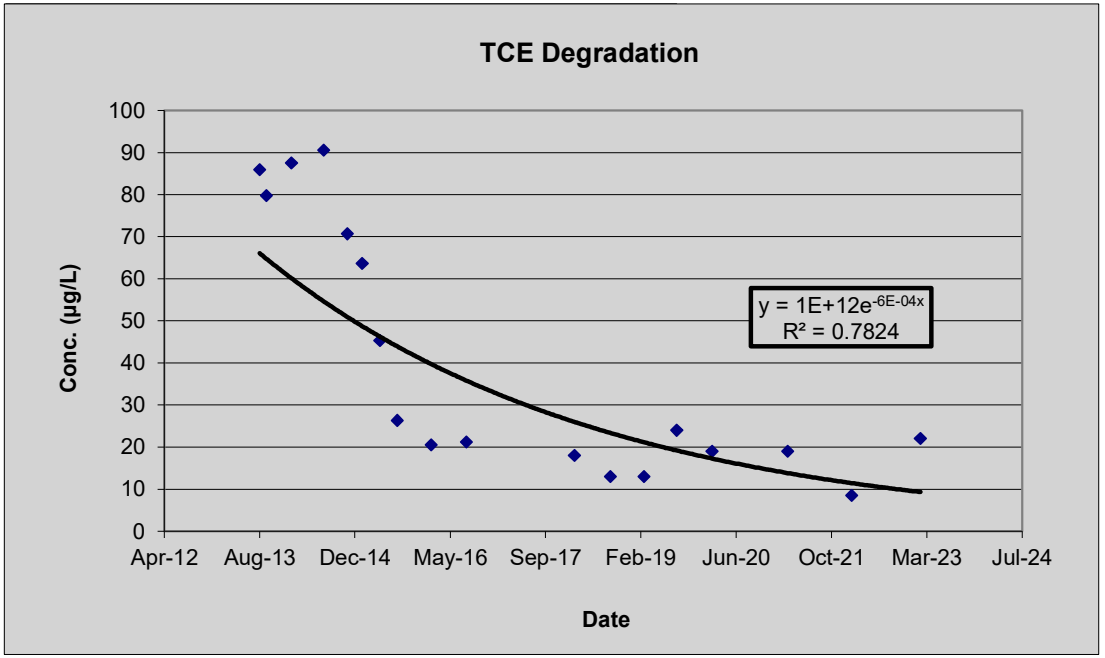
*GSI Environmental Inc., www.gsi-net.com*

# Appendix F

# Predictive Modeling

## Figure F-1
## Time-Dependent Attenuation Rate Constant and Estimated Cleanup Time
## 46WW11

| Date | TCE (µg/L) |
|---|---|
| 8/14/2013 | 85.9 |
| 9/19/2013 | 79.8 |
| 1/28/2014 | 87.5 |
| 7/16/2014 | 90.6 |
| 11/18/2014 | 70.7 |
| 2/4/2015 | 63.6 |
| 5/6/2015 | 45.3 |
| 8/5/2015 | 26.3 |
| 2/1/2016 | 20.5 |
| 8/3/2016 | 21.2 |
| 2/20/2018 | 18 |
| 8/29/2018 | 13 |
| 2/21/2019 | 13 |
| 8/12/2019 | 24 |
| 2/13/2020 | 19 |
| 3/16/2021 | 19 |
| 2/14/2022 | 8.5 |
| 2/9/2023 | 22 |



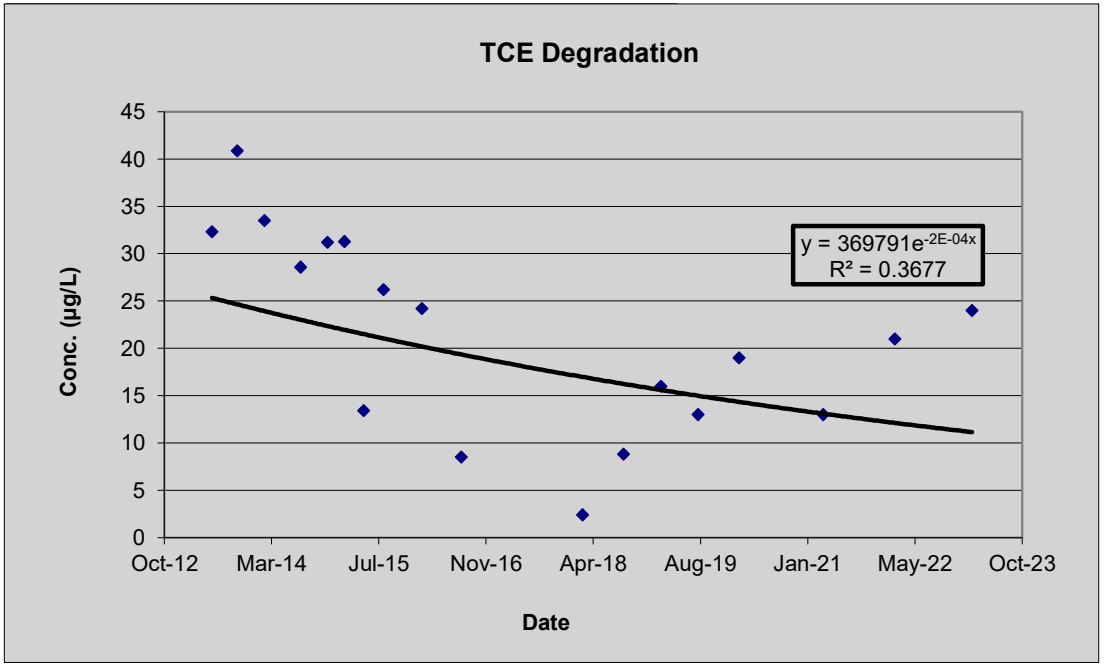

| Chemical: TCE<br>Well ID | Attenuation Rate Constant ($day^{-1}$) | Attenuation Half-life (days) | Attenuation Half-life (years) | Current Conc. (µg/L) | Target Concentration for TCE (µg/L) | Estimated Cleanup Time (years) |
|---|---|---|---|---|---|---|
| 46WW11 | 0.0006 | 1155.2 | 3.2 | 22 | 5 | 6.8 |

Notes:

The estimated cleanup time was calculated as the time it would take the most recent detected TCE concentration to reach the MCL using the site-specific attenuation rate, and assuming first order degradation kinetics.
µg/L - micrograms per liter
MCL - maximum contaminant level
TCE - trichloroethene

## Figure F-2
## Time-Dependent Attenuation Rate Constant and Estimated Cleanup Time
## LHSMW19

| Date | TCE (µg/L) |
|---|---|
| 5/28/2013 | 32.3 |
| 9/24/2013 | 40.9 |
| 1/28/2014 | 33.5 |
| 7/16/2014 | 28.6 |
| 11/18/2014 | 31.2 |
| 2/4/2015 | 31.3 |
| 5/6/2015 | 13.4 |
| 8/5/2015 | 26.2 |
| 2/1/2016 | 24.2 |
| 8/3/2016 | 8.53 |
| 2/20/2018 | 2.4 |
| 8/28/2018 | 8.8 |
| 2/20/2019 | 16 |
| 8/12/2019 | 13 |
| 2/19/2020 | 19 |
| 3/18/2021 | 13 |
| 2/14/2022 | 21 |
| 2/9/2023 | 24 |



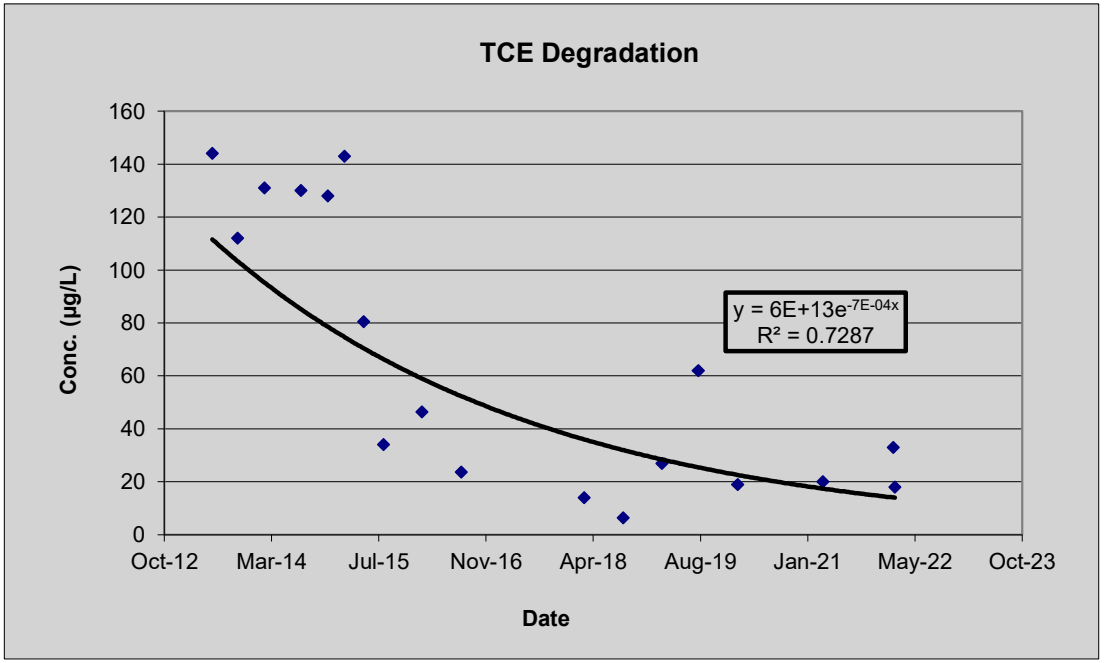

| Chemical: TCE<br>Well ID | Attenuation Rate Constant ($day^{-1}$) | Attenuation Half-life (days) | Attenuation Half-life (years) | Current Conc. (µg/L) | Target Concentration for TCE (µg/L) | Estimated Cleanup Time (years) |
|---|---|---|---|---|---|---|
| LHSMW19 | 0.0002 | 3465.7 | 9.5 | 61 | 5 | 34.3 |

Notes:

The estimated cleanup time was calculated as the time it would take the most recent detected TCE concentration to reach the MCL using the site-specific attenuation rate, and assuming first order degradation kinetics.
µg/L - micrograms per liter
MCL - maximum contaminant level
TCE - trichloroethene

## Figure F-3
## Time-Dependent Attenuation Rate Constant and Estimated Cleanup Time
## 46WW05

| Date | TCE (µg/L) |
|---|---|
| 5/30/2013 | 144 |
| 9/24/2013 | 112 |
| 1/28/2014 | 131 |
| 7/16/2014 | 130 |
| 11/19/2014 | 128 |
| 2/5/2015 | 143 |
| 5/5/2015 | 80.5 |
| 8/6/2015 | 34 |
| 2/1/2016 | 46.4 |
| 8/3/2016 | 23.6 |
| 2/26/2018 | 14 |
| 8/28/2018 | 6.4 |
| 2/25/2019 | 27 |
| 8/13/2019 | 62 |
| 2/13/2020 | 19 |
| 3/16/2021 | 20 |
| 2/15/2022 | 18 |
| 2/7/2022 | 33 |



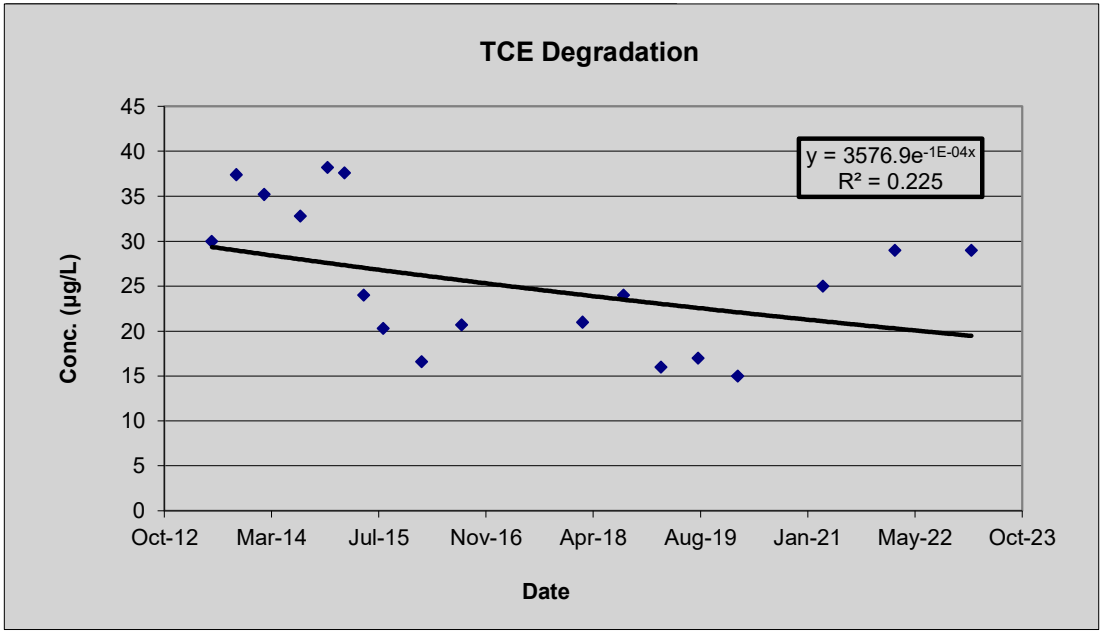

| Chemical: TCE<br>Well ID | Attenuation Rate Constant ($day^{-1}$) | Attenuation Half-life (days) | Attenuation Half-life (years) | Current Conc. (µg/L) | Target Concentration for TCE (µg/L) | Estimated Cleanup Time (years) |
|---|---|---|---|---|---|---|
| 46WW05 | 0.0007 | 990.2 | 2.7 | 33 | 5 | 7.4 |

Notes:

The estimated cleanup time was calculated as the time it would take the most recent detected TCE concentration to reach the MCL using the site-specific attenuation rate, and assuming first order degradation kinetics.
µg/L - micrograms per liter
MCL - maximum contaminant level
TCE - trichloroethene

## Figure F-4
## Time-Dependent Attenuation Rate Constant and Estimated Cleanup Time
## 46WW02

| Date | TCE (µg/L) |
|---|---|
| 5/28/2013 | 30 |
| 9/19/2013 | 37.4 |
| 1/27/2014 | 35.2 |
| 7/15/2014 | 32.8 |
| 11/18/2014 | 38.2 |
| 2/5/2015 | 37.6 |
| 5/6/2015 | 24 |
| 8/5/2015 | 20.3 |
| 2/1/2016 | 16.6 |
| 8/4/2016 | 20.7 |
| 2/20/2018 | 21 |
| 8/29/2018 | 24 |
| 2/21/2019 | 16 |
| 8/12/2019 | 17 |
| 2/13/2020 | 15 |
| 3/16/2021 | 25 |
| 2/15/2022 | 29 |
| 2/6/2023 | 29 |




| Chemical: TCE<br>Well ID | Attenuation Rate Constant ($day^{-1}$) | Attenuation Half-life (days) | Attenuation Half-life (years) | Current Conc. (µg/L) | Concentration for TCE (µg/L) | Cleanup Time (years) |
|---|---|---|---|---|---|---|
| 46WW02 | 0.0001 | 6931.5 | 19.0 | 29 | 5 | 48.2 |

Notes:

The estimated cleanup time was calculated as the time it would take the most recent detected TCE concentration to reach the MCL using the site-specific attenuation rate, and assuming first order degradation kinetics.
µg/L - micrograms per liter

# HS23020265 LHAAP46 Febuary 2023 Cover Page

ALS WO# HS23020265

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# WorkOrder: HS23020265

**LHAAP46 Febuary 2023**

**Aptim Environmental & Infrastucture, Inc.**

Vicki Graves
10333 Richmond Ave Ste 1030
Houston TX 77042

**27-Feb-2023**

# HS23020265 LHAAP46 Febuary 2023 Final REV01

ALS WO# HS23020265

10450 Stancliff Rd. Suite 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887

June 14, 2023

Vicki Graves
Aptim Environmental & Infrastucture, Inc.
10333 Richmond Ave
Ste 1030
Houston, TX 77042

Work Order: **HS23020265**

Laboratory Results for: **LHAAP46 Febuary 2023**

Dear Vicki Graves ,

ALS Environmental received 7 sample(s) on Feb 07, 2023 for the analysis presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

If you have any questions regarding this report, please feel free to call me.

Sincerely,



**Generated By: JUMOKE.LAWAL**
Dane J. Wacasey

**ALS Houston, US** Date: 14-Jun-23

**Client:** Aptim Environmental & Infrastucture, Inc.
**Project:** LHAAP46 Febuary 2023
**Work Order:** HS23020265

## SAMPLE SUMMARY

| Lab Samp ID | Client Sample ID | Matrix | TagNo | Collection Date | Date Received | Hold |
|---|---|---|---|---|---|---|
| HS23020265-01 | LHSMW21-230206 | GW | | 06-Feb-2023 07:35 | 07-Feb-2023 11:00 | ☐ |
| HS23020265-02 | 46WW16-230206 | GW | | 06-Feb-2023 08:20 | 07-Feb-2023 11:00 | ☐ |
| HS23020265-03 | 46WW03-230206 | GW | | 06-Feb-2023 09:15 | 07-Feb-2023 11:00 | ☐ |
| HS23020265-04 | 46WW02-230206 | GW | | 06-Feb-2023 10:00 | 07-Feb-2023 11:00 | ☐ |
| HS23020265-05 | 46WW07-230206 | GW | | 06-Feb-2023 11:10 | 07-Feb-2023 11:00 | ☐ |
| HS23020265-06 | 46WW14-230206 | GW | | 06-Feb-2023 11:55 | 07-Feb-2023 11:00 | ☐ |
| HS23020265-07 | Trip Blank-230206 | Water | | 06-Feb-2023 00:00 | 07-Feb-2023 11:00 | ☐ |

**ALS Houston, US** Date: 14-Jun-23

**Client:** Aptim Environmental & Infrastucture, Inc. **CASE NARRATIVE**
**Project:** LHAAP46 Febuary 2023
**Work Order:** HS23020265

## Work Order Comments

- Report Revised on June 14, 2023 to list the LOD results to match the EDD

The analysis for CO2 by RSK175 was subcontracted to Eurofins in Lancaster, PA. The final report is appended.

## GC Semivolatiles by Method RSK-175

### Batch ID: R428169

**Sample ID: 46WW02-230206 (HS23020265-04MS)**

- The recovery of the Matrix Spike (MS) and the Matrix Spike Duplicate (MSD) associated to these analytes were outside of the established control limits. However, the LCS was within control limits. The failed recovery of the MS/MSD may be due to sample matrix interference. Ethane

## GCMS Volatiles by Method SW8260

### Batch ID: R427850

**Sample ID: 46WW02-230206 (HS23020265-04MS)**

- MS/MSD failed QC and RPD limits due to matrix.

### Batch ID: R428010

**Sample ID: LHSMW21-230206 (HS23020265-01MS)**

- MSD failed QC limit for cis-1,2-Dichloroethene

## WetChemistry by Method SM5310B

### Batch ID: R428477

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

## WetChemistry by Method SW9056

### Batch ID: R427523,R427653

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

**ALS Houston, US** Date: 14-Jun-23

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP46 Febuary 2023
Sample ID: LHSMW21-230206
Collection Date: 06-Feb-2023 07:35

**ANALYTICAL REPORT**
WorkOrder:HS23020265
Lab ID:HS23020265-01
Matrix:GW

| ANALYSES | RESULT | QUAL | DL | LOD | LOQ | UNITS | DILUTION FACTOR | DATE ANALYZED |
|---|---|---|---|---|---|---|---|---|
| **VOLATILES ORGANICS BY METHOD 8260C** | | **Method:SW8260** | | | | | | Analyst: PC |
| **cis-1,2-Dichloroethene** | **200** | | **1.0** | **2.5** | **5.0** | **ug/L** | 5 | 14-Feb-2023 14:36 |
| **Trichloroethene** | **61** | | **0.20** | **0.50** | **1.0** | **ug/L** | 1 | 11-Feb-2023 15:03 |
| **Vinyl chloride** | **8.0** | | **0.20** | **0.50** | **1.0** | **ug/L** | 1 | 11-Feb-2023 15:03 |
| *Surr: 1,2-Dichloroethane-d4* | *99.6* | | | **0** | *81-118* | *%REC* | *1* | *11-Feb-2023 15:03* |
| *Surr: 1,2-Dichloroethane-d4* | *102* | | | **0** | *81-118* | *%REC* | *5* | *14-Feb-2023 14:36* |
| *Surr: 4-Bromofluorobenzene* | *109* | | | **0** | *85-114* | *%REC* | *1* | *11-Feb-2023 15:03* |
| *Surr: 4-Bromofluorobenzene* | *108* | | | **0** | *85-114* | *%REC* | *5* | *14-Feb-2023 14:36* |
| *Surr: Dibromofluoromethane* | *93.7* | | | **0** | *80-119* | *%REC* | *1* | *11-Feb-2023 15:03* |
| *Surr: Dibromofluoromethane* | *96.0* | | | **0** | *80-119* | *%REC* | *5* | *14-Feb-2023 14:36* |
| *Surr: Toluene-d8* | *106* | | | **0** | *89-112* | *%REC* | *1* | *11-Feb-2023 15:03* |
| *Surr: Toluene-d8* | *109* | | | **0** | *89-112* | *%REC* | *5* | *14-Feb-2023 14:36* |
| **DISSOLVED GASES BY RSK-175** | | **Method:RSK-175** | | | | | | Analyst: SAM |
| Ethane | 0.000500 | U | 0.000144 | 0.000500 | 0.00100 | mg/L | 1 | 09-Feb-2023 07:55 |
| Ethene | 0.000500 | U | 0.000234 | 0.000500 | 0.00100 | mg/L | 1 | 09-Feb-2023 07:55 |
| **Methane** | **0.00189** | | **0.000107** | **0.000500** | **0.000500** | **mg/L** | 1 | 09-Feb-2023 07:55 |
| **TOTAL ORGANIC CARBON - SM5310B-2011** | | **Method:SM5310B** | | | | | | Analyst: JAC |
| **Organic Carbon, Total** | **1.61** | | **0.500** | **1.00** | **1.00** | **mg/L** | 1 | 20-Feb-2023 14:49 |
| **ANIONS BY SW9056A** | | **Method:SW9056** | | | | | | Analyst: TH |
| **Chloride** | **92.4** | | **0.200** | **0.250** | **0.500** | **mg/L** | 1 | 07-Feb-2023 16:26 |
| Nitrogen, Nitrate (As N) | 0.0500 | U | 0.0300 | 0.0500 | 0.100 | mg/L | 1 | 07-Feb-2023 16:26 |
| **Sulfate** | **851** | | **4.00** | **5.00** | **10.0** | **mg/L** | 20 | 08-Feb-2023 10:37 |
| **SUBCONTRACT ANALYSIS - RSK** | | **Method:NA** | | | | | | Analyst: SUB |
| Subcontract Analysis | See Attached | | 0 | 0 | | NA | 1 | 14-Feb-2023 10:00 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

**ALS Houston, US** Date: 14-Jun-23

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP46 Febuary 2023
Sample ID: 46WW16-230206
Collection Date: 06-Feb-2023 08:20

**ANALYTICAL REPORT**
WorkOrder:HS23020265
Lab ID:HS23020265-02
Matrix:GW

| ANALYSES | RESULT | QUAL | DL | LOD | LOQ | UNITS | DILUTION FACTOR | DATE ANALYZED |
|---|---|---|---|---|---|---|---|---|
| **VOLATILES ORGANICS BY METHOD 8260C** | | **Method:SW8260** | | | | | | Analyst: PC |
| cis-1,2-Dichloroethene | 0.50 | U | 0.20 | 0.50 | 1.0 | ug/L | 1 | 11-Feb-2023 16:49 |
| Trichloroethene | 0.50 | U | 0.20 | 0.50 | 1.0 | ug/L | 1 | 11-Feb-2023 16:49 |
| Vinyl chloride | 0.50 | U | 0.20 | 0.50 | 1.0 | ug/L | 1 | 11-Feb-2023 16:49 |
| *Surr: 1,2-Dichloroethane-d4* | *101* | | | **0** | *81-118* | *%REC* | *1* | *11-Feb-2023 16:49* |
| *Surr: 4-Bromofluorobenzene* | *106* | | | **0** | *85-114* | *%REC* | *1* | *11-Feb-2023 16:49* |
| *Surr: Dibromofluoromethane* | *93.1* | | | **0** | *80-119* | *%REC* | *1* | *11-Feb-2023 16:49* |
| *Surr: Toluene-d8* | *107* | | | **0** | *89-112* | *%REC* | *1* | *11-Feb-2023 16:49* |
| **DISSOLVED GASES BY RSK-175** | | **Method:RSK-175** | | | | | | Analyst: SAM |
| Ethane | 0.000500 | U | 0.000144 | 0.000500 | 0.00100 | mg/L | 1 | 09-Feb-2023 08:05 |
| Ethene | 0.000500 | U | 0.000234 | 0.000500 | 0.00100 | mg/L | 1 | 09-Feb-2023 08:05 |
| **Methane** | **0.00658** | | **0.000107** | **0.000500** | **0.000500** | **mg/L** | 1 | 09-Feb-2023 08:05 |
| **TOTAL ORGANIC CARBON - SM5310B-2011** | | **Method:SM5310B** | | | | | | Analyst: JAC |
| **Organic Carbon, Total** | **5.96** | | **0.500** | **1.00** | **1.00** | **mg/L** | 1 | 20-Feb-2023 15:03 |
| **ANIONS BY SW9056A** | | **Method:SW9056** | | | | | | Analyst: TH |
| **Chloride** | **266** | | **2.00** | **2.50** | **5.00** | **mg/L** | 10 | 08-Feb-2023 10:43 |
| Nitrogen, Nitrate (As N) | 0.0500 | U | 0.0300 | 0.0500 | 0.100 | mg/L | 1 | 07-Feb-2023 16:31 |
| **Sulfate** | **569** | | **2.00** | **2.50** | **5.00** | **mg/L** | 10 | 08-Feb-2023 10:43 |
| **SUBCONTRACT ANALYSIS - RSK** | | **Method:NA** | | | | | | Analyst: SUB |
| Subcontract Analysis | See Attached | | 0 | 0 | | NA | 1 | 14-Feb-2023 10:00 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

**ALS Houston, US** Date: 14-Jun-23

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP46 Febuary 2023
Sample ID: 46WW03-230206
Collection Date: 06-Feb-2023 09:15

**ANALYTICAL REPORT**
WorkOrder:HS23020265
Lab ID:HS23020265-03
Matrix:GW

| ANALYSES | RESULT | QUAL | DL | LOD | LOQ | UNITS | DILUTION FACTOR | DATE ANALYZED |
|---|---|---|---|---|---|---|---|---|
| **VOLATILES ORGANICS BY METHOD 8260C** | **Method:SW8260** | | | | | | | Analyst: PC |
| cis-1,2-Dichloroethene | 0.50 | U | 0.20 | 0.50 | 1.0 | ug/L | 1 | 11-Feb-2023 17:10 |
| Trichloroethene | 0.50 | U | 0.20 | 0.50 | 1.0 | ug/L | 1 | 11-Feb-2023 17:10 |
| Vinyl chloride | 0.50 | U | 0.20 | 0.50 | 1.0 | ug/L | 1 | 11-Feb-2023 17:10 |
| *Surr: 1,2-Dichloroethane-d4* | *101* | | | **0** | *81-118* | *%REC* | *1* | *11-Feb-2023 17:10* |
| *Surr: 4-Bromofluorobenzene* | *107* | | | **0** | *85-114* | *%REC* | *1* | *11-Feb-2023 17:10* |
| *Surr: Dibromofluoromethane* | *93.4* | | | **0** | *80-119* | *%REC* | *1* | *11-Feb-2023 17:10* |
| *Surr: Toluene-d8* | *107* | | | **0** | *89-112* | *%REC* | *1* | *11-Feb-2023 17:10* |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

**ALS Houston, US** Date: 14-Jun-23

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP46 Febuary 2023
Sample ID: 46WW02-230206
Collection Date: 06-Feb-2023 10:00

**ANALYTICAL REPORT**
WorkOrder:HS23020265
Lab ID:HS23020265-04
Matrix:GW

| ANALYSES | RESULT | QUAL | DL | LOD | LOQ | UNITS | DILUTION FACTOR | DATE ANALYZED |
|---|---|---|---|---|---|---|---|---|
| **VOLATILES ORGANICS BY METHOD 8260C** | | **Method:SW8260** | | | | | | Analyst: PC |
| **cis-1,2-Dichloroethene** | **1.8** | | **0.20** | **0.50** | **1.0** | **ug/L** | 1 | 11-Feb-2023 14:42 |
| **Trichloroethene** | **29** | | **0.20** | **0.50** | **1.0** | **ug/L** | 1 | 11-Feb-2023 14:42 |
| **Vinyl chloride** | **0.43** | J | **0.20** | **0.50** | **1.0** | **ug/L** | 1 | 11-Feb-2023 14:42 |
| *Surr: 1,2-Dichloroethane-d4* | *100* | | | **0** | *81-118* | *%REC* | *1* | *11-Feb-2023 14:42* |
| *Surr: 4-Bromofluorobenzene* | *108* | | | **0** | *85-114* | *%REC* | *1* | *11-Feb-2023 14:42* |
| *Surr: Dibromofluoromethane* | *93.8* | | | **0** | *80-119* | *%REC* | *1* | *11-Feb-2023 14:42* |
| *Surr: Toluene-d8* | *107* | | | **0** | *89-112* | *%REC* | *1* | *11-Feb-2023 14:42* |
| **DISSOLVED GASES BY RSK-175** | | **Method:RSK-175** | | | | | | Analyst: SAM |
| Ethane | 0.000500 | U | 0.000144 | 0.000500 | 0.00100 | mg/L | 1 | 09-Feb-2023 09:26 |
| Ethene | 0.000500 | U | 0.000234 | 0.000500 | 0.00100 | mg/L | 1 | 09-Feb-2023 09:26 |
| **Methane** | **0.00174** | | **0.000107** | **0.000500** | **0.000500** | **mg/L** | 1 | 09-Feb-2023 09:26 |
| **TOTAL ORGANIC CARBON - SM5310B-2011** | | **Method:SM5310B** | | | | | | Analyst: JAC |
| **Organic Carbon, Total** | **10.3** | | **0.500** | **1.00** | **1.00** | **mg/L** | 1 | 20-Feb-2023 15:17 |
| **ANIONS BY SW9056A** | | **Method:SW9056** | | | | | | Analyst: TH |
| **Chloride** | **54.4** | | **0.200** | **0.250** | **0.500** | **mg/L** | 1 | 07-Feb-2023 16:37 |
| Nitrogen, Nitrate (As N) | 0.0500 | U | 0.0300 | 0.0500 | 0.100 | mg/L | 1 | 07-Feb-2023 16:37 |
| **Sulfate** | **270** | | **2.00** | **2.50** | **5.00** | **mg/L** | 10 | 08-Feb-2023 10:49 |
| **SUBCONTRACT ANALYSIS - RSK** | | **Method:NA** | | | | | | Analyst: SUB |
| Subcontract Analysis | See Attached | | 0 | 0 | | NA | 1 | 14-Feb-2023 10:00 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

**ALS Houston, US** Date: 14-Jun-23

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP46 Febuary 2023
Sample ID: 46WW07-230206
Collection Date: 06-Feb-2023 11:10

**ANALYTICAL REPORT**
WorkOrder:HS23020265
Lab ID:HS23020265-05
Matrix:GW

| ANALYSES | RESULT | QUAL | DL | LOD | LOQ | UNITS | DILUTION FACTOR | DATE ANALYZED |
|---|---|---|---|---|---|---|---|---|
| **VOLATILES ORGANICS BY METHOD 8260C** | **Method:SW8260** | | | | | | | Analyst: PC |
| cis-1,2-Dichloroethene | 0.50 | U | 0.20 | 0.50 | 1.0 | ug/L | 1 | 11-Feb-2023 17:31 |
| Trichloroethene | 0.50 | U | 0.20 | 0.50 | 1.0 | ug/L | 1 | 11-Feb-2023 17:31 |
| Vinyl chloride | 0.50 | U | 0.20 | 0.50 | 1.0 | ug/L | 1 | 11-Feb-2023 17:31 |
| *Surr: 1,2-Dichloroethane-d4* | *101* | | | **0** | *81-118* | *%REC* | *1* | *11-Feb-2023 17:31* |
| *Surr: 4-Bromofluorobenzene* | *107* | | | **0** | *85-114* | *%REC* | *1* | *11-Feb-2023 17:31* |
| *Surr: Dibromofluoromethane* | *93.2* | | | **0** | *80-119* | *%REC* | *1* | *11-Feb-2023 17:31* |
| *Surr: Toluene-d8* | *106* | | | **0** | *89-112* | *%REC* | *1* | *11-Feb-2023 17:31* |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

**ALS Houston, US** Date: 14-Jun-23

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP46 Febuary 2023
Sample ID: 46WW14-230206
Collection Date: 06-Feb-2023 11:55

**ANALYTICAL REPORT**
WorkOrder:HS23020265
Lab ID:HS23020265-06
Matrix:GW

| ANALYSES | RESULT | QUAL | DL | LOD | LOQ | UNITS | DILUTION FACTOR | DATE ANALYZED |
|---|---|---|---|---|---|---|---|---|
| **VOLATILES ORGANICS BY METHOD 8260C** | **Method:SW8260** | | | | | | | Analyst: PC |
| cis-1,2-Dichloroethene | 0.50 | U | 0.20 | 0.50 | 1.0 | ug/L | 1 | 11-Feb-2023 17:52 |
| Trichloroethene | 0.50 | U | 0.20 | 0.50 | 1.0 | ug/L | 1 | 11-Feb-2023 17:52 |
| Vinyl chloride | 0.50 | U | 0.20 | 0.50 | 1.0 | ug/L | 1 | 11-Feb-2023 17:52 |
| *Surr: 1,2-Dichloroethane-d4* | *101* | | | **0** | *81-118* | *%REC* | *1* | *11-Feb-2023 17:52* |
| *Surr: 4-Bromofluorobenzene* | *107* | | | **0** | *85-114* | *%REC* | *1* | *11-Feb-2023 17:52* |
| *Surr: Dibromofluoromethane* | *93.9* | | | **0** | *80-119* | *%REC* | *1* | *11-Feb-2023 17:52* |
| *Surr: Toluene-d8* | *108* | | | **0** | *89-112* | *%REC* | *1* | *11-Feb-2023 17:52* |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

**ALS Houston, US** Date: 14-Jun-23

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP46 Febuary 2023
Sample ID: Trip Blank-230206
Collection Date: 06-Feb-2023 00:00

**ANALYTICAL REPORT**
WorkOrder:HS23020265
Lab ID:HS23020265-07
Matrix:Water

| ANALYSES | RESULT | QUAL | DL | LOD | LOQ | UNITS | DILUTION FACTOR | DATE ANALYZED |
|---|---|---|---|---|---|---|---|---|
| **VOLATILES ORGANICS BY METHOD 8260C** | **Method:SW8260** | | | | | | | Analyst: PC |
| cis-1,2-Dichloroethene | 0.50 | U | 0.20 | 0.50 | 1.0 | ug/L | 1 | 11-Feb-2023 14:21 |
| Trichloroethene | 0.50 | U | 0.20 | 0.50 | 1.0 | ug/L | 1 | 11-Feb-2023 14:21 |
| Vinyl chloride | 0.50 | U | 0.20 | 0.50 | 1.0 | ug/L | 1 | 11-Feb-2023 14:21 |
| *Surr: 1,2-Dichloroethane-d4* | *100* | | | **0** | *81-118* | *%REC* | *1* | *11-Feb-2023 14:21* |
| *Surr: 4-Bromofluorobenzene* | *109* | | | **0** | *85-114* | *%REC* | *1* | *11-Feb-2023 14:21* |
| *Surr: Dibromofluoromethane* | *93.5* | | | **0** | *80-119* | *%REC* | *1* | *11-Feb-2023 14:21* |
| *Surr: Toluene-d8* | *108* | | | **0** | *89-112* | *%REC* | *1* | *11-Feb-2023 14:21* |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

**ALS Houston, US** Date: 14-Jun-23

**Client:** Aptim Environmental & Infrastucture, Inc.
**Project:** LHAAP46 Febuary 2023
**WorkOrder:** HS23020265

## DATES REPORT

| Sample ID | Client Samp ID | Collection Date | Leachate Date | Prep Date | Analysis Date | DF |
|---|---|---|---|---|---|---|
| **Batch ID:** R427523 ( 0 ) | **Test Name :** ANIONS BY SW9056A | | | | **Matrix:** GW | |
| HS23020265-01 | LHSMW21-230206 | 06 Feb 2023 07:35 | | | 07 Feb 2023 16:26 | 1 |
| HS23020265-02 | 46WW16-230206 | 06 Feb 2023 08:20 | | | 07 Feb 2023 16:31 | 1 |
| HS23020265-04 | 46WW02-230206 | 06 Feb 2023 10:00 | | | 07 Feb 2023 16:37 | 1 |
| **Batch ID:** R427653 ( 0 ) | **Test Name :** ANIONS BY SW9056A | | | | **Matrix:** GW | |
| HS23020265-01 | LHSMW21-230206 | 06 Feb 2023 07:35 | | | 08 Feb 2023 10:37 | 20 |
| HS23020265-02 | 46WW16-230206 | 06 Feb 2023 08:20 | | | 08 Feb 2023 10:43 | 10 |
| HS23020265-04 | 46WW02-230206 | 06 Feb 2023 10:00 | | | 08 Feb 2023 10:49 | 10 |
| **Batch ID:** R427850 ( 0 ) | **Test Name :** VOLATILES ORGANICS BY METHOD 8260C | | | | **Matrix:** Water | |
| HS23020265-07 | Trip Blank-230206 | 06 Feb 2023 00:00 | | | 11 Feb 2023 14:21 | 1 |
| **Batch ID:** R427850 ( 0 ) | **Test Name :** VOLATILES ORGANICS BY METHOD 8260C | | | | **Matrix:** GW | |
| HS23020265-01 | LHSMW21-230206 | 06 Feb 2023 07:35 | | | 11 Feb 2023 15:03 | 1 |
| HS23020265-02 | 46WW16-230206 | 06 Feb 2023 08:20 | | | 11 Feb 2023 16:49 | 1 |
| HS23020265-03 | 46WW03-230206 | 06 Feb 2023 09:15 | | | 11 Feb 2023 17:10 | 1 |
| HS23020265-04 | 46WW02-230206 | 06 Feb 2023 10:00 | | | 11 Feb 2023 14:42 | 1 |
| HS23020265-05 | 46WW07-230206 | 06 Feb 2023 11:10 | | | 11 Feb 2023 17:31 | 1 |
| HS23020265-06 | 46WW14-230206 | 06 Feb 2023 11:55 | | | 11 Feb 2023 17:52 | 1 |
| **Batch ID:** R427936 ( 0 ) | **Test Name :** SUBCONTRACT ANALYSIS - RSK | | | | **Matrix:** GW | |
| HS23020265-01 | LHSMW21-230206 | 06 Feb 2023 07:35 | | | 14 Feb 2023 10:00 | 1 |
| HS23020265-02 | 46WW16-230206 | 06 Feb 2023 08:20 | | | 14 Feb 2023 10:00 | 1 |
| HS23020265-04 | 46WW02-230206 | 06 Feb 2023 10:00 | | | 14 Feb 2023 10:00 | 1 |
| **Batch ID:** R428010 ( 0 ) | **Test Name :** VOLATILES ORGANICS BY METHOD 8260C | | | | **Matrix:** GW | |
| HS23020265-01 | LHSMW21-230206 | 06 Feb 2023 07:35 | | | 14 Feb 2023 14:36 | 5 |
| **Batch ID:** R428169 ( 0 ) | **Test Name :** DISSOLVED GASES BY RSK-175 | | | | **Matrix:** GW | |
| HS23020265-01 | LHSMW21-230206 | 06 Feb 2023 07:35 | | | 09 Feb 2023 07:55 | 1 |
| HS23020265-02 | 46WW16-230206 | 06 Feb 2023 08:20 | | | 09 Feb 2023 08:05 | 1 |
| HS23020265-04 | 46WW02-230206 | 06 Feb 2023 10:00 | | | 09 Feb 2023 09:26 | 1 |
| **Batch ID:** R428477 ( 0 ) | **Test Name :** TOTAL ORGANIC CARBON - SM5310B-2011 | | | | **Matrix:** GW | |
| HS23020265-01 | LHSMW21-230206 | 06 Feb 2023 07:35 | | | 20 Feb 2023 14:49 | 1 |
| HS23020265-02 | 46WW16-230206 | 06 Feb 2023 08:20 | | | 20 Feb 2023 15:03 | 1 |
| HS23020265-04 | 46WW02-230206 | 06 Feb 2023 10:00 | | | 20 Feb 2023 15:17 | 1 |

**ALS Houston, US** Date: 14-Jun-23

**Client:** Aptim Environmental & Infrastucture, Inc.
**Project:** LHAAP46 Febuary 2023
**WorkOrder:** HS23020265

**QC BATCH REPORT**

**Batch ID:** R428169 ( 0 ) **Instrument:** FID-4 **Method:** DISSOLVED GASES BY RSK-175

**MBLK** Sample ID: **MBLK-230209** Units: **mg/L** Analysis Date: **09-Feb-2023 07:36**
Client ID: Run ID: **FID-4_428169** SeqNo: **7132771** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Ethane | 0.000500 | 0.00100 | | | | | | | | U |
| Ethene | 0.000500 | 0.00100 | | | | | | | | U |
| Methane | 0.000500 | 0.000500 | | | | | | | | U |

**LCS** Sample ID: **LCS-230209** Units: **mg/L** Analysis Date: **09-Feb-2023 07:44**
Client ID: Run ID: **FID-4_428169** SeqNo: **7132772** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Ethane | 0.0205 | 0.00100 | 0.01804 | 0 | 113 | 75 - 125 | | | | |
| Ethene | 0.0175 | 0.00100 | 0.0168 | 0 | 104 | 75 - 125 | | | | |
| Methane | 0.00879 | 0.000500 | 0.009647 | 0 | 91.1 | 75 - 125 | | | | |

**MS** Sample ID: **HS23020265-04MS** Units: **mg/L** Analysis Date: **09-Feb-2023 10:07**
Client ID: **46WW02-230206** Run ID: **FID-4_428169** SeqNo: **7132776** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Ethane | 0.0242 | 0.00100 | 0.01804 | 0 | 134 | 75 - 125 | | | | S |
| Ethene | 0.0209 | 0.00100 | 0.0168 | 0 | 124 | 75 - 125 | | | | |
| Methane | 0.0106 | 0.000500 | 0.009647 | 0.001740 | 92.0 | 75 - 125 | | | | |

**MSD** Sample ID: **HS23020265-04MSD** Units: **mg/L** Analysis Date: **09-Feb-2023 10:16**
Client ID: **46WW02-230206** Run ID: **FID-4_428169** SeqNo: **7132777** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Ethane | 0.0244 | 0.00100 | 0.01804 | 0 | 136 | 75 - 125 | 0.02420 | 1.03 | 30 | S |
| Ethene | 0.0210 | 0.00100 | 0.0168 | 0 | 125 | 75 - 125 | 0.02089 | 0.391 | 30 | |
| Methane | 0.0107 | 0.000500 | 0.009647 | 0.001740 | 93.2 | 75 - 125 | 0.01061 | 1.11 | 30 | |

**The following samples were analyzed in this batch:** HS23020265-01 HS23020265-02 HS23020265-04

**ALS Houston, US** Date: 14-Jun-23

**Client:** Aptim Environmental & Infrastucture, Inc.
**Project:** LHAAP46 Febuary 2023
**WorkOrder:** HS23020265

**QC BATCH REPORT**

**Batch ID:** R427850 ( 0 ) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

**MBLK** Sample ID: **VBLKW-230211** Units: **ug/L** Analysis Date: **11-Feb-2023 14:00**
Client ID: Run ID: **VOA6_427850** SeqNo: **7120406** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| cis-1,2-Dichloroethene | 0.50 | 1.0 | | | | | | | | U |
| Trichloroethene | 0.50 | 1.0 | | | | | | | | U |
| Vinyl chloride | 0.50 | 1.0 | | | | | | | | U |
| *Surr: 1,2-Dichloroethane-d4* | *50.07* | *1.0* | *50* | *0* | *100* | *81 - 118* | | | | |
| *Surr: 4-Bromofluorobenzene* | *53.56* | *1.0* | *50* | *0* | *107* | *85 - 114* | | | | |
| *Surr: Dibromofluoromethane* | *47.35* | *1.0* | *50* | *0* | *94.7* | *80 - 119* | | | | |
| *Surr: Toluene-d8* | *53.07* | *1.0* | *50* | *0* | *106* | *89 - 112* | | | | |

**LCS** Sample ID: **VLCSW-230211** Units: **ug/L** Analysis Date: **11-Feb-2023 13:18**
Client ID: Run ID: **VOA6_427850** SeqNo: **7120405** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| cis-1,2-Dichloroethene | 18.49 | 1.0 | 20 | 0 | 92.4 | 78 - 123 | | | | |
| Trichloroethene | 18.29 | 1.0 | 20 | 0 | 91.4 | 79 - 123 | | | | |
| Vinyl chloride | 18.95 | 1.0 | 20 | 0 | 94.7 | 58 - 137 | | | | |
| *Surr: 1,2-Dichloroethane-d4* | *54.8* | *1.0* | *50* | *0* | *110* | *81 - 118* | | | | |
| *Surr: 4-Bromofluorobenzene* | *54.39* | *1.0* | *50* | *0* | *109* | *85 - 114* | | | | |
| *Surr: Dibromofluoromethane* | *49.85* | *1.0* | *50* | *0* | *99.7* | *80 - 119* | | | | |
| *Surr: Toluene-d8* | *50.95* | *1.0* | *50* | *0* | *102* | *89 - 112* | | | | |

**MS** Sample ID: **HS23020265-04MS** Units: **ug/L** Analysis Date: **11-Feb-2023 15:24**
Client ID: **46WW02-230206** Run ID: **VOA6_427850** SeqNo: **7120410** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| cis-1,2-Dichloroethene | 17.38 | 1.0 | 20 | 1.768 | 78.0 | 78 - 123 | | | | |
| Trichloroethene | 44.84 | 1.0 | 20 | 28.68 | 80.8 | 79 - 123 | | | | |
| Vinyl chloride | 11.53 | 1.0 | 20 | 0.4346 | 55.5 | 58 - 137 | | | | S |
| *Surr: 1,2-Dichloroethane-d4* | *50.33* | *1.0* | *50* | *0* | *101* | *81 - 118* | | | | |
| *Surr: 4-Bromofluorobenzene* | *54.23* | *1.0* | *50* | *0* | *108* | *85 - 114* | | | | |
| *Surr: Dibromofluoromethane* | *46.11* | *1.0* | *50* | *0* | *92.2* | *80 - 119* | | | | |
| *Surr: Toluene-d8* | *53.66* | *1.0* | *50* | *0* | *107* | *89 - 112* | | | | |

**ALS Houston, US** Date: 14-Jun-23

**Client:** Aptim Environmental & Infrastucture, Inc.
**Project:** LHAAP46 Febuary 2023
**WorkOrder:** HS23020265

**QC BATCH REPORT**

**Batch ID:** R427850 ( 0 ) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

**MSD** Sample ID: **HS23020265-04MSD** Units: **ug/L** Analysis Date: **11-Feb-2023 15:45**
Client ID: **46WW02-230206** Run ID: **VOA6_427850** SeqNo: **7120411** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| cis-1,2-Dichloroethene | 22.7 | 1.0 | 20 | 1.768 | 105 | 78 - 123 | 17.38 | 26.6 | 20 | R |
| Trichloroethene | 48.93 | 1.0 | 20 | 28.68 | 101 | 79 - 123 | 44.84 | 8.73 | 20 | |
| Vinyl chloride | 14.19 | 1.0 | 20 | 0.4346 | 68.8 | 58 - 137 | 11.53 | 20.7 | 20 | R |
| *Surr: 1,2-Dichloroethane-d4* | *50.69* | *1.0* | *50* | *0* | *101* | *81 - 118* | *50.33* | *0.716* | *20* | |
| *Surr: 4-Bromofluorobenzene* | *53.66* | *1.0* | *50* | *0* | *107* | *85 - 114* | *54.23* | *1.07* | *20* | |
| *Surr: Dibromofluoromethane* | *45.8* | *1.0* | *50* | *0* | *91.6* | *80 - 119* | *46.11* | *0.677* | *20* | |
| *Surr: Toluene-d8* | *53.17* | *1.0* | *50* | *0* | *106* | *89 - 112* | *53.66* | *0.914* | *20* | |

**The following samples were analyzed in this batch:** HS23020265-01 HS23020265-02 HS23020265-03 HS23020265-04 HS23020265-05 HS23020265-06 HS23020265-07

**ALS Houston, US** Date: 14-Jun-23

**Client:** Aptim Environmental & Infrastucture, Inc.
**Project:** LHAAP46 Febuary 2023
**WorkOrder:** HS23020265

**QC BATCH REPORT**

**Batch ID: R428010 ( 0 )** **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

**MBLK** Sample ID: **VBLKW-230214** Units: **ug/L** Analysis Date: **14-Feb-2023 12:30**
Client ID: Run ID: **VOA6_428010** SeqNo: **7123872** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| cis-1,2-Dichloroethene | 0.50 | 1.0 | | | | | | | | U |
| *Surr: 1,2-Dichloroethane-d4* | *50.66* | *1.0* | *50* | *0* | *101* | *81 - 118* | | | | |
| *Surr: 4-Bromofluorobenzene* | *53.44* | *1.0* | *50* | *0* | *107* | *85 - 114* | | | | |
| *Surr: Dibromofluoromethane* | *47.51* | *1.0* | *50* | *0* | *95.0* | *80 - 119* | | | | |
| *Surr: Toluene-d8* | *53.79* | *1.0* | *50* | *0* | *108* | *89 - 112* | | | | |

**LCS** Sample ID: **VLCSW-230214** Units: **ug/L** Analysis Date: **14-Feb-2023 11:48**
Client ID: Run ID: **VOA6_428010** SeqNo: **7123871** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| cis-1,2-Dichloroethene | 19.38 | 1.0 | 20 | 0 | 96.9 | 78 - 123 | | | | |
| *Surr: 1,2-Dichloroethane-d4* | *56.68* | *1.0* | *50* | *0* | *113* | *81 - 118* | | | | |
| *Surr: 4-Bromofluorobenzene* | *54.26* | *1.0* | *50* | *0* | *109* | *85 - 114* | | | | |
| *Surr: Dibromofluoromethane* | *50.25* | *1.0* | *50* | *0* | *100* | *80 - 119* | | | | |
| *Surr: Toluene-d8* | *51.35* | *1.0* | *50* | *0* | *103* | *89 - 112* | | | | |

**MS** Sample ID: **HS23020265-01MS** Units: **ug/L** Analysis Date: **14-Feb-2023 16:01**
Client ID: **LHSMW21-230206** Run ID: **VOA6_428010** SeqNo: **7123882** PrepDate: DF: **5**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| cis-1,2-Dichloroethene | 282.8 | 5.0 | 100 | 195.5 | 87.3 | 78 - 123 | | | | |
| *Surr: 1,2-Dichloroethane-d4* | *255* | *5.0* | *250* | *0* | *102* | *81 - 118* | | | | |
| *Surr: 4-Bromofluorobenzene* | *266.4* | *5.0* | *250* | *0* | *107* | *85 - 114* | | | | |
| *Surr: Dibromofluoromethane* | *234.3* | *5.0* | *250* | *0* | *93.7* | *80 - 119* | | | | |
| *Surr: Toluene-d8* | *272.6* | *5.0* | *250* | *0* | *109* | *89 - 112* | | | | |

**ALS Houston, US** Date: 14-Jun-23

**Client:** Aptim Environmental & Infrastucture, Inc.
**Project:** LHAAP46 Febuary 2023
**WorkOrder:** HS23020265

**QC BATCH REPORT**

**Batch ID:** R428010 ( 0 ) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

**MSD** Sample ID: **HS23020265-01MSD** Units: **ug/L** Analysis Date: **14-Feb-2023 16:22**
Client ID: **LHSMW21-230206** Run ID: **VOA6_428010** SeqNo: **7123883** PrepDate: DF: **5**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| cis-1,2-Dichloroethene | 270.2 | 5.0 | 100 | 195.5 | 74.7 | 78 - 123 | 282.8 | 4.55 | 20 | S |
| *Surr: 1,2-Dichloroethane-d4* | *243.2* | *5.0* | *250* | *0* | *97.3* | *81 - 118* | *255* | *4.75* | *20* | |
| *Surr: 4-Bromofluorobenzene* | *270.3* | *5.0* | *250* | *0* | *108* | *85 - 114* | *266.4* | *1.45* | *20* | |
| *Surr: Dibromofluoromethane* | *230.5* | *5.0* | *250* | *0* | *92.2* | *80 - 119* | *234.3* | *1.66* | *20* | |
| *Surr: Toluene-d8* | *266.9* | *5.0* | *250* | *0* | *107* | *89 - 112* | *272.6* | *2.1* | *20* | |

**The following samples were analyzed in this batch:** HS23020265-01

**ALS Houston, US** Date: 14-Jun-23

**Client:** Aptim Environmental & Infrastucture, Inc.
**Project:** LHAAP46 Febuary 2023
**WorkOrder:** HS23020265

**QC BATCH REPORT**

**Batch ID:** R427523 ( 0 ) **Instrument:** ICS-Integrion **Method:** ANIONS BY SW9056A

**MBLK** Sample ID: **MBLK** Units: **mg/L** Analysis Date: **07-Feb-2023 16:08**
Client ID: Run ID: **ICS-Integrion_427523** SeqNo: **7113148** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 0.250 | 0.500 | | | | | | | | U |
| Nitrogen, Nitrate (As N) | 0.0500 | 0.100 | | | | | | | | U |

**LCS** Sample ID: **LCS** Units: **mg/L** Analysis Date: **07-Feb-2023 16:20**
Client ID: Run ID: **ICS-Integrion_427523** SeqNo: **7113149** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 21.9 | 0.500 | 20 | 0 | 109 | 80 - 120 | | | | |
| Nitrogen, Nitrate (As N) | 4.272 | 0.100 | 4 | 0 | 107 | 80 - 120 | | | | |

**MS** Sample ID: **HS23020265-04MS** Units: **mg/L** Analysis Date: **07-Feb-2023 16:43**
Client ID: **46WW02-230206** Run ID: **ICS-Integrion_427523** SeqNo: **7113153** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 62.66 | 0.500 | 10 | 54.38 | 82.9 | 80 - 120 | | | | O |
| Nitrogen, Nitrate (As N) | 2.147 | 0.100 | 2 | 0 | 107 | 80 - 120 | | | | |

**MSD** Sample ID: **HS23020265-04MSD** Units: **mg/L** Analysis Date: **07-Feb-2023 16:49**
Client ID: **46WW02-230206** Run ID: **ICS-Integrion_427523** SeqNo: **7113154** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 62.43 | 0.500 | 10 | 54.38 | 80.5 | 80 - 120 | 62.66 | 0.379 | 20 | O |
| Nitrogen, Nitrate (As N) | 2.145 | 0.100 | 2 | 0 | 107 | 80 - 120 | 2.147 | 0.0746 | 20 | |

**The following samples were analyzed in this batch:** HS23020265-01 HS23020265-02 HS23020265-04

**ALS Houston, US** Date: 14-Jun-23

**Client:** Aptim Environmental & Infrastucture, Inc.
**Project:** LHAAP46 Febuary 2023
**WorkOrder:** HS23020265

**QC BATCH REPORT**

**Batch ID:** R427653 ( 0 ) **Instrument:** ICS-Integrion **Method:** ANIONS BY SW9056A

**MBLK** Sample ID: **MBLK** Units: **mg/L** Analysis Date: **08-Feb-2023 10:20**
Client ID: Run ID: **ICS-Integrion_427653** SeqNo: **7115876** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 0.250 | 0.500 | | | | | | | | U |
| Sulfate | 0.250 | 0.500 | | | | | | | | U |

**LCS** Sample ID: **LCS** Units: **mg/L** Analysis Date: **08-Feb-2023 10:26**
Client ID: Run ID: **ICS-Integrion_427653** SeqNo: **7115877** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 20.93 | 0.500 | 20 | 0 | 105 | 80 - 120 | | | | |
| Sulfate | 21.85 | 0.500 | 20 | 0 | 109 | 80 - 120 | | | | |

**MS** Sample ID: **HS23020265-04MS** Units: **mg/L** Analysis Date: **08-Feb-2023 10:55**
Client ID: **46WW02-230206** Run ID: **ICS-Integrion_427653** SeqNo: **7115881** PrepDate: DF: **10**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 150.5 | 5.00 | 100 | 50.3 | 100 | 80 - 120 | | | | |
| Sulfate | 356.4 | 5.00 | 100 | 269.5 | 86.9 | 80 - 120 | | | | |

**MSD** Sample ID: **HS23020265-04MSD** Units: **mg/L** Analysis Date: **08-Feb-2023 11:00**
Client ID: **46WW02-230206** Run ID: **ICS-Integrion_427653** SeqNo: **7115882** PrepDate: DF: **10**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 153.3 | 5.00 | 100 | 50.3 | 103 | 80 - 120 | 150.5 | 1.84 | 20 | |
| Sulfate | 362.6 | 5.00 | 100 | 269.5 | 93.1 | 80 - 120 | 356.4 | 1.72 | 20 | |

**The following samples were analyzed in this batch:** HS23020265-01 HS23020265-02 HS23020265-04

**ALS Houston, US** Date: 14-Jun-23

**Client:** Aptim Environmental & Infrastucture, Inc.
**Project:** LHAAP46 Febuary 2023
**WorkOrder:** HS23020265

**QC BATCH REPORT**

**Batch ID:** R428477 ( 0 ) **Instrument:** TOC_05 **Method:** TOTAL ORGANIC CARBON - SM5310B-2011

**MBLK** Sample ID: **MBLK-02142023** Units: **mg/L** Analysis Date: **20-Feb-2023 13:26**
Client ID: Run ID: **TOC_05_428477** SeqNo: **7138315** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Organic Carbon, Total | 1.00 | 1.00 | | | | | | | | U |

**LCS** Sample ID: **LCS-02142023** Units: **mg/L** Analysis Date: **20-Feb-2023 13:41**
Client ID: Run ID: **TOC_05_428477** SeqNo: **7138316** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Organic Carbon, Total | 11.42 | 1.00 | 10 | 0 | 114 | 85 - 115 | | | | |

**LCSD** Sample ID: **LCSD-02142023** Units: **mg/L** Analysis Date: **20-Feb-2023 13:55**
Client ID: Run ID: **TOC_05_428477** SeqNo: **7138317** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Organic Carbon, Total | 11.48 | 1.00 | 10 | 0 | 115 | 85 - 115 | 11.42 | 0.524 | 20 | |

**MS** Sample ID: **HS23020265-04MS** Units: **mg/L** Analysis Date: **20-Feb-2023 15:32**
Client ID: **46WW02-230206** Run ID: **TOC_05_428477** SeqNo: **7138324** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Organic Carbon, Total | 20.74 | 1.00 | 10 | 10.31 | 104 | 80 - 120 | | | | |

**The following samples were analyzed in this batch:** HS23020265-01 HS23020265-02 HS23020265-04

**ALS Houston, US** Date: 14-Jun-23

**Client:** Aptim Environmental & Infrastucture, Inc.
**Project:** LHAAP46 Febuary 2023
**WorkOrder:** **HS23020265**

**QUALIFIERS, ACRONYMS, UNITS**

| Qualifier | Description |
|---|---|
| * | Value exceeds Regulatory Limit |
| a | Not accredited |
| B | Analyte detected in the associated Method Blank above the Reporting Limit |
| E | Value above quantitation range |
| H | Analyzed outside of Holding Time |
| J | Analyte detected below quantitation limit |
| M | Manually integrated, see raw data for justification |
| n | Not offered for accreditation |
| ND | Not Detected at the Reporting Limit |
| O | Sample amount is > 4 times amount spiked |
| P | Dual Column results percent difference > 40% |
| R | RPD above laboratory control limit |
| S | Spike Recovery outside laboratory control limits |
| U | Analyzed but not detected above the MDL/SDL |

| Acronym | Description |
|---|---|
| DCS | Detectability Check Study |
| DUP | Method Duplicate |
| LCS | Laboratory Control Sample |
| LCSD | Laboratory Control Sample Duplicate |
| MBLK | Method Blank |
| MDL | Method Detection Limit |
| MQL | Method Quantitation Limit |
| MS | Matrix Spike |
| MSD | Matrix Spike Duplicate |
| PDS | Post Digestion Spike |
| PQL | Practical Quantitaion Limit |
| SD | Serial Dilution |
| SDL | Sample Detection Limit |
| TRRP | Texas Risk Reduction Program |

| Unit Reported | Description |
|---|---|
| mg/L | Milligrams per Liter |

## CERTIFICATIONS,ACCREDITATIONS & LICENSES

| Agency | Number | Expire Date |
|---|---|---|
| Arkansas | 88-00356 | 27-Mar-2024 |
| Dept of Defense | L23-358 | 31-May-2025 |
| Florida | E87611-37 | 30-Jun-2023 |
| Kansas | E-10352; 2022-2023 | 31-Jul-2023 |
| Louisiana | 03087, 2022-2023 | 30-Jun-2023 |
| Maryland | 343, 2022-2023 | 30-Jun-2023 |
| North Carolina | 624-2023 | 31-Dec-2023 |
| Oklahoma | 2022-141 | 31-Aug-2023 |
| Texas | T104704231-23-31 | 30-Apr-2024 |
| Utah | TX026932022-13 | 31-Jul-2023 |

**ALS Houston, US** Date: 14-Jun-23

## Sample Receipt Checklist

**Work Order ID:** HS23020265 **Date/Time Received:** **07-Feb-2023 11:00**

**Client Name:** CBI-Houston **Received by:** **Nilesh D. Ranchod**

| **Completed By:** | /S/ Nilesh D. Ranchod | 07-Feb-2023 12:04 | **Reviewed by:** | /S/ Dane J. Wacasey | 14-Feb-2023 17:35 |
|---|---|---|---|---|---|
| | eSignature | Date/Time | | eSignature | Date/Time |

Matrices: **WATER** Carrier name: **FedEx**

| | | | | |
|---|---|---|---|---|
| Shipping container/cooler in good condition? | Yes ☑ | No ☐ | Not Present ☐ | |
| Custody seals intact on shipping container/cooler? | Yes ☑ | No ☐ | Not Present ☐ | |
| Custody seals intact on sample bottles? | Yes ☐ | No ☐ | Not Present ☑ | |
| VOA/TX1005/TX1006 Solids in hermetically sealed vials? | Yes ☐ | No ☐ | Not Present ☑ | |
| Chain of custody present? | Yes ☑ | No ☐ | 2 Page(s) | |
| Chain of custody signed when relinquished and received? | Yes ☑ | No ☐ | | |
| Samplers name present on COC? | Yes ☑ | No ☐ | | |
| Chain of custody agrees with sample labels? | Yes ☑ | No ☐ | | |
| Samples in proper container/bottle? | Yes ☑ | No ☐ | | |
| Sample containers intact? | Yes ☑ | No ☐ | | |
| Sufficient sample volume for indicated test? | Yes ☑ | No ☐ | | |
| All samples received within holding time? | Yes ☑ | No ☐ | | |
| Container/Temp Blank temperature in compliance? | Yes ☑ | No ☐ | | |

| | | |
|---|---|---|
| Temperature(s)/Thermometer(s): | 0.9C/0.4C UC/C | IR 31 |
| Cooler(s)/Kit(s): | 49090 | |
| Date/Time sample(s) sent to storage: | 02/07/2023 12:15 | |

| | | | |
|---|---|---|---|
| Water - VOA vials have zero headspace? | Yes ☑ | No ☐ | No VOA vials submitted ☐ |
| Water - pH acceptable upon receipt? | Yes ☑ | No ☐ | N/A ☐ |
| pH adjusted? | Yes ☐ | No ☑ | N/A ☐ |
| pH adjusted by: | | | |

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

Corrective Action:

# CHAIN OF CUSTODY

Name Of Lab Shipping To: ALS 10450 Stancliff Rd. Suite 210 Houston, TX, 77099 (281) 575-2190 ATTN: Dane Wacasey

Page 1 of 1

Project: APTIM LONGHORN
ARMY AMMN. PLANT (LHAAP)
GROUNDWATER TREATMENT PLANT (GWTP)
KARNACK, TEXAS

Project No.
501032

Job:
**LHAAP46 February 2023**

Prepared By:
Scott Beesinger

P.O. Number

| Field Sample I.D. | Sample Matrix | Date / Time | MS / MSD | No. OF CONTAINERS | VOC by SW 8260B | TOC by SM5310C | MEE by RSK 175 | Anions (chloride sulfate, nitrate) by SW9056 | CO2 by RSK 175 | | | | | Remarks (Preservatives, etc.) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LHSmw21-230206 | wG | 2/6/23 0735 | | 12 | X | X | X | X | X | | | | | |
| 46wwl6-230206 | wG | 2/6/23 0820 | | 12 | X | X | X | X | X | | | | | |
| 46wwl03-230206 | wG | 2/6/23 0915 | | 3 | X | | | | | | | | | |
| 46wwl02-230206 | wG | 2/6/23 1000 | | 12 | X | X | X | X | X | | | | | |
| 46wwl02-230206-ms | wG | 2/6/23 1000 | | 12 | X | X | X | X | X | | | | | |
| 46wwl02-230206-msD | wG | 2/6/23 1000 | | 12 | X | X | X | X | X | | | | | |
| 46wwl07-230206 | wG | 2/6/23 1110 | | 3 | X | | | | | | | | | |
| 46wwl4-230206 | wG | 2/6/23 1155 | | 3 | X | | | | | | | | | |

Additional Remarks: **Standard TAT on all parameters. Please email results to Vicki.Graves@aptim.com and invoices to fedinvoices@aptim.com**

| Relinquished By: | Date | Time | Received By: | Date | Time | Relinquished By: | Date | Time | Received By: | Date | Time |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Scott Beesinger | 2/6/23 | 1330 | NC | 2/7/23 | 11:00 | | | | | | |

**For Lab Use Only**

| Received At Lab By: | Date | Time | Airbill No. | Opened By: | Date | Time | Temp of Container | Seal No. | Condition |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |

Remarks:

49090 HC 0.9

Aptim Environmental & Infrastucture, Inc.
LHAAP46 Febuary 2023

HS23020265

(Word) S:\T-ces\Forms\Chain of Custody - BiWeekly

# CHAIN OF CUSTODY

Name Of Lab Shipping To: ALS 10450 Stancliff Rd. Suite 210 Houston, TX, 77099 (281) 575-2190 ATTN: Dane Wacasey



**Project:** APTIM LONGHORN
ARMY AMMN. PLANT (LHAAP)
GROUNDWATER TREATMENT PLANT (GWTP)
KARNACK, TEXAS

**Project No.** 501032

**Job:** LHAAP46 February 2023

**Prepared By:** Scott Beesinger

**P.O. Number**

| Field Sample I.D. | Sample Matrix | Date / Time | MS / MSD | No. OF CONTAINERS | Analyses: VOC by SW 8260B | TOC by SM5310C | MEE by RSK 175 | Anions (chloride sulfate, nitrate) by SW9056 | CO2 by RSK 175 | | | | | | Remarks (Preservatives, etc.) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TRIP BLANK-230206 | W | 2/6/23 | | 2 | X | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |

Aptim Environmental & Infrastucture, Inc.
LHAAP46 Febuary 2023

HS2302026S

Additional Remarks: **Standard TAT on all parameters. Please email results to Vicki.Graves@aptim.com and invoices to fedinvoices@aptim.com**

| Relinquished By: | Date | Time | Received By: | Date | Time | Relinquished By: | Date | Time | Received By: | Date | Time |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Scott Beesinger | 2/6/23 | 1330 | [illegible] | 2/7/23 | 1100 | | | | | | |

**For Lab Use Only**

| Received At Lab By: | Date | Time | Airbill No. | Opened By: | Date | Time | Temp of Container | Seal No. | Condition |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |

Remarks:

ALS
10450 Stancliff Rd., Suite 210
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5887

u0090

**CUSTODY SEAL**

Date: 2/6/23 Time: 1330
Name: Scott Beesinger
Company: BHATE

Seal Broken By: jlm
Date: 02/07/23

u0090 FEB 6 / 2023

u0090

ORIGIN ID:SGRA (903) 930-8193
ATT: SCOTT BEESINGER
APTIM ENVIRONMENTAL & INFRAST. INC
1203-B EAST BRAND AVE PHB202

MARSHALL, TX 75670
UNITED STATES US

SHIP DATE: 31JAN23
ACTWGT: 1.00 LB MAN
CAD: 0221247/CAFE3616
DIMS: 19x16x13 IN

TO SHIPPING DEPT
ALS LABORATORY GROUP
10450 STANCLIFF RD
SUITE 210
HOUSTON TX 77099
(281) 530-5868
REF: LHAAP-46-90619-DW

RMA:

FedEx Express

0221 0230 2994 7823

PRIORITY OVERNIGHT

AB SGRA

77099
TX-US
IAH

4236674 06Feb2023 GGGA 5810I/B002/C098

eurofins | Environment Testing

# ANALYTICAL REPORT

## PREPARED FOR

Attn: Dane Wacasey
ALS Group USA, Corp
10450 Stancliff Rd.
Suite 210
Houston, Texas 77099

Generated 2/10/2023 11:32:34 AM

## JOB DESCRIPTION

HS23020265

## JOB NUMBER

410-114929-1

Eurofins Lancaster Laboratories Environment Testing, LLC
2425 New Holland Pike
Lancaster PA 17601

See page two for job notes and contact information.



my EOL

# Eurofins Lancaster Laboratories Environment Testing, LLC



## Job Notes

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

## Authorization



Generated
2/10/2023 11:32:34 AM

Authorized for release by
Kelly Bauer, Project Manager
Kelly.Bauer@et.eurofinsus.com
(717)556-7262

# Eurofins Lancaster Laboratories Environment Testing, LLC

## Compliance Statement

Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.
· QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
· Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
· Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

This report shall not be reproduced except in full, without the written approval of the laboratory.

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# Definitions/Glossary

Client: ALS Group USA, Corp
Job ID: 410-114929-1
Project/Site: HS23020265

## Qualifiers

### GC VOA

| Qualifier | Qualifier Description |
|---|---|
| J1 | Estimated: The quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria. |
| M | Manual integrated compound. |
| U | Undetected at the Limit of Detection. |

## Glossary

| Abbreviation | These commonly used abbreviations may or may not be present in this report. |
|---|---|
| ¤ | Listed under the "D" column to designate that the result is reported on a dry weight basis |
| %R | Percent Recovery |
| CFL | Contains Free Liquid |
| CFU | Colony Forming Unit |
| CNF | Contains No Free Liquid |
| DER | Duplicate Error Ratio (normalized absolute difference) |
| Dil Fac | Dilution Factor |
| DL | Detection Limit (DoD/DOE) |
| DL, RA, RE, IN | Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample |
| DLC | Decision Level Concentration (Radiochemistry) |
| EDL | Estimated Detection Limit (Dioxin) |
| LOD | Limit of Detection (DoD/DOE) |
| LOQ | Limit of Quantitation (DoD/DOE) |
| MCL | EPA recommended "Maximum Contaminant Level" |
| MDA | Minimum Detectable Activity (Radiochemistry) |
| MDC | Minimum Detectable Concentration (Radiochemistry) |
| MDL | Method Detection Limit |
| ML | Minimum Level (Dioxin) |
| MPN | Most Probable Number |
| MQL | Method Quantitation Limit |
| NC | Not Calculated |
| ND | Not Detected at the reporting limit (or MDL or EDL if shown) |
| NEG | Negative / Absent |
| POS | Positive / Present |
| PQL | Practical Quantitation Limit |
| PRES | Presumptive |
| QC | Quality Control |
| RER | Relative Error Ratio (Radiochemistry) |
| RL | Reporting Limit or Requested Limit (Radiochemistry) |
| RPD | Relative Percent Difference, a measure of the relative difference between two points |
| TEF | Toxicity Equivalent Factor (Dioxin) |
| TEQ | Toxicity Equivalent Quotient (Dioxin) |
| TNTC | Too Numerous To Count |

# Case Narrative

Client: ALS Group USA, Corp
Project/Site: HS23020265

Job ID: 410-114929-1

## Job ID: 410-114929-1

**Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC**

**Narrative**

**Job Narrative**
**410-114929-1**

**Receipt**

The samples were received on 2/9/2023 10:25 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 2.7°C

**GC VOA**

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

# Detection Summary

Client: ALS Group USA, Corp
Project/Site: HS23020265

Job ID: 410-114929-1

## Client Sample ID: HS23020265-01 — Lab Sample ID: 410-114929-1

| Analyte | Result | Qualifier | LOQ | DL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| Carbon dioxide | 46000 | | 12000 | 2600 | ug/L | 1 | | RSK-175 | Total/NA |

## Client Sample ID: HS23020265-02 — Lab Sample ID: 410-114929-2

No Detections.

## Client Sample ID: HS23020265-04 — Lab Sample ID: 410-114929-3

| Analyte | Result | Qualifier | LOQ | DL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| Carbon dioxide | 90000 | J1 | 12000 | 2600 | ug/L | 1 | | RSK-175 | Total/NA |

This Detection Summary does not include radiochemical test results.

# Client Sample Results

Client: ALS Group USA, Corp
Project/Site: HS23020265

Job ID: 410-114929-1

## Client Sample ID: HS23020265-01

**Lab Sample ID: 410-114929-1**

**Date Collected: 02/06/23 07:35**
**Matrix: Water**
**Date Received: 02/09/23 10:25**

**Method: RSK-175 - Dissolved Gases (GC)**

| Analyte | Result | Qualifier | LOQ | DL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Carbon dioxide** | **46000** | | 12000 | 2600 | ug/L | | 02/10/23 08:21 | 02/10/23 09:41 | 1 |

## Client Sample ID: HS23020265-02

**Lab Sample ID: 410-114929-2**

**Date Collected: 02/06/23 08:20**
**Matrix: Water**
**Date Received: 02/09/23 10:25**

**Method: RSK-175 - Dissolved Gases (GC)**

| Analyte | Result | Qualifier | LOQ | DL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Carbon dioxide | 2600 | U | 12000 | 2600 | ug/L | | 02/10/23 08:21 | 02/10/23 09:48 | 1 |

## Client Sample ID: HS23020265-04

**Lab Sample ID: 410-114929-3**

**Date Collected: 02/06/23 10:00**
**Matrix: Water**
**Date Received: 02/09/23 10:25**

**Method: RSK-175 - Dissolved Gases (GC)**

| Analyte | Result | Qualifier | LOQ | DL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Carbon dioxide** | **90000** | **J1** | 12000 | 2600 | ug/L | | 02/10/23 08:21 | 02/10/23 09:56 | 1 |

# QC Sample Results

Client: ALS Group USA, Corp
Project/Site: HS23020265

Job ID: 410-114929-1

## Method: RSK-175 - Dissolved Gases (GC)

**Lab Sample ID: MB 410-343431/1-A**
**Matrix: Water**
**Analysis Batch: 343395**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 343431**

| Analyte | MB Result | MB Qualifier | LOQ | DL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Carbon dioxide | 2600 | U | 12000 | 2600 | ug/L | | 02/10/23 08:21 | 02/10/23 09:12 | 1 |

**Lab Sample ID: LCS 410-343431/2-A**
**Matrix: Water**
**Analysis Batch: 343395**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 343431**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Carbon dioxide | | | 35800 | 33700 | | ug/L | | 94 | 80 - 122 | | |

**Lab Sample ID: 410-114929-3 MS**
**Matrix: Water**
**Analysis Batch: 343395**

**Client Sample ID: HS23020265-04**
**Prep Type: Total/NA**
**Prep Batch: 343431**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Carbon dioxide | 90000 | J1 | 35800 | 151000 | M J1 | ug/L | | 168 | 80 - 122 | | |

**Lab Sample ID: 410-114929-3 MSD**
**Matrix: Water**
**Analysis Batch: 343395**

**Client Sample ID: HS23020265-04**
**Prep Type: Total/NA**
**Prep Batch: 343431**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Carbon dioxide | 90000 | J1 | 35800 | 210000 | M J1 | ug/L | | 334 | 80 - 122 | 33 | 30 |

# QC Association Summary

Client: ALS Group USA, Corp
Project/Site: HS23020265

Job ID: 410-114929-1

## GC VOA

### Analysis Batch: 343395

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 410-114929-1 | HS23020265-01 | Total/NA | Water | RSK-175 | 343431 |
| 410-114929-2 | HS23020265-02 | Total/NA | Water | RSK-175 | 343431 |
| 410-114929-3 | HS23020265-04 | Total/NA | Water | RSK-175 | 343431 |
| MB 410-343431/1-A | Method Blank | Total/NA | Water | RSK-175 | 343431 |
| LCS 410-343431/2-A | Lab Control Sample | Total/NA | Water | RSK-175 | 343431 |
| 410-114929-3 MS | HS23020265-04 | Total/NA | Water | RSK-175 | 343431 |
| 410-114929-3 MSD | HS23020265-04 | Total/NA | Water | RSK-175 | 343431 |

### Prep Batch: 343431

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 410-114929-1 | HS23020265-01 | Total/NA | Water | RSK-175 | |
| 410-114929-2 | HS23020265-02 | Total/NA | Water | RSK-175 | |
| 410-114929-3 | HS23020265-04 | Total/NA | Water | RSK-175 | |
| MB 410-343431/1-A | Method Blank | Total/NA | Water | RSK-175 | |
| LCS 410-343431/2-A | Lab Control Sample | Total/NA | Water | RSK-175 | |
| 410-114929-3 MS | HS23020265-04 | Total/NA | Water | RSK-175 | |
| 410-114929-3 MSD | HS23020265-04 | Total/NA | Water | RSK-175 | |

# Lab Chronicle

Client: ALS Group USA, Corp
Project/Site: HS23020265

Job ID: 410-114929-1

## Client Sample ID: HS23020265-01

**Lab Sample ID: 410-114929-1**

**Date Collected: 02/06/23 07:35**

**Matrix: Water**

**Date Received: 02/09/23 10:25**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab | Prepared or Analyzed |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | RSK-175 | | | 343431 | WN7O | ELLE | 02/10/23 08:21 |
| Total/NA | Analysis | RSK-175 | | 1 | 343395 | WN7O | ELLE | 02/10/23 09:41 |

## Client Sample ID: HS23020265-02

**Lab Sample ID: 410-114929-2**

**Date Collected: 02/06/23 08:20**

**Matrix: Water**

**Date Received: 02/09/23 10:25**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab | Prepared or Analyzed |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | RSK-175 | | | 343431 | WN7O | ELLE | 02/10/23 08:21 |
| Total/NA | Analysis | RSK-175 | | 1 | 343395 | WN7O | ELLE | 02/10/23 09:48 |

## Client Sample ID: HS23020265-04

**Lab Sample ID: 410-114929-3**

**Date Collected: 02/06/23 10:00**

**Matrix: Water**

**Date Received: 02/09/23 10:25**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab | Prepared or Analyzed |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | RSK-175 | | | 343431 | WN7O | ELLE | 02/10/23 08:21 |
| Total/NA | Analysis | RSK-175 | | 1 | 343395 | WN7O | ELLE | 02/10/23 09:56 |

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

# Accreditation/Certification Summary

Client: ALS Group USA, Corp
Job ID: 410-114929-1
Project/Site: HS23020265

## Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

The accreditations/certifications listed below are applicable to this report.

| Authority | Program | Identification Number | Expiration Date |
|---|---|---|---|
| A2LA | Dept. of Defense ELAP | 0001.01 | 11-30-24 |

# Method Summary

Client: ALS Group USA, Corp
Project/Site: HS23020265

Job ID: 410-114929-1

| Method | Method Description | Protocol | Laboratory |
|---|---|---|---|
| RSK-175 | Dissolved Gases (GC) | RSK | ELLE |
| RSK-175 | Dissolved Gases Prep | RSK | ELLE |

**Protocol References:**

RSK = Sample Prep And Calculations For Dissolved Gas Analysis In Water Samples Using A GC Headspace Equilibration Technique , RSKSOP-175, Rev. 0, 8/11/94, USEPA Research Lab

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

# Sample Summary

Client: ALS Group USA, Corp
Project/Site: HS23020265

Job ID: 410-114929-1

| Lab Sample ID | Client Sample ID | Matrix | Collected | Received |
|---|---|---|---|---|
| 410-114929-1 | HS23020265-01 | Water | 02/06/23 07:35 | 02/09/23 10:25 |
| 410-114929-2 | HS23020265-02 | Water | 02/06/23 08:20 | 02/09/23 10:25 |
| 410-114929-3 | HS23020265-04 | Water | 02/06/23 10:00 | 02/09/23 10:25 |




10450 Stancliff Rd, Ste 210
Houston, TX 77099
**T:** +1 281 530 5656
**F:** +1 281 530 5887
**www.alsglobal.com**

# Subcontract Chain of Custody

**SAMPLING STATE:** **Dept of Defense** **COC ID:** **20913**

**SUBCONTRACT TO:**

Eurofins Lancaster Laboratories Envt Testing
2425 New Holland Pike
Lancaster, PA 17601 **Phone:** +1 717 656 2300

**CUSTOMER INFORMATION:**

| | |
|---|---|
| **Company:** | ALS Houston |
| **Contact:** | Dane J. Wacasey |
| **Address:** | 10450 Stancliff Rd, Ste 210 |
| **Phone:** | +1 281 530 5656 |
| **Email:** | Dane.Wacasey@alsglobal.com |
| **Alternate Contact:** | Jumoke M. Lawal |
| **Email:** | jumoke.lawal@alsglobal.com |

**INVOICE INFORMATION:**

| | |
|---|---|
| **Company:** | ALS Houston |
| **Contact:** | Accounts Payable |
| **Address:** | 10450 Stancliff Rd, Ste 210 |
| **Phone:** | +1 281 530 5656 |
| **Reference:** | HS23020265 |
| **TSR:** | Ron Martino |

| | LAB SAMPLE ID | CLIENT SAMPLE ID | MATRIX | COLLECT DATE |
|---|---|---|---|---|
| | ANALYSIS REQUESTED | | | DUE DATE |
| 1. | **HS23020265-01** | **LHSMW21-230206** | **Water** | **06 Feb 2023 07:35** |
| | RSK-CO2; DoD Level II & IV, Equ_APTIM_GISKey | | | 21 Feb 2023 |
| 2. | **HS23020265-02** | **46WW16-230206** | **Water** | **06 Feb 2023 08:20** |
| | RSK-CO2; DoD Level II & IV, Equ_APTIM_GISKey | | | 21 Feb 2023 |
| 3. | **HS23020265-04** | **46WW02-230206** | **Water** | **06 Feb 2023 10:00** |
| | RSK-CO2; DoD Level II & IV, Equ_APTIM_GISKey | | | 21 Feb 2023 |

**Comments:** MS/MSD - HS23020265-04

Please analyze for the analysis listed above.
Send report to the emails shown above.

**QC Level:** DOD IV (DoD Data Package)

Relinquished By: _____ Date/Time: 2/8/23 1800

Received By: _____ Date/Time: 2/9/23 10:25

Cooler ID(s): _____ Temperature(s): _____

2.7

10450 Stancliff Rd, Ste 210
Houston, TX 77099
**T:** +1 281 530 5656
**F:** +1 281 530 5887
**www.alsglobal.com**

# Purchase Order

**PO: HS23020265**

**VENDOR:**

Eurofins Lancaster Laboratories Envt Testing
2425 New Holland Pike
Lancaster, PA 17601

**Phone:** +1 717 656 2300

**CUSTOMER INFORMATION:**

| | |
|---|---|
| **Company:** | ALS Houston |
| **Contact:** | Dane J. Wacasey |
| **Address:** | 10450 Stancliff Rd, Ste 210 |
| **Phone:** | +1 281 530 5656 |
| **Email:** | Dane.Wacasey@alsglobal.com |
| **Alternate Contact:** | Jumoke M. Lawal |
| **Email:** | jumoke.lawal@alsglobal.com |

**INVOICE INFORMATION:**

| | |
|---|---|
| **Company:** | ALS Houston |
| **Contact:** | Accounts Payable |
| **Address:** | 10450 Stancliff Rd, Ste 210 |
| **Phone:** | +1 281 530 5656 |
| **Reference:** | 20913 |
| **TSR:** | Ron Martino |

| | Item | Catalog No | Unit Price | Quantity | Ext Price |
|---|---|---|---|---|---|
| 1. | RSK-CO2; DoD Level II & IV, Equ_APTIM_GISKey | NA | $120.00 | 3 | $360.00 |

**Order Total:** $360.00

# Login Sample Receipt Checklist

Client: ALS Group USA, Corp

Job Number: 410-114929-1

**Login Number: 114929**
**List Number: 1**
**Creator: Ballard, Megan**

**List Source: Eurofins Lancaster Laboratories Environment Testing, LLC**

| Question | Answer | Comment |
|---|---|---|
| The cooler's custody seal is intact. | True | |
| The cooler or samples do not appear to have been compromised or tampered with. | True | |
| Samples were received on ice. | True | |
| Cooler Temperature is acceptable (</=6C, not frozen). | True | |
| Cooler Temperature is recorded. | True | |
| WV: Container Temperature is acceptable (</=6C, not frozen). | N/A | |
| WV: Container Temperature is recorded. | N/A | |
| COC is present. | True | |
| COC is filled out in ink and legible. | True | |
| COC is filled out with all pertinent information. | True | |
| There are no discrepancies between the containers received and the COC. | True | |
| Sample containers have legible labels. | True | |
| Containers are not broken or leaking. | True | |
| Sample collection date/times are provided. | True | |
| Appropriate sample containers are used. | True | |
| Sample bottles are completely filled. | True | |
| There is sufficient vol. for all requested analyses. | True | |
| Is the Field Sampler's name present on COC? | False | Received project as a subcontract. |
| Sample custody seals are intact. | N/A | |
| VOA sample vials do not have headspace >6mm in diameter (none, if from WV)? | True | |

# HS23020265-MSVOA-SW8260

ALS WO# HS23020265

01255213

right solutions.
right partner.

Form 1

# Organic Analysis Data Sheet

## Volatiles by  by EPA 8260

Workorder

HS23020265

Client

Aptim Environmental & Infrastucture, Inc.

Project

LHAAP46 Febuary 2023

02/28/2023

ALS Environmental–Houston Laboratory
10450 Stancliff Road, Suite 210, Houston, TX 77099
Phone (281) 530-5656 Fax (281) 530-5887
www.alsglobal.com

# Form 1 - Organic Analysis Data Sheet

**Client** Aptim Environmental & Infrastucture, Inc.

**Project** LHAAP46 Febuary 2023

Workorder
**HS23020265**

## Volatiles by EPA 8260

| HS23020265-01 | Collected | Received | Matrix | Basis |
|---|---|---|---|---|
| **LHSMW21-230206** | 02/06/23 07:35 | 02/07/23 11:00 | Water | Wet |

| Analyte | Units | Result | Q | DL | LOD | LOQ | DF | Analysis Date | Run ID | DataFile |
|---|---|---|---|---|---|---|---|---|---|---|
| cis-1,2-Dichloroethene | ug/L | 200 | | 1.0 | 5.0 | 5.0 | 5 | 02/14/23 14:36 | VOA6_428010 | X021413 |
| Trichloroethene | ug/L | 61 | | 0.20 | 1.0 | 1.0 | 1 | 02/11/23 15:03 | VOA6_427850 | X021110 |
| Vinyl chloride | ug/L | 8.0 | | 0.20 | 1.0 | 1.0 | 1 | 02/11/23 15:03 | VOA6_427850 | X021110 |

# Form 1 - Organic Analysis Data Sheet

**Client** Aptim Environmental & Infrastucture, Inc.

**Project** LHAAP46 Febuary 2023

Workorder
**HS23020265**

## Volatiles by EPA 8260

| HS23020265-02 | | | | Collected | Received | Matrix | Basis |
|---|---|---|---|---|---|---|---|
| **46WW16-230206** | | | | 02/06/23 08:20 | 02/07/23 11:00 | Water | Wet |

| Analyte | Units | Result | Q | DL | LOD | LOQ | DF | Analysis Date | Run ID | DataFile |
|---|---|---|---|---|---|---|---|---|---|---|
| cis-1,2-Dichloroethene | ug/L | 1.0 | U | 0.20 | 1.0 | 1.0 | 1 | 02/11/23 16:49 | VOA6_427850 | X021115 |
| Trichloroethene | ug/L | 1.0 | U | 0.20 | 1.0 | 1.0 | 1 | 02/11/23 16:49 | VOA6_427850 | X021115 |
| Vinyl chloride | ug/L | 1.0 | U | 0.20 | 1.0 | 1.0 | 1 | 02/11/23 16:49 | VOA6_427850 | X021115 |

# Form 1 - Organic Analysis Data Sheet

**Client** Aptim Environmental & Infrastucture, Inc.

**Project** LHAAP46 Febuary 2023

Workorder
**HS23020265**

## Volatiles by EPA 8260

| HS23020265-03 | | Collected | Received | Matrix | Basis |
|---|---|---|---|---|---|
| **46WW03-230206** | | 02/06/23 09:15 | 02/07/23 11:00 | Water | Wet |

| Analyte | Units | Result | Q | DL | LOD | LOQ | DF | Analysis Date | Run ID | DataFile |
|---|---|---|---|---|---|---|---|---|---|---|
| cis-1,2-Dichloroethene | ug/L | 1.0 | U | 0.20 | 1.0 | 1.0 | 1 | 02/11/23 17:10 | VOA6_427850 | X021116 |
| Trichloroethene | ug/L | 1.0 | U | 0.20 | 1.0 | 1.0 | 1 | 02/11/23 17:10 | VOA6_427850 | X021116 |
| Vinyl chloride | ug/L | 1.0 | U | 0.20 | 1.0 | 1.0 | 1 | 02/11/23 17:10 | VOA6_427850 | X021116 |

# Form 1 - Organic Analysis Data Sheet

**Client** Aptim Environmental & Infrastucture, Inc.

**Project** LHAAP46 Febuary 2023

Workorder
**HS23020265**

## Volatiles by EPA 8260

| HS23020265-04 | | Collected | Received | Matrix | Basis |
|---|---|---|---|---|---|
| **46WW02-230206** | | 02/06/23 10:00 | 02/07/23 11:00 | Water | Wet |

| Analyte | Units | Result | Q | DL | LOD | LOQ | DF | Analysis Date | Run ID | DataFile |
|---|---|---|---|---|---|---|---|---|---|---|
| cis-1,2-Dichloroethene | ug/L | 1.8 | | 0.20 | 1.0 | 1.0 | 1 | 02/11/23 14:42 | VOA6_427850 | X021109 |
| Trichloroethene | ug/L | 29 | | 0.20 | 1.0 | 1.0 | 1 | 02/11/23 14:42 | VOA6_427850 | X021109 |
| Vinyl chloride | ug/L | 0.43 | J | 0.20 | 1.0 | 1.0 | 1 | 02/11/23 14:42 | VOA6_427850 | X021109 |

# Form 1 - Organic Analysis Data Sheet

**Client** Aptim Environmental & Infrastucture, Inc.

**Project** LHAAP46 Febuary 2023

Workorder
**HS23020265**

## Volatiles by EPA 8260

| HS23020265-05 | | | | Collected | Received | Matrix | Basis |
|---|---|---|---|---|---|---|---|
| **46WW07-230206** | | | | 02/06/23 11:10 | 02/07/23 11:00 | Water | Wet |

| Analyte | Units | Result | Q | DL | LOD | LOQ | DF | Analysis Date | Run ID | DataFile |
|---|---|---|---|---|---|---|---|---|---|---|
| cis-1,2-Dichloroethene | ug/L | 1.0 | U | 0.20 | 1.0 | 1.0 | 1 | 02/11/23 17:31 | VOA6_427850 | X021117 |
| Trichloroethene | ug/L | 1.0 | U | 0.20 | 1.0 | 1.0 | 1 | 02/11/23 17:31 | VOA6_427850 | X021117 |
| Vinyl chloride | ug/L | 1.0 | U | 0.20 | 1.0 | 1.0 | 1 | 02/11/23 17:31 | VOA6_427850 | X021117 |

# Form 1 - Organic Analysis Data Sheet

**Client** Aptim Environmental & Infrastucture, Inc.

**Project** LHAAP46 Febuary 2023

Workorder
**HS23020265**

## Volatiles by EPA 8260

| HS23020265-06 | | | | Collected | Received | Matrix | Basis |
|---|---|---|---|---|---|---|---|
| **46WW14-230206** | | | | 02/06/23 11:55 | 02/07/23 11:00 | Water | Wet |

| Analyte | Units | Result | Q | DL | LOD | LOQ | DF | Analysis Date | Run ID | DataFile |
|---|---|---|---|---|---|---|---|---|---|---|
| cis-1,2-Dichloroethene | ug/L | 1.0 | U | 0.20 | 1.0 | 1.0 | 1 | 02/11/23 17:52 | VOA6_427850 | X021118 |
| Trichloroethene | ug/L | 1.0 | U | 0.20 | 1.0 | 1.0 | 1 | 02/11/23 17:52 | VOA6_427850 | X021118 |
| Vinyl chloride | ug/L | 1.0 | U | 0.20 | 1.0 | 1.0 | 1 | 02/11/23 17:52 | VOA6_427850 | X021118 |

# Form 1 - Organic Analysis Data Sheet

**Client** Aptim Environmental & Infrastucture, Inc.

**Project** LHAAP46 Febuary 2023

Workorder
**HS23020265**

## Volatiles by EPA 8260

| HS23020265-07 | Collected | Received | Matrix | Basis |
|---|---|---|---|---|
| **Trip Blank-230206** | 02/06/23 00:00 | 02/07/23 11:00 | Water | Wet |

| Analyte | Units | Result | Q | DL | LOD | LOQ | DF | Analysis Date | Run ID | DataFile |
|---|---|---|---|---|---|---|---|---|---|---|
| cis-1,2-Dichloroethene | ug/L | 1.0 | U | 0.20 | 1.0 | 1.0 | 1 | 02/11/23 14:21 | VOA6_427850 | X021108 |
| Trichloroethene | ug/L | 1.0 | U | 0.20 | 1.0 | 1.0 | 1 | 02/11/23 14:21 | VOA6_427850 | X021108 |
| Vinyl chloride | ug/L | 1.0 | U | 0.20 | 1.0 | 1.0 | 1 | 02/11/23 14:21 | VOA6_427850 | X021108 |

# Form 1 - Organic Analysis Data Sheet

**Client** Aptim Environmental & Infrastucture, Inc.

**Project** LHAAP46 Febuary 2023

Workorder
**HS23020265**

## Volatiles by EPA 8260

| VBLKW-230211 | Collected | Received | Matrix | Basis |
|---|---|---|---|---|
| **VBLKW-230211** | NA | NA | Aqueous | Wet |

| Analyte | Units | Result | Q | DL | LOD | LOQ | DF | Analysis Date | Run ID | DataFile |
|---|---|---|---|---|---|---|---|---|---|---|
| cis-1,2-Dichloroethene | ug/L | 1.0 | U | 0.20 | 1.0 | 1.0 | 1 | 02/11/23 14:00 | VOA6_427850 | X021107 |
| Trichloroethene | ug/L | 1.0 | U | 0.20 | 1.0 | 1.0 | 1 | 02/11/23 14:00 | VOA6_427850 | X021107 |
| Vinyl chloride | ug/L | 1.0 | U | 0.20 | 1.0 | 1.0 | 1 | 02/11/23 14:00 | VOA6_427850 | X021107 |

# Form 1 - Organic Analysis Data Sheet

**Client** Aptim Environmental & Infrastucture, Inc.

**Project** LHAAP46 Febuary 2023

Workorder
**HS23020265**

## Volatiles by EPA 8260

| VBLKW-230214 | Collected | Received | Matrix | Basis |
|---|---|---|---|---|
| **VBLKW-230214** | NA | NA | Aqueous | Wet |

| Analyte | Units | Result | Q | DL | LOD | LOQ | DF | Analysis Date | Run ID | DataFile |
|---|---|---|---|---|---|---|---|---|---|---|
| cis-1,2-Dichloroethene | ug/L | 1.0 | U | 0.20 | 1.0 | 1.0 | 1 | 02/14/23 12:30 | VOA6_428010 | X021407 |

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right partner.

Form 2

# System Monitoring Compound Recovery

## Volatiles by  by EPA 8260

Workorder

HS23020265

Client

Aptim Environmental & Infrastucture, Inc.

Project

LHAAP46 Febuary 2023

02/28/2023

ALS Environmental–Houston Laboratory
10450 Stancliff Road, Suite 210, Houston, TX 77099
Phone (281) 530-5656 Fax (281) 530-5887
www.alsglobal.com

# Form 2 - System Monitoring Compound Recovery

**Client** Aptim Environmental & Infrastucture, Inc.

**Project** LHAAP46 Febuary 2023

Workorder
**HS23020265**

RunID
VOA6_427850

## Volatiles by EPA 8260

| CCV | Analyzed 02/11/23 | | Conc Units µg/L | | DF 1 |
|---|---|---|---|---|---|
| Surrogate | Result Conc | Spike Conc | %Recovery | %Recovery Limits | Q |
| 1,2-Dichloroethane-d4 | 50.38 | 50 | 101 | 80-120 | |
| 4-Bromofluorobenzene | 53.78 | 50 | 108 | 80-120 | |
| Dibromofluoromethane | 47.17 | 50 | 94.3 | 80-120 | |
| Toluene-d8 | 50.78 | 50 | 102 | 80-120 | |

| CCB | Analyzed 02/11/23 | | Conc Units µg/L | | DF 1 |
|---|---|---|---|---|---|
| Surrogate | Result Conc | Spike Conc | %Recovery | %Recovery Limits | Q |
| 1,2-Dichloroethane-d4 | 49.48 | 50 | 99.0 | 80-120 | |
| 4-Bromofluorobenzene | 54.48 | 50 | 109 | 80-120 | |
| Dibromofluoromethane | 46.72 | 50 | 93.4 | 80-120 | |
| Toluene-d8 | 53.06 | 50 | 106 | 80-120 | |

| VLCSW-230211 | Analyzed 02/11/23 | | Conc Units µg/L | | DF 1 |
|---|---|---|---|---|---|
| Surrogate | Result Conc | Spike Conc | %Recovery | %Recovery Limits | Q |
| 1,2-Dichloroethane-d4 | 54.8 | 50 | 110 | 81-118 | |
| 4-Bromofluorobenzene | 54.39 | 50 | 109 | 85-114 | |
| Dibromofluoromethane | 49.85 | 50 | 99.7 | 80-119 | |
| Toluene-d8 | 50.95 | 50 | 102 | 89-112 | |

| VBLKW-230211 | Analyzed 02/11/23 | | Conc Units µg/L | | DF 1 |
|---|---|---|---|---|---|
| Surrogate | Result Conc | Spike Conc | %Recovery | %Recovery Limits | Q |
| 1,2-Dichloroethane-d4 | 50.07 | 50 | 100 | 81-118 | |
| 4-Bromofluorobenzene | 53.56 | 50 | 107 | 85-114 | |
| Dibromofluoromethane | 47.35 | 50 | 94.7 | 80-119 | |
| Toluene-d8 | 53.07 | 50 | 106 | 89-112 | |

Q - Surrogate %Recovery Flag  * - %Recovery / RPD Outside Limits

# Form 2 - System Monitoring Compound Recovery

**Client** Aptim Environmental & Infrastucture, Inc.

**Project** LHAAP46 Febuary 2023

Workorder
**HS23020265**

RunID
VOA6_427850

## Volatiles by EPA 8260

| HS23020265-07 | Analyzed 02/11/23 | | Conc Units µg/L | | DF 1 |
|---|---|---|---|---|---|
| Surrogate | Result Conc | Spike Conc | %Recovery | %Recovery Limits | Q |
| 1,2-Dichloroethane-d4 | 50 | 50 | 100 | 81-118 | |
| 4-Bromofluorobenzene | 54 | 50 | 109 | 85-114 | |
| Dibromofluoromethane | 47 | 50 | 93.5 | 80-119 | |
| Toluene-d8 | 54 | 50 | 108 | 89-112 | |

| HS23020265-04 | Analyzed 02/11/23 | | Conc Units µg/L | | DF 1 |
|---|---|---|---|---|---|
| Surrogate | Result Conc | Spike Conc | %Recovery | %Recovery Limits | Q |
| 1,2-Dichloroethane-d4 | 50 | 50 | 100 | 81-118 | |
| 4-Bromofluorobenzene | 54 | 50 | 108 | 85-114 | |
| Dibromofluoromethane | 47 | 50 | 93.8 | 80-119 | |
| Toluene-d8 | 53 | 50 | 107 | 89-112 | |

| HS23020265-01 | Analyzed 02/11/23 | | Conc Units µg/L | | DF 1 |
|---|---|---|---|---|---|
| Surrogate | Result Conc | Spike Conc | %Recovery | %Recovery Limits | Q |
| 1,2-Dichloroethane-d4 | 50 | 50 | 99.6 | 81-118 | |
| 4-Bromofluorobenzene | 54 | 50 | 109 | 85-114 | |
| Dibromofluoromethane | 47 | 50 | 93.7 | 80-119 | |
| Toluene-d8 | 53 | 50 | 106 | 89-112 | |

| HS23020265-04MS | Analyzed 02/11/23 | | Conc Units µg/L | | DF 1 |
|---|---|---|---|---|---|
| Surrogate | Result Conc | Spike Conc | %Recovery | %Recovery Limits | Q |
| 1,2-Dichloroethane-d4 | 50.33 | 50 | 101 | 81-118 | |
| 4-Bromofluorobenzene | 54.23 | 50 | 108 | 85-114 | |
| Dibromofluoromethane | 46.11 | 50 | 92.2 | 80-119 | |
| Toluene-d8 | 53.66 | 50 | 107 | 89-112 | |

Q - Surrogate %Recovery Flag  * - %Recovery / RPD Outside Limits

# Form 2 - System Monitoring Compound Recovery

**Client** Aptim Environmental & Infrastucture, Inc.

**Project** LHAAP46 Febuary 2023

Workorder
**HS23020265**

RunID
VOA6_427850

## Volatiles by EPA 8260

| HS23020265-04MSD | Analyzed 02/11/23 | | Conc Units µg/L | | DF 1 |
|---|---|---|---|---|---|
| Surrogate | Result Conc | Spike Conc | %Recovery | %Recovery Limits | Q |
| 1,2-Dichloroethane-d4 | 50.69 | 50 | 101 | 81-118 | |
| 4-Bromofluorobenzene | 53.66 | 50 | 107 | 85-114 | |
| Dibromofluoromethane | 45.8 | 50 | 91.6 | 80-119 | |
| Toluene-d8 | 53.17 | 50 | 106 | 89-112 | |

| HS23020265-02 | Analyzed 02/11/23 | | Conc Units µg/L | | DF 1 |
|---|---|---|---|---|---|
| Surrogate | Result Conc | Spike Conc | %Recovery | %Recovery Limits | Q |
| 1,2-Dichloroethane-d4 | 50 | 50 | 101 | 81-118 | |
| 4-Bromofluorobenzene | 53 | 50 | 106 | 85-114 | |
| Dibromofluoromethane | 47 | 50 | 93.1 | 80-119 | |
| Toluene-d8 | 53 | 50 | 107 | 89-112 | |

| HS23020265-03 | Analyzed 02/11/23 | | Conc Units µg/L | | DF 1 |
|---|---|---|---|---|---|
| Surrogate | Result Conc | Spike Conc | %Recovery | %Recovery Limits | Q |
| 1,2-Dichloroethane-d4 | 50 | 50 | 101 | 81-118 | |
| 4-Bromofluorobenzene | 53 | 50 | 107 | 85-114 | |
| Dibromofluoromethane | 47 | 50 | 93.4 | 80-119 | |
| Toluene-d8 | 54 | 50 | 107 | 89-112 | |

| HS23020265-05 | Analyzed 02/11/23 | | Conc Units µg/L | | DF 1 |
|---|---|---|---|---|---|
| Surrogate | Result Conc | Spike Conc | %Recovery | %Recovery Limits | Q |
| 1,2-Dichloroethane-d4 | 51 | 50 | 101 | 81-118 | |
| 4-Bromofluorobenzene | 53 | 50 | 107 | 85-114 | |
| Dibromofluoromethane | 47 | 50 | 93.2 | 80-119 | |
| Toluene-d8 | 53 | 50 | 106 | 89-112 | |

Q - Surrogate %Recovery Flag  * - %Recovery / RPD Outside Limits

# Form 2 - System Monitoring Compound Recovery

**Client** Aptim Environmental & Infrastucture, Inc.

**Project** LHAAP46 Febuary 2023

Workorder
**HS23020265**

RunID
VOA6_427850

## Volatiles by EPA 8260

| HS23020265-06 | Analyzed 02/11/23 | | Conc Units µg/L | | DF 1 |
|---|---|---|---|---|---|
| Surrogate | Result Conc | Spike Conc | %Recovery | %Recovery Limits | Q |
| 1,2-Dichloroethane-d4 | 51 | 50 | 101 | 81-118 | |
| 4-Bromofluorobenzene | 53 | 50 | 107 | 85-114 | |
| Dibromofluoromethane | 47 | 50 | 93.9 | 80-119 | |
| Toluene-d8 | 54 | 50 | 108 | 89-112 | |

Q - Surrogate %Recovery Flag  * - %Recovery / RPD Outside Limits

# Form 2 - System Monitoring Compound Recovery

**Client** Aptim Environmental & Infrastucture, Inc.

**Project** LHAAP46 Febuary 2023

Workorder
**HS23020265**

RunID
VOA6_428010

## Volatiles by EPA 8260

| CCV | Analyzed 02/14/23 | | Conc Units µg/L | | DF 1 |
|---|---|---|---|---|---|
| Surrogate | Result Conc | Spike Conc | %Recovery | %Recovery Limits | Q |
| 1,2-Dichloroethane-d4 | 54.39 | 50 | 109 | 80-120 | |
| 4-Bromofluorobenzene | 54.21 | 50 | 108 | 80-120 | |
| Dibromofluoromethane | 50.32 | 50 | 101 | 80-120 | |
| Toluene-d8 | 51.53 | 50 | 103 | 80-120 | |

| CCB | Analyzed 02/14/23 | | Conc Units µg/L | | DF 1 |
|---|---|---|---|---|---|
| Surrogate | Result Conc | Spike Conc | %Recovery | %Recovery Limits | Q |
| 1,2-Dichloroethane-d4 | 49.13 | 50 | 98.3 | 80-120 | |
| 4-Bromofluorobenzene | 52.54 | 50 | 105 | 80-120 | |
| Dibromofluoromethane | 46.45 | 50 | 92.9 | 80-120 | |
| Toluene-d8 | 53.7 | 50 | 107 | 80-120 | |

| VLCSW-230214 | Analyzed 02/14/23 | | Conc Units µg/L | | DF 1 |
|---|---|---|---|---|---|
| Surrogate | Result Conc | Spike Conc | %Recovery | %Recovery Limits | Q |
| 1,2-Dichloroethane-d4 | 56.68 | 50 | 113 | 81-118 | |
| 4-Bromofluorobenzene | 54.26 | 50 | 109 | 85-114 | |
| Dibromofluoromethane | 50.25 | 50 | 100 | 80-119 | |
| Toluene-d8 | 51.35 | 50 | 103 | 89-112 | |

| VBLKW-230214 | Analyzed 02/14/23 | | Conc Units µg/L | | DF 1 |
|---|---|---|---|---|---|
| Surrogate | Result Conc | Spike Conc | %Recovery | %Recovery Limits | Q |
| 1,2-Dichloroethane-d4 | 50.66 | 50 | 101 | 81-118 | |
| 4-Bromofluorobenzene | 53.44 | 50 | 107 | 85-114 | |
| Dibromofluoromethane | 47.51 | 50 | 95.0 | 80-119 | |
| Toluene-d8 | 53.79 | 50 | 108 | 89-112 | |

Q - Surrogate %Recovery Flag  * - %Recovery / RPD Outside Limits

# Form 2 - System Monitoring Compound Recovery

**Client** Aptim Environmental & Infrastucture, Inc.

**Project** LHAAP46 Febuary 2023

Workorder
**HS23020265**

RunID
VOA6_428010

## Volatiles by EPA 8260

| HS23020265-01 | Analyzed 02/14/23 | | Conc Units µg/L | | DF 5 |
|---|---|---|---|---|---|
| Surrogate | Result Conc | Spike Conc | %Recovery | %Recovery Limits | Q |
| 1,2-Dichloroethane-d4 | 250 | 250 | 102 | 81-118 | |
| 4-Bromofluorobenzene | 270 | 250 | 108 | 85-114 | |
| Dibromofluoromethane | 240 | 250 | 96.0 | 80-119 | |
| Toluene-d8 | 270 | 250 | 109 | 89-112 | |

| HS23020265-01MS | Analyzed 02/14/23 | | Conc Units µg/L | | DF 5 |
|---|---|---|---|---|---|
| Surrogate | Result Conc | Spike Conc | %Recovery | %Recovery Limits | Q |
| 1,2-Dichloroethane-d4 | 255 | 250 | 102 | 81-118 | |
| 4-Bromofluorobenzene | 266.4 | 250 | 107 | 85-114 | |
| Dibromofluoromethane | 234.3 | 250 | 93.7 | 80-119 | |
| Toluene-d8 | 272.6 | 250 | 109 | 89-112 | |

| HS23020265-01MSD | Analyzed 02/14/23 | | Conc Units µg/L | | DF 5 |
|---|---|---|---|---|---|
| Surrogate | Result Conc | Spike Conc | %Recovery | %Recovery Limits | Q |
| 1,2-Dichloroethane-d4 | 243.2 | 250 | 97.3 | 81-118 | |
| 4-Bromofluorobenzene | 270.3 | 250 | 108 | 85-114 | |
| Dibromofluoromethane | 230.5 | 250 | 92.2 | 80-119 | |
| Toluene-d8 | 266.9 | 250 | 107 | 89-112 | |

Q - Surrogate %Recovery Flag  * - %Recovery / RPD Outside Limits

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right partner.

Form 3A

# Matrix Spike/Spike Duplicate Recovery

## Volatiles by  by EPA 8260

Workorder

HS23020265

Client

Aptim Environmental & Infrastucture, Inc.

Project

LHAAP46 Febuary 2023

02/28/2023

ALS Environmental–Houston Laboratory
10450 Stancliff Road, Suite 210, Houston, TX 77099
Phone (281) 530-5656 Fax (281) 530-5887
www.alsglobal.com

# Form 3A - Matrix Spike/Spike Duplicate Recovery

**Client** Aptim Environmental & Infrastucture, Inc.

**Project** LHAAP46 Febuary 2023

Workorder
**HS23020265**

| 46WW02-230206 | | HS23020265-04 | | HS23020265-04MS | | | | HS23020265-04MSD | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Sample Matrix** Aqueous | | **Run Date** | 02/11/23 | 02/11/23 | | | | 02/11/23 | | | | | | |
| **Units** µg/L | | **Run Time** | 14:42 | 15:24 | | | | 15:45 | | | | | | |
| | | **Data File** | X021109.D | X021111.D | | | | X021112.D | | | | | | |
| Analyte | %R Limits | DF | Result | MS Result | Spike Added | %R | Q | MSD Result | Spike Added | %R | Q | RPD Limit | RPD | Q |
| cis-1,2-Dichloroethene | 78-123 | 1 | 1.768 | 17.38 | 20.00 | 78 | | 22.7 | 20.00 | 105 | | 20 | 26.6 | |
| Trichloroethene | 79-123 | 1 | 28.68 | 44.84 | 20.00 | 81 | | 48.93 | 20.00 | 101 | | 20 | 8.70 | |
| Vinyl chloride | 58-137 | 1 | 0.4346 | 11.53 | 20.00 | 56 | * | 14.19 | 20.00 | 69 | | 20 | 20.7 | |

# - %Recovery / RPD Flag  * - %Recovery / RPD Outside Limits  OL - Outside Limits

# Form 3A - Matrix Spike/Spike Duplicate Recovery

**Client** Aptim Environmental & Infrastucture, Inc.

**Project** LHAAP46 Febuary 2023

Workorder
**HS23020265**

| LHSMW21-230206 | | HS23020265-01 | | HS23020265-01MS | | | | HS23020265-01MSD | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Matrix | Aqueous | Run Date | 02/14/23 | 02/14/23 | | | | 02/14/23 | | | | | | |
| Units | µg/L | Run Time | 14:36 | 16:01 | | | | 16:22 | | | | | | |
| | | Data File | X021413.D | X021417.D | | | | X021418.D | | | | | | |
| Analyte | %R Limits | DF | Result | MS Result | Spike Added | %R | Q | MSD Result | Spike Added | %R | Q | RPD Limit | RPD | Q |
| cis-1,2-Dichloroethene | 78-123 | 5 | 195.5 | 282.8 | 100.0 | 87 | | 270.2 | 100.0 | 75 | * | 20 | 4.50 | |

# - %Recovery / RPD Flag  * - %Recovery / RPD Outside Limits  OL - Outside Limits

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Form 3B

# Laboratory Control Sample Recovery

## Volatiles by  by EPA 8260

Workorder

HS23020265

Client

Aptim Environmental & Infrastucture, Inc.

Project

LHAAP46 Febuary 2023

02/28/2023

ALS Environmental–Houston Laboratory
10450 Stancliff Road, Suite 210, Houston, TX 77099
Phone (281) 530-5656 Fax (281) 530-5887
www.alsglobal.com

# Form 3B - Laboratory Control Sample Recovery

**Client** Aptim Environmental & Infrastucture, Inc.

**Project** LHAAP46 Febuary 2023

Workorder
**HS23020265**

## Volatiles by EPA 8260

| VOA6_427850 | | QC ID | VLCSW-230211 | | | |
|---|---|---|---|---|---|---|
| QC Matrix Aqueous | Units | Run Date | 02/11/23 | | | |
| | %REC | Run Time | 13:18 | | | |
| Analyte | %R Limits | Spike Added | LCS Result | %R | Q | |
| 1,2-Dichloroethane-d4 | 81-118 | 50 | 54.8 | 110 | | |
| 4-Bromofluorobenzene | 85-114 | 50 | 54.39 | 109 | | |
| cis-1,2-Dichloroethene | 78-123 | 20 | 18.49 | 92 | | |
| Dibromofluoromethane | 80-119 | 50 | 49.85 | 100 | | |
| Toluene-d8 | 89-112 | 50 | 50.95 | 102 | | |
| Trichloroethene | 79-123 | 20 | 18.29 | 91 | | |
| Vinyl chloride | 58-137 | 20 | 18.95 | 95 | | |

# - %Recovery / RPD Flag  * - %Recovery / RPD Outside Limits

# Form 3B - Laboratory Control Sample Recovery

**Client** Aptim Environmental & Infrastucture, Inc.

**Project** LHAAP46 Febuary 2023

Workorder
**HS23020265**

## Volatiles by EPA 8260

| VOA6_428010 | | | QC ID | VLCSW-230214 | | | |
|---|---|---|---|---|---|---|---|
| QC Matrix Aqueous | | Units | Run Date | 02/14/23 | | | |
| | | %REC | Run Time | 11:48 | | | |
| Analyte | %R Limits | Spike Added | LCS Result | %R | Q | | |
| 1,2-Dichloroethane-d4 | 81-118 | 50 | 56.68 | 113 | | | |
| 4-Bromofluorobenzene | 85-114 | 50 | 54.26 | 109 | | | |
| cis-1,2-Dichloroethene | 78-123 | 20 | 19.38 | 97 | | | |
| Dibromofluoromethane | 80-119 | 50 | 50.25 | 100 | | | |
| Toluene-d8 | 89-112 | 50 | 51.35 | 103 | | | |

# - %Recovery / RPD Flag  * - %Recovery / RPD Outside Limits

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Form 4

# Method Blank Summary

## Volatiles by  by EPA 8260

Workorder

HS23020265

Client

Aptim Environmental & Infrastucture, Inc.

Project

LHAAP46 Febuary 2023

02/28/2023

ALS Environmental–Houston Laboratory
10450 Stancliff Road, Suite 210, Houston, TX 77099
Phone (281) 530-5656 Fax (281) 530-5887
www.alsglobal.com

# Form 4 - Method Blank Summary

**Client** Aptim Environmental & Infrastucture, Inc.

**Project** LHAAP46 Febuary 2023

Workorder
**HS23020265**

## Volatiles by EPA 8260

| Client Sample ID | Type | Lab Sample ID | File ID | Date Analyzed | Run ID |
|---|---|---|---|---|---|
| METHOD BLANK | MBLK | VBLKW-230211 | X021107.D | 02/11/23 14:00 | VOA6_427850 |
| VLCSW-230211 | LCS | VLCSW-230211 | X021105.D | 02/11/23 13:18 | VOA6_427850 |
| Trip Blank-230206 | SAMP | HS23020265-07 | X021108.D | 02/11/23 14:21 | VOA6_427850 |
| 46WW02-230206 | SAMP | HS23020265-04 | X021109.D | 02/11/23 14:42 | VOA6_427850 |
| LHSMW21-230206 | SAMP | HS23020265-01 | X021110.D | 02/11/23 15:03 | VOA6_427850 |
| 46WW02-230206 | MS | HS23020265-04MS | X021111.D | 02/11/23 15:24 | VOA6_427850 |
| 46WW02-230206 | MSD | HS23020265-04MSD | X021112.D | 02/11/23 15:45 | VOA6_427850 |
| 46WW16-230206 | SAMP | HS23020265-02 | X021115.D | 02/11/23 16:49 | VOA6_427850 |
| 46WW03-230206 | SAMP | HS23020265-03 | X021116.D | 02/11/23 17:10 | VOA6_427850 |
| 46WW07-230206 | SAMP | HS23020265-05 | X021117.D | 02/11/23 17:31 | VOA6_427850 |
| 46WW14-230206 | SAMP | HS23020265-06 | X021118.D | 02/11/23 17:52 | VOA6_427850 |

# Form 4 - Method Blank Summary

**Client** Aptim Environmental & Infrastucture, Inc.

**Project** LHAAP46 Febuary 2023

Workorder
**HS23020265**

## Volatiles by EPA 8260

| Client Sample ID | Type | Lab Sample ID | File ID | Date Analyzed | Run ID |
|---|---|---|---|---|---|
| METHOD BLANK | MBLK | VBLKW-230214 | X021407.D | 02/14/23 12:30 | VOA6_428010 |
| VLCSW-230214 | LCS | VLCSW-230214 | X021405.D | 02/14/23 11:48 | VOA6_428010 |
| LHSMW21-230206 | SAMP | HS23020265-01 | X021413.D | 02/14/23 14:36 | VOA6_428010 |
| LHSMW21-230206 | MS | HS23020265-01MS | X021417.D | 02/14/23 16:01 | VOA6_428010 |
| LHSMW21-230206 | MSD | HS23020265-01MSD | X021418.D | 02/14/23 16:22 | VOA6_428010 |

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Form 5

# Instrument Performance Check

## Volatiles by  by EPA 8260

Workorder

HS23020265

Client

Aptim Environmental & Infrastucture, Inc.

Project

LHAAP46 Febuary 2023

02/28/2023

ALS Environmental–Houston Laboratory
10450 Stancliff Road, Suite 210, Houston, TX 77099
Phone (281) 530-5656 Fax (281) 530-5887
www.alsglobal.com

# Form 5 - Instrument Performance Check

**Client** Aptim Environmental & Infrastucture, Inc.

**Project** LHAAP46 Febuary 2023

Workorder
**HS23020265**

RunID
VOA6_424237

Tune File X121601.D 12/16/22 11:17

| m / e | Ion Abundance Criterion | %RA |
|---|---|---|
| 50 | 15.0 - 40.0% of mass 95 | 18.3 (18.4) |
| 75 | 30.0 - 60.0% of mass 95 | 46.1 (46.1) |
| 95 | Base peak, 100% RA | 100 (100) |
| 96 | 5.0 - 9.0% of mass 95 | 7.2 (7.16) |
| 173 | Less than 2.0% of mass 174 | 0.8 (0.897) 1 |
| 174 | 50.0 - 120.0% of mass 95 | 89 (89) |
| 175 | 4.0 - 9.0% of mass 174 | 7 (7.82) 1 |
| 176 | 93.0 - 101.0% of mass 174 | 87.4 (98.2) 1 |
| 177 | 5.0 - 9.0% of mass 176 | 5.8 (6.59) 2 |

Value is % of mass 1) 174 2) 176 RA - Relative Abundance

This check applies to the following analyses

| | Type | Date Analyzed | Lab File ID | Sample ID |
|---|---|---|---|---|
| 1 | ICAL1 | 12/16/22 11:38 | X121602 | VSTD000.25 |
| 2 | ICAL2 | 12/16/22 12:20 | X121603 | VSTD000.5 |
| 3 | ICAL3 | 12/16/22 12:41 | X121604 | VSTD001 |
| 4 | ICAL4 | 12/16/22 13:02 | X121605 | VSTD002 |
| 5 | ICAL5 | 12/16/22 13:23 | X121606 | VSTD005 |
| 6 | ICAL6 | 12/16/22 13:43 | X121607 | VSTD020 |
| 7 | ICAL7 | 12/16/22 14:04 | X121608 | VSTD050 |
| 8 | ICAL8 | 12/16/22 14:25 | X121609 | VSTD100 |
| 9 | ICAL9 | 12/16/22 14:46 | X121610 | VSTD150 |
| 10 | ICAL | 12/16/22 15:07 | X121611 | VSTD200 |
| 11 | ICV | 12/16/22 15:49 | X121613 | CCV |

# Form 5 - Instrument Performance Check

**Client** Aptim Environmental & Infrastucture, Inc.

**Project** LHAAP46 Febuary 2023

Workorder
**HS23020265**

RunID
VOA6_427850

**Tune File** X021101.D 02/11/23 11:54

| m / e | Ion Abundance Criterion | %RA |
|---|---|---|
| 50 | 15.0 - 40.0% of mass 95 | 15.4 (15.4) |
| 75 | 30.0 - 60.0% of mass 95 | 46.2 (46.2) |
| 95 | Base peak, 100% RA | 100 (100) |
| 96 | 5.0 - 9.0% of mass 95 | 6.7 (6.65) |
| 173 | Less than 2.0% of mass 174 | 0.6 (0.733) 1 |
| 174 | 50.0 - 120.0% of mass 95 | 78.2 (78.2) |
| 175 | 4.0 - 9.0% of mass 174 | 6 (7.73) 1 |
| 176 | 93.0 - 101.0% of mass 174 | 76.7 (98.2) 1 |
| 177 | 5.0 - 9.0% of mass 176 | 5.6 (7.3) 2 |

Value is % of mass 1) 174 2) 176 RA - Relative Abundance

This check applies to the following analyses

| | Type | Date Analyzed | Lab File ID | Sample ID |
|---|---|---|---|---|
| 1 | CCV | 02/11/23 12:36 | X021103 | CCV |
| 2 | CCB | 02/11/23 12:57 | X021104 | CCB |
| 3 | LCS | 02/11/23 13:18 | X021105 | VLCSW-230211 |
| 4 | MBLK | 02/11/23 14:00 | X021107 | VBLKW-230211 |
| 5 | SAMP | 02/11/23 14:21 | X021108 | Trip Blank-230206 |
| 6 | SAMP | 02/11/23 14:42 | X021109 | 46WW02-230206 |
| 7 | SAMP | 02/11/23 15:03 | X021110 | LHSMW21-230206 |
| 8 | MS | 02/11/23 15:24 | X021111 | HS23020265-04MS |
| 9 | MSD | 02/11/23 15:45 | X021112 | HS23020265-04MSD |
| 10 | SAMP | 02/11/23 16:49 | X021115 | 46WW16-230206 |
| 11 | SAMP | 02/11/23 17:10 | X021116 | 46WW03-230206 |
| 12 | SAMP | 02/11/23 17:31 | X021117 | 46WW07-230206 |
| 13 | SAMP | 02/11/23 17:52 | X021118 | 46WW14-230206 |
| 14 | CCV_EN | 02/11/23 22:25 | X021131 | CCV-END |

# Form 5 - Instrument Performance Check

**Client** Aptim Environmental & Infrastucture, Inc.

**Project** LHAAP46 Febuary 2023

Workorder
**HS23020265**

RunID
VOA6_428010

Tune File X021401.D 02/14/23 10:24

| m / e | Ion Abundance Criterion | %RA |
|---|---|---|
| 50 | 15.0 - 40.0% of mass 95 | 17.3 (17.3) |
| 75 | 30.0 - 60.0% of mass 95 | 46.7 (46.7) |
| 95 | Base peak, 100% RA | 100 (100) |
| 96 | 5.0 - 9.0% of mass 95 | 6.4 (6.39) |
| 173 | Less than 2.0% of mass 174 | 0.5 (0.647) 1 |
| 174 | 50.0 - 120.0% of mass 95 | 78 (78) |
| 175 | 4.0 - 9.0% of mass 174 | 6 (7.64) 1 |
| 176 | 93.0 - 101.0% of mass 174 | 74.3 (95.3) 1 |
| 177 | 5.0 - 9.0% of mass 176 | 5.5 (7.43) 2 |

Value is % of mass 1) 174 2) 176 RA - Relative Abundance

This check applies to the following analyses

| | Type | Date Analyzed | Lab File ID | Sample ID |
|---|---|---|---|---|
| 1 | CCV | 02/14/23 11:06 | X021403 | CCV |
| 2 | CCB | 02/14/23 11:27 | X021404 | CCB |
| 3 | LCS | 02/14/23 11:48 | X021405 | VLCSW-230214 |
| 4 | MBLK | 02/14/23 12:30 | X021407 | VBLKW-230214 |
| 5 | SAMP | 02/14/23 14:36 | X021413 | LHSMW21-230206 |
| 6 | MS | 02/14/23 16:01 | X021417 | HS23020265-01MS |
| 7 | MSD | 02/14/23 16:22 | X021418 | HS23020265-01MSD |
| 8 | CCV_EN | 02/14/23 21:16 | X021432 | CCV-END |

01255243

right solutions.
right partner.

Form 6

# Initial Calibration Data

## Volatiles by  by EPA 8260

Workorder

HS23020265

Client

Aptim Environmental & Infrastucture, Inc.

Project

LHAAP46 Febuary 2023

02/28/2023

ALS Environmental–Houston Laboratory
10450 Stancliff Road, Suite 210, Houston, TX 77099
Phone (281) 530-5656 Fax (281) 530-5887
www.alsglobal.com

# Initial Calibration Data

**Client** Aptim Environmental & Infrastucture, Inc.
**Project** LHAAP46 Febuary 2023

**Workorder** HS23020265

**RunID** VOA6_424237

## Volatiles by by EPA 8260

**ICAL Start Date** 16-DEC-2022 1138
**ICAL End Date** 16-DEC-2022 1507

**Calibration Files**

**Level 1** ..voa6.i\X221216.b\X121602.D
**Level 2** ..voa6.i\X221216.b\X121603.D
**Level 3** ..voa6.i\X221216.b\X121604.D
**Level 4** ..voa6.i\X221216.b\X121605.D
**Level 5** ..voa6.i\X221216.b\X121606.D
**Level 6** ..voa6.i\X221216.b\X121607.D
**Level 7** ..voa6.i\X221216.b\X121608.D
**Level 8** ..voa6.i\X221216.b\X121609.D
**Level 9** ..voa6.i\X221216.b\X121610.D
**Level 10** ..voa6.i\X221216.b\X121611.D

| Compound | Level 1<br>0.250<br>Level 7<br>50.0 | Level 2<br>0.500<br>Level 8<br>100.0 | Level 3<br>1.00<br>Level 9<br>150.0 | Level 4<br>2.00<br>Level 10<br>200.0 | Level 5<br>5.00 | Level 6<br>20.00 | Curve | b | m1 | m2 | %RSD<br>or $R^2$ | Q |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Dichlorodifluoromethane | NE<br>160392 | 1990<br>309019 | 2911<br>476130 | 6239<br>635808 | 15008 | 63382 | LINR | 0.00786 | 0.35247 | | 0.99971 | |
| Chloromethane | NE<br>192710 | 2466<br>388163 | 3670<br>621048 | 8057<br>865151 | 19623 | 72324 | LINR | 0.04423 | 0.47332 | | 0.99747 | |
| Propionitrile | NE<br>0.04851 | 0.06018<br>0.04917 | 0.05265<br>0.05178 | 0.04739<br>0.05178 | 0.05114 | 0.04656 | AVRG | | 0.05102 | | 7.91502 | |
| Vinyl Chloride | NE<br>0.44103 | 0.52268<br>0.42953 | 0.40472<br>0.44923 | 0.39786<br>0.45909 | 0.42164 | 0.40520 | AVRG | | 0.43678 | | 8.81916 | |
| Bromomethane | NE<br>139689 | 1893<br>284165 | 3293<br>470318 | 5996<br>NE | 15112 | 52034 | LINR | 0.03529 | 0.34244 | | 0.99519 | |
| Chloroethane | NE<br>0.29447 | 0.35820<br>0.28714 | 0.27936<br>0.30494 | 0.31044<br>0.30410 | 0.31436 | 0.28309 | AVRG | | 0.30401 | | 7.80750 | |
| Trichlorofluoromethane | NE<br>0.60756 | 0.71207<br>0.59817 | 0.54474<br>0.64605 | 0.57316<br>0.65074 | 0.59068 | 0.57785 | AVRG | | 0.61122 | | 8.28859 | |
| Acrolein | NE<br>27445 | 440<br>60756 | 761<br>96139 | 1317<br>125874 | 2699 | 12279 | LINR | 0.05644 | 0.03519 | | 0.99833 | |
| Acetone | NE<br>124798 | 2669<br>243517 | 4787<br>373504 | 7041<br>514105 | 17632 | 50987 | LINR | -0.00069 | 0.14025 | | 0.99910 | |
| 1,1-Dichloroethene | NE<br>0.36912 | 0.44142<br>0.36226 | 0.35953<br>0.38517 | 0.37590<br>0.39076 | 0.37389 | 0.35725 | AVRG | | 0.37948 | | 6.80558 | |

NE - Not Evaluated, AVRG - Averaged, LINR - Linear Regression, WLIN - Weighted Linear, QUAD - Quadratic, * - Curve Fit Outside Limits

# Initial Calibration Data

**Client** Aptim Environmental & Infrastucture, Inc.

**Project** LHAAP46 Febuary 2023

**Workorder** HS23020265

**RunID** VOA6_424237

## Volatiles by by EPA 8260

**ICAL Start Date** 16-DEC-2022 1138 **ICAL End Date** 16-DEC-2022 1507



| Compound | Level 1 0.250 Level 7 50.0 | Level 2 0.500 Level 8 100.0 | Level 3 1.00 Level 9 150.0 | Level 4 2.00 Level 10 200.0 | Level 5 5.00 | Level 6 20.00 | Curve | b | m1 | m2 | %RSD or $R^2$ | Q |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Isobutyl Alcohol | NE<br>0.05462 | 0.05610<br>0.05559 | 0.05239<br>0.05946 | 0.05650<br>0.05952 | 0.05728 | 0.05469 | AVRG | | 0.05624 | | 4.10209 | |
| Acetonitrile | NE<br>0.04430 | 0.04776<br>0.04552 | 0.04645<br>0.04791 | 0.04253<br>0.04736 | 0.04357 | 0.04417 | AVRG | | 0.04551 | | 4.32823 | |
| Allyl Chloride | NE<br>0.81324 | 0.99118<br>0.83169 | 0.95202<br>0.86799 | 0.81682<br>0.86396 | 0.84304 | 0.82034 | AVRG | | 0.86670 | | 7.30464 | |
| Iodomethane | NE<br>455792 | 2397<br>958603 | 3865<br>1554547 | 8702<br>2193685 | 26708 | 143457 | QUAD | 0.06641 | 2.01333 | -0.08031 | 0.99956 | |
| Acrylonitrile | NE<br>0.12970 | 0.12113<br>0.12956 | 0.12536<br>0.13857 | 0.12482<br>0.13997 | 0.12256 | 0.12666 | AVRG | | 0.12870 | | 5.15060 | |
| Methylene Chloride | NE<br>0.49311 | 0.63666<br>0.46611 | 0.59459<br>0.48892 | 0.50364<br>0.47907 | 0.50885 | 0.51372 | AVRG | | 0.52052 | | 10.92514 | |
| Methyl tert-butyl ether | NE<br>1.16844 | 1.26574<br>1.18584 | 1.39027<br>1.23813 | 1.27259<br>1.24075 | 1.24993 | 1.16729 | AVRG | | 1.24211 | | 5.52745 | |
| Carbon Disulfide | NE<br>0.97542 | 1.07494<br>0.97088 | 1.00609<br>1.02392 | 0.95722<br>1.06178 | 0.94769 | 0.91773 | AVRG | | 0.99285 | | 5.32584 | |
| trans-1,2-Dichloroethene | NE<br>0.41851 | 0.48064<br>0.41454 | 0.42427<br>0.43221 | 0.38965<br>0.43554 | 0.42173 | 0.40526 | AVRG | | 0.42470 | | 5.92187 | |
| Vinyl Acetate | NE<br>1.07506 | 1.09845<br>1.07519 | 0.99054<br>1.16529 | 1.06368<br>1.16741 | 1.12321 | 1.05445 | AVRG | | 1.09037 | | 5.13969 | |
| 1,1-Dichloroethane | NE<br>0.72125 | 0.83949<br>0.70504 | 0.80145<br>0.74074 | 0.69997<br>0.74459 | 0.75023 | 0.70550 | AVRG | | 0.74536 | | 6.34771 | |
| Chloroprene | NE<br>0.16145 | 0.19503<br>0.16116 | 0.18721<br>0.16823 | 0.17124<br>0.17481 | 0.15874 | 0.15219 | AVRG | | 0.17001 | | 8.17551 | |

NE - Not Evaluated, AVRG - Averaged, LINR - Linear Regression, WLIN - Weighted Linear, QUAD - Quadratic, * - Curve Fit Outside Limits

# Initial Calibration Data

**Client** Aptim Environmental & Infrastucture, Inc.

**Project** LHAAP46 Febuary 2023

**Workorder** HS23020265

**RunID** VOA6_424237

## Volatiles by by EPA 8260

**ICAL Start Date** 16-DEC-2022 1138 **ICAL End Date** 16-DEC-2022 1507



| Compound | Level 1 0.250 Level 7 50.0 | Level 2 0.500 Level 8 100.0 | Level 3 1.00 Level 9 150.0 | Level 4 2.00 Level 10 200.0 | Level 5 5.00 | Level 6 20.00 | Curve | b | m1 | m2 | %RSD or $R^2$ | Q |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2-Butanone | NE<br>130179 | 1292<br>264221 | 2498<br>407629 | 5418<br>555896 | 11771 | 47830 | LINR | 0.06050 | 0.15346 | | 0.99924 | |
| Methacrylonitrile | NE<br>0.32328 | 0.44770<br>0.32565 | 0.36475<br>0.34081 | 0.34993<br>0.34351 | 0.34840 | 0.34235 | AVRG | | 0.35404 | | 10.52608 | |
| 2,2-Dichloropropane | NE<br>0.62063 | 0.70167<br>0.61027 | 0.65466<br>0.64008 | 0.60521<br>0.65162 | 0.61866 | 0.59289 | AVRG | | 0.63286 | | 5.25207 | |
| cis-1,2-Dichloroethene | NE<br>0.49985 | 0.61803<br>0.48778 | 0.49622<br>0.51710 | 0.52999<br>0.51455 | 0.50446 | 0.48374 | AVRG | | 0.51686 | | 7.86616 | |
| Chloroform | NE<br>0.81023 | 0.87547<br>0.78725 | 0.86252<br>0.84612 | 0.85352<br>0.84457 | 0.84666 | 0.79238 | AVRG | | 0.83541 | | 3.73708 | |
| Bromochloromethane | NE<br>0.26364 | 0.32093<br>0.26287 | 0.29857<br>0.28290 | 0.28124<br>0.28282 | 0.29319 | 0.26077 | AVRG | | 0.28299 | | 6.91423 | |
| 1,1,1-Trichloroethane | NE<br>0.65703 | 0.76105<br>0.64156 | 0.65666<br>0.67604 | 0.60049<br>0.69720 | 0.64387 | 0.63152 | AVRG | | 0.66283 | | 6.90392 | |
| 1,1-Dichloropropene | NE<br>0.37084 | 0.35889<br>0.35979 | 0.34245<br>0.36734 | 0.33027<br>0.37324 | 0.34789 | 0.34406 | AVRG | | 0.35497 | | 4.12237 | |
| 1,2-Dichloroethane | NE<br>0.39909 | 0.45501<br>0.40154 | 0.40587<br>0.41082 | 0.39492<br>0.41030 | 0.41104 | 0.39842 | AVRG | | 0.40967 | | 4.39762 | |
| Carbon Tetrachloride | NE<br>0.36348 | 0.40179<br>0.35355 | 0.45347<br>0.36349 | 0.40515<br>0.37429 | 0.35265 | 0.34370 | AVRG | | 0.37906 | | 9.25223 | |
| Benzene | NE<br>1.17241 | 1.34410<br>1.15323 | 1.19304<br>1.17461 | 1.18322<br>1.18197 | 1.19608 | 1.14722 | AVRG | | 1.19399 | | 4.90945 | |
| Trichloroethene | NE<br>0.33750 | 0.37562<br>0.33140 | 0.31723<br>0.33891 | 0.33885<br>0.34649 | 0.33109 | 0.33079 | AVRG | | 0.33865 | | 4.73809 | |

NE - Not Evaluated, AVRG - Averaged, LINR - Linear Regression, WLIN - Weighted Linear, QUAD - Quadratic, * - Curve Fit Outside Limits

# Initial Calibration Data

**Client** Aptim Environmental & Infrastucture, Inc.

**Project** LHAAP46 Febuary 2023

**Workorder** HS23020265

**RunID** VOA6_424237

## Volatiles by by EPA 8260

**ICAL Start Date** 16-DEC-2022 1138 **ICAL End Date** 16-DEC-2022 1507



| Compound | Level 1 0.250 Level 7 50.0 | Level 2 0.500 Level 8 100.0 | Level 3 1.00 Level 9 150.0 | Level 4 2.00 Level 10 200.0 | Level 5 5.00 | Level 6 20.00 | Curve | b | m1 | m2 | %RSD or $R^2$ | Q |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | NE 0.42913 | 0.53078 0.42602 | 0.45893 0.44706 | 0.43689 0.45009 | 0.42833 | 0.42563 | AVRG | | 0.44810 | | 7.41292 | |
| Methyl Methacrylate | NE 0.32238 | 0.38746 0.32465 | 0.34921 0.34726 | 0.33881 0.35704 | 0.33548 | 0.30606 | AVRG | | 0.34093 | | 6.87301 | |
| 2-Chloroethylvinyl ether | NE 0.13057 | 0.13531 0.12541 | 0.11670 0.12799 | 0.12141 0.12973 | 0.12912 | 0.13108 | AVRG | | 0.12748 | | 4.37734 | |
| 1,2-Dichloropropane | NE 0.31044 | 0.35613 0.30521 | 0.33560 0.31542 | 0.29692 0.31856 | 0.31629 | 0.30391 | AVRG | | 0.31761 | | 5.71516 | |
| 2-Nitropropane | NE 0.73644 | 1.05598 0.73807 | 0.76159 0.78445 | 0.80915 0.80253 | 0.77468 | 0.75211 | AVRG | | 0.80167 | | 12.32619 | |
| Dibromomethane | NE 0.20672 | 0.25085 0.20317 | 0.21183 0.21324 | 0.22317 0.21357 | 0.21081 | 0.20954 | AVRG | | 0.21588 | | 6.58330 | |
| 4-Methyl-2-Pentanone | NE 0.25814 | 0.28987 0.25156 | 0.26418 0.26114 | 0.28502 0.26166 | 0.26684 | 0.26684 | AVRG | | 0.26725 | | 4.64865 | |
| cis-1,3-Dichloropropene | NE 0.52860 | 0.53732 0.53368 | 0.47650 0.55605 | 0.50179 0.56353 | 0.51804 | 0.52075 | AVRG | | 0.52625 | | 5.04185 | |
| Ethyl Methacrylate | NE 0.20804 | 0.28138 0.22619 | 0.24077 0.24786 | 0.23910 0.26163 | 0.20135 | 0.21276 | AVRG | | 0.23545 | | 11.14205 | |
| Toluene | NE 1.36202 | 1.60765 1.32088 | 1.37997 1.35198 | 1.37463 1.35870 | 1.36957 | 1.31273 | AVRG | | 1.38201 | | 6.34459 | |
| trans-1,3-Dichloropropene | NE 0.44682 | 0.44236 0.44877 | 0.39493 0.47075 | 0.40065 0.48573 | 0.41433 | 0.42619 | AVRG | | 0.43673 | | 7.01005 | |
| 2-Hexanone | NE 0.17839 | 0.19991 0.17192 | 0.17409 0.18312 | 0.17972 0.18566 | 0.18386 | 0.17978 | AVRG | | 0.18183 | | 4.45920 | |

NE - Not Evaluated, AVRG - Averaged, LINR - Linear Regression, WLIN - Weighted Linear, QUAD - Quadratic, * - Curve Fit Outside Limits

# Initial Calibration Data

**Client** Aptim Environmental & Infrastucture, Inc.

**Project** LHAAP46 Febuary 2023

**Workorder** HS23020265

**RunID** VOA6_424237

## Volatiles by by EPA 8260

**ICAL Start Date** 16-DEC-2022 1138 **ICAL End Date** 16-DEC-2022 1507



| Compound | Level 1 0.250 Level 7 50.0 | Level 2 0.500 Level 8 100.0 | Level 3 1.00 Level 9 150.0 | Level 4 2.00 Level 10 200.0 | Level 5 5.00 | Level 6 20.00 | Curve | b | m1 | m2 | %RSD or $R^2$ | Q |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1,2-Trichloroethane | NE<br>0.26479 | 0.32419<br>0.25654 | 0.26954<br>0.26825 | 0.29087<br>0.26649 | 0.28491 | 0.26973 | AVRG | | 0.27726 | | 7.37510 | |
| 1,3-Dichloropropane | NE<br>0.53007 | 0.62065<br>0.51166 | 0.55587<br>0.53587 | 0.54217<br>0.53590 | 0.54663 | 0.53274 | AVRG | | 0.54573 | | 5.60982 | |
| Dibromochloromethane | NE<br>0.39906 | 0.43810<br>0.39075 | 0.38701<br>0.40792 | 0.39402<br>0.40793 | 0.38762 | 0.38903 | AVRG | | 0.40016 | | 4.08851 | |
| Tetrachloroethene | NE<br>0.29836 | 0.33024<br>0.28012 | 0.25660<br>0.28506 | 0.28292<br>0.28889 | 0.26322 | 0.28810 | AVRG | | 0.28594 | | 7.36821 | |
| 1,2-Dibromoethane | NE<br>0.35151 | 0.36263<br>0.33998 | 0.33509<br>0.35512 | 0.32714<br>0.35096 | 0.35422 | 0.34322 | AVRG | | 0.34665 | | 3.22017 | |
| 1-Chlorohexane | NE<br>0.24556 | 0.26597<br>0.23682 | 0.22998<br>0.25047 | 0.21386<br>0.26558 | 0.22191 | 0.24457 | AVRG | | 0.24163 | | 7.44215 | |
| Chlorobenzene | NE<br>0.95622 | 1.20054<br>0.92158 | 0.96715<br>0.96470 | 0.94773<br>0.97511 | 0.95913 | 0.93014 | AVRG | | 0.98026 | | 8.61127 | |
| 1,1,1,2-Tetrachloroethane | NE<br>0.36060 | 0.42477<br>0.35457 | 0.34549<br>0.36940 | 0.36191<br>0.37188 | 0.34596 | 0.34861 | AVRG | | 0.36480 | | 6.70616 | |
| Ethylbenzene | NE<br>0.47797 | 0.47482<br>0.45902 | 0.43893<br>0.46986 | 0.45503<br>0.47447 | 0.45171 | 0.45394 | AVRG | | 0.46175 | | 2.86128 | |
| m,p-Xylenes | NE<br>0.60205 | 0.69860<br>0.58346 | 0.55710<br>0.60071 | 0.56286<br>0.61493 | 0.56012 | 0.57743 | AVRG | | 0.59525 | | 7.35638 | |
| o-Xylene | NE<br>0.59049 | 0.68372<br>0.57562 | 0.51381<br>0.60058 | 0.56977<br>0.61516 | 0.56849 | 0.56994 | AVRG | | 0.58751 | | 7.79066 | |
| Styrene | NE<br>1.03116 | 1.02806<br>1.01266 | 0.79991<br>1.07651 | 0.88633<br>1.09594 | 0.95404 | 0.97800 | AVRG | | 0.98473 | | 9.52837 | |

NE - Not Evaluated, AVRG - Averaged, LINR - Linear Regression, WLIN - Weighted Linear, QUAD - Quadratic, * - Curve Fit Outside Limits

# Initial Calibration Data

**Client** Aptim Environmental & Infrastucture, Inc.

**Project** LHAAP46 Febuary 2023

**Workorder** HS23020265

**RunID** VOA6_424237

## Volatiles by by EPA 8260

**ICAL Start Date** 16-DEC-2022 1138 **ICAL End Date** 16-DEC-2022 1507



| Compound | Level 1 0.250 Level 7 50.0 | Level 2 0.500 Level 8 100.0 | Level 3 1.00 Level 9 150.0 | Level 4 2.00 Level 10 200.0 | Level 5 5.00 | Level 6 20.00 | Curve | b | m1 | m2 | %RSD or $R^2$ | Q |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bromoform | NE | 0.31195 | 0.25221 | 0.26817 | 0.25683 | 0.26696 | | | | | | |
| | 0.27805 | 0.27584 | 0.29222 | 0.29278 | | | AVRG | | 0.27722 | | 6.87336 | |
| Isopropylbenzene | NE | 1.35706 | 1.16805 | 1.25967 | 1.30607 | 1.32939 | | | | | | |
| | 1.41077 | 1.36357 | 1.42773 | 1.45784 | | | AVRG | | 1.34224 | | 6.69875 | |
| 1,1,2,2-Tetrachloroethane | NE | 0.91828 | 0.84470 | 0.83187 | 0.83648 | 0.79018 | | | | | | |
| | 0.74007 | 0.71754 | 0.75363 | 0.73962 | | | AVRG | | 0.79693 | | 8.24435 | |
| 1,2,3-Trichloropropane | NE | 0.58047 | 0.56626 | 0.53238 | 0.58048 | 0.54015 | | | | | | |
| | 0.53505 | 0.52761 | 0.60583 | 0.53897 | | | AVRG | | 0.55636 | | 4.97536 | |
| trans-1,4-Dichloro-2-butene | NE | 0.12274 | 0.09213 | 0.10381 | 0.10162 | 0.10094 | | | | | | |
| | 0.10800 | 0.10845 | 0.11623 | 0.11751 | | | AVRG | | 0.10794 | | 8.88299 | |
| n-Propylbenzene | NE | 3.20938 | 2.13608 | 2.47845 | 2.73904 | 2.83806 | | | | | | |
| | 2.90611 | 2.78733 | 2.90643 | 2.92515 | | | AVRG | | 2.76956 | | 11.03336 | |
| Bromobenzene | NE | 0.90477 | 0.79060 | 0.83045 | 0.81066 | 0.82521 | | | | | | |
| | 0.80056 | 0.78064 | 0.82147 | 0.81857 | | | AVRG | | 0.82033 | | 4.35370 | |
| 1,3,5-Trimethylbenzene | NE | 2.06484 | 1.68256 | 1.97796 | 2.03460 | 2.07048 | | | | | | |
| | 2.12398 | 2.07652 | 2.18148 | 2.20122 | | | AVRG | | 2.04596 | | 7.47801 | |
| 2-Chlorotoluene | NE | 1.93144 | 1.77508 | 1.90257 | 1.85141 | 1.80074 | | | | | | |
| | 1.79455 | 1.71779 | 1.79669 | 1.78644 | | | AVRG | | 1.81741 | | 3.65582 | |
| 4-Chlorotoluene | NE | 2.19766 | 1.72811 | 1.99610 | 2.10678 | 2.06499 | | | | | | |
| | 2.09570 | 2.05624 | 2.19099 | 2.20989 | | | AVRG | | 2.07183 | | 7.13984 | |
| tert-Butylbenzene | NE | 1.83685 | 1.33195 | 1.56610 | 1.66625 | 1.69957 | | | | | | |
| | 1.74647 | 1.66742 | 1.77236 | 1.78580 | | | AVRG | | 1.67475 | | 9.03914 | |
| 1,2,4-Trimethylbenzene | NE | 2.44261 | 1.84882 | 2.01055 | 2.12502 | 2.14371 | | | | | | |
| | 2.18278 | 2.12445 | 2.25368 | 2.24326 | | | AVRG | | 2.15277 | | 7.66012 | |

NE - Not Evaluated, AVRG - Averaged, LINR - Linear Regression, WLIN - Weighted Linear, QUAD - Quadratic, * - Curve Fit Outside Limits

# Initial Calibration Data

**Client** Aptim Environmental & Infrastucture, Inc.

**Project** LHAAP46 Febuary 2023

**Workorder** HS23020265

**RunID** VOA6_424237

## Volatiles by by EPA 8260

**ICAL Start Date** 16-DEC-2022 1138 **ICAL End Date** 16-DEC-2022 1507



| Compound | Level 1 0.250 Level 7 50.0 | Level 2 0.500 Level 8 100.0 | Level 3 1.00 Level 9 150.0 | Level 4 2.00 Level 10 200.0 | Level 5 5.00 | Level 6 20.00 | Curve | b | m1 | m2 | %RSD or $R^2$ | Q |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sec-Butylbenzene | NE<br>2.38144 | 2.28219<br>2.30322 | 1.76441<br>2.43114 | 1.95855<br>2.46321 | 2.17705 | 2.29365 | AVRG | | 2.22832 | | 10.32115 | |
| p-Isopropyltoluene | NE<br>2.16946 | 2.11113<br>2.07989 | 1.42476<br>2.19272 | 1.76888<br>2.20460 | 1.95504 | 2.06459 | AVRG | | 1.99679 | | 12.72950 | |
| 1,3-Dichlorobenzene | NE<br>1.39279 | 1.34465<br>1.34586 | 1.21323<br>1.42324 | 1.32549<br>1.42237 | 1.40186 | 1.38449 | AVRG | | 1.36155 | | 4.82043 | |
| 1,4-Dichlorobenzene | NE<br>1.45712 | 1.63128<br>1.44362 | 1.40441<br>1.52301 | 1.45614<br>1.52190 | 1.47766 | 1.45673 | AVRG | | 1.48576 | | 4.44368 | |
| Benzyl Chloride | NE<br>472387 | 3642<br>1009234 | 4632<br>1650494 | 12783<br>2286488 | 35254 | 163895 | LINR | 0.05387 | 0.82700 | | 0.99832 | |
| n-Butylbenzene | NE<br>696355 | 5149<br>1425779 | 8459<br>2293126 | 19853<br>3216534 | 54831 | 248190 | LINR | 0.03551 | 1.99525 | | 0.99890 | |
| 1,2-Dichlorobenzene | NE<br>1.39065 | 1.58241<br>1.36532 | 1.22790<br>1.44207 | 1.34058<br>1.43128 | 1.42827 | 1.41177 | AVRG | | 1.40225 | | 6.73504 | |
| 1,2-Dibromo-3-Chloropropane | NE<br>48660 | 441<br>94321 | 778<br>149691 | 1619<br>205063 | 4911 | 18635 | LINR | 0.00184 | 0.12764 | | 0.99948 | |
| 1,2,4-Trichlorobenzene | NE<br>0.95146 | 0.91627<br>0.90293 | 0.65608<br>0.94400 | 0.83350<br>0.95022 | 0.89445 | 0.91558 | AVRG | | 0.88494 | | 10.53488 | |
| Hexachlorobutadiene | NE<br>155390 | 1477<br>299042 | 1928<br>466452 | 3970<br>654615 | 13454 | 55912 | QUAD | -0.00107 | 2.58308 | -0.07816 | 0.99966 | |
| Naphthalene | NE<br>2.14094 | 2.01970<br>2.06230 | 1.60683<br>2.15450 | 1.85985<br>2.12714 | 2.04153 | 2.10842 | AVRG | | 2.01347 | | 8.78393 | |
| 1,2,3-Trichlorobenzene | NE<br>0.85880 | 1.02696<br>0.83163 | 0.68341<br>0.85478 | 0.79977<br>0.84995 | 0.84958 | 0.87304 | AVRG | | 0.84755 | | 10.42886 | |

NE - Not Evaluated, AVRG - Averaged, LINR - Linear Regression, WLIN - Weighted Linear, QUAD - Quadratic, * - Curve Fit Outside Limits

# Initial Calibration Data

**Client** Aptim Environmental & Infrastucture, Inc.

**Project** LHAAP46 Febuary 2023

**Workorder** HS23020265

**RunID** VOA6_424237

## Volatiles by by EPA 8260

**ICAL Start Date** 16-DEC-2022 1138 **ICAL End Date** 16-DEC-2022 1507



| Compound | Level 1<br>0.250<br>Level 7<br>50.0 | Level 2<br>0.500<br>Level 8<br>100.0 | Level 3<br>1.00<br>Level 9<br>150.0 | Level 4<br>2.00<br>Level 10<br>200.0 | Level 5<br>5.00 | Level 6<br>20.00 | Curve | b | m1 | m2 | %RSD<br>or $R^2$ | Q |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ethyl Acetate | NE<br>0.37280 | 0.44748<br>0.34980 | 0.34909<br>0.38488 | 0.40657<br>0.39192 | 0.39985 | 0.40902 | AVRG | | 0.39016 | | 7.92750 | |
| Methyl Acrylate | NE<br>0.33014 | 0.38247<br>0.33914 | 0.34243<br>0.35741 | 0.29817<br>0.35867 | 0.33173 | 0.31494 | AVRG | | 0.33946 | | 7.36740 | |
| n-Butanol | NE<br>54418 | 622<br>124057 | 1171<br>210842 | 2004<br>297334 | 4891 | 15012 | QUAD | 0.80435 | 158 | -58.97368 | 0.99813 | * |
| Ethyl Acrylate | NE<br>420886 | NE<br>862071 | NE<br>1358300 | 9825<br>1836030 | 26414 | 172044 | LINR | 0.05859 | 1.02468 | | 0.99901 | * |
| Cyclohexanone | NE<br>0.01934 | 0.07093<br>0.01945 | 0.03374<br>0.01993 | 0.02556<br>0.01966 | 0.01884 | 0.01912 | AVRG | | 0.02740 | | 62.21369 | * |
| 1,4-Dioxane | 0.00463<br>0.00443 | 0.00501<br>0.00442 | 0.00455<br>0.00480 | 0.00386<br>0.00497 | 0.00466 | 0.00438 | AVRG | | 0.00457 | | 7.29408 | |
| n-Hexane | NE<br>0.39852 | 0.41368<br>0.36338 | 0.26016<br>0.39788 | 0.32309<br>0.40267 | 0.32437 | 0.35631 | AVRG | | 0.36001 | | 13.97418 | |
| Freon TF | NE<br>0.37622 | 0.40111<br>0.36030 | 0.37263<br>0.38547 | 0.33005<br>0.39624 | 0.32940 | 0.35185 | AVRG | | 0.36703 | | 7.16337 | |
| Methyl Acetate | NE<br>0.21071 | 0.27499<br>0.21615 | 0.23617<br>0.22455 | 0.22728<br>0.22667 | 0.19900 | 0.20937 | AVRG | | 0.22499 | | 9.73149 | |
| Methylcyclohexane | NE<br>0.60749 | 0.69525<br>0.62521 | 0.49917<br>0.65111 | 0.58500<br>0.65095 | 0.56389 | 0.63030 | AVRG | | 0.61204 | | 9.36456 | |
| Isopropyl alcohol | NE<br>0.01716 | 0.02240<br>0.01767 | 0.01652<br>0.01919 | 0.01536<br>0.01934 | 0.01833 | 0.01677 | AVRG | | 0.01808 | | 11.41496 | |
| Amyl alcohol | NE<br>0.00433 | NE<br>0.00498 | NE<br>0.00582 | NE<br>0.00605 | 0.00196 | 0.00315 | AVRG | | 0.00438 | | 36.19033 | * |

NE - Not Evaluated, AVRG - Averaged, LINR - Linear Regression, WLIN - Weighted Linear, QUAD - Quadratic, * - Curve Fit Outside Limits

# Initial Calibration Data

**Client** Aptim Environmental & Infrastucture, Inc.

**Project** LHAAP46 Febuary 2023

**Workorder** HS23020265

**RunID** VOA6_424237

## Volatiles by by EPA 8260

**ICAL Start Date** 16-DEC-2022 1138 **ICAL End Date** 16-DEC-2022 1507



| Compound | Level 1 0.250 Level 7 50.0 | Level 2 0.500 Level 8 100.0 | Level 3 1.00 Level 9 150.0 | Level 4 2.00 Level 10 200.0 | Level 5 5.00 | Level 6 20.00 | Curve | b | m1 | m2 | %RSD or $R^2$ | Q |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Allyl alcohol | NE<br>0.01993 | 0.03347<br>0.01817 | 0.01301<br>0.01989 | 0.01615<br>0.02013 | 0.01622 | 0.01782 | AVRG | | 0.01942 | | 29.60962 | * |
| 4-Methyl-2-pentanol | NE<br>0.04191 | 0.13977<br>0.04448 | 0.06768<br>0.05120 | 0.05740<br>0.05444 | 0.04467 | 0.04137 | AVRG | | 0.06032 | | 51.38639 | * |
| Tert-butyl alcohol | NE<br>0.03307 | 0.04145<br>0.03257 | 0.03359<br>0.03586 | 0.03291<br>0.03628 | 0.03387 | 0.03199 | AVRG | | 0.03462 | | 8.48705 | |
| Diethyl ether | NE<br>0.30968 | 0.40393<br>0.31674 | 0.33122<br>0.33062 | 0.34807<br>0.33029 | 0.33548 | 0.30080 | AVRG | | 0.33409 | | 8.92652 | |
| 1,3-Butadiene | NE<br>0.33288 | 0.38854<br>0.32994 | 0.38107<br>0.34951 | 0.31405<br>0.35836 | 0.31693 | 0.31715 | AVRG | | 0.34316 | | 8.15203 | |
| Cyclohexane | NE<br>237699 | 2803<br>432198 | 4003<br>682728 | 7375<br>943314 | 19859 | 84355 | LINR | 0.02522 | 0.51703 | | 0.99847 | |
| Tetrahydrofuran | NE<br>58181 | 900<br>109518 | 1361<br>162133 | 2867<br>219995 | 7598 | 28221 | LINR | -0.06333 | 0.06025 | | 0.99942 | |
| alpha-Methylstyrene | NE<br>1.13399 | 1.35155<br>1.10993 | 0.85865<br>1.16502 | 1.02359<br>1.17184 | 1.06165 | 1.09458 | AVRG | | 1.10787 | | 11.89593 | |
| Diisopropyl ether | NE<br>1.21127 | 1.41201<br>1.25239 | 1.35074<br>1.32366 | 1.30436<br>1.33324 | 1.25459 | 1.23114 | AVRG | | 1.29704 | | 5.00179 | |
| Dichlorofluoromethane | NE<br>0.05734 | NE<br>0.05842 | NE<br>0.06234 | NE<br>0.06214 | 0.06484 | 0.06089 | AVRG | | 0.06099 | | 4.51209 | * |
| Propylene oxide | NE<br>0.03071 | NE<br>0.03174 | 0.05613<br>0.03407 | 0.03062<br>0.03228 | 0.03687 | 0.02961 | AVRG | | 0.03525 | | 24.79698 | * |
| 3-Methyl-1-butanol | NE<br>0.00489 | NE<br>0.00483 | NE<br>0.00601 | NE<br>0.00612 | 0.00211 | 0.00438 | AVRG | | 0.00472 | | 30.80128 | * |

NE - Not Evaluated, AVRG - Averaged, LINR - Linear Regression, WLIN - Weighted Linear, QUAD - Quadratic, * - Curve Fit Outside Limits

# Initial Calibration Data

**Client** Aptim Environmental & Infrastucture, Inc.

**Project** LHAAP46 Febuary 2023

**Workorder** HS23020265

**RunID** VOA6_424237

## Volatiles by by EPA 8260

**ICAL Start Date** 16-DEC-2022 1138 **ICAL End Date** 16-DEC-2022 1507



| Compound | Level 1 0.250 Level 7 50.0 | Level 2 0.500 Level 8 100.0 | Level 3 1.00 Level 9 150.0 | Level 4 2.00 Level 10 200.0 | Level 5 5.00 | Level 6 20.00 | Curve | b | m1 | m2 | %RSD or $R^2$ | Q |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Butyl acrylate | NE<br>0.63698 | 0.73114<br>0.67566 | 0.58907<br>0.72950 | 0.57945<br>0.74630 | 0.58578 | 0.60437 | AVRG | | 0.65314 | | 10.52624 | |
| 1,2,3-Trimethylbenzene | NE<br>2.21302 | 2.76749<br>2.29498 | 2.61167<br>2.36627 | 2.52848<br>2.30685 | 2.25428 | 2.32678 | AVRG | | 2.40776 | | 7.74526 | |
| Ethanol | NE<br>29714 | 458<br>56794 | 787<br>87890 | 1703<br>117751 | 3072 | 12594 | LINR | -0.06594 | 0.00325 | | 0.99956 | |
| 1-Propanol | NE<br>0.00727 | 0.00862<br>0.00784 | 0.00964<br>0.00802 | 0.00852<br>0.00816 | 0.00825 | 0.00721 | AVRG | | 0.00817 | | 9.04495 | |
| tert-Butyl formate | NE<br>0.24908 | NE<br>0.25521 | NE<br>0.29218 | 0.25634<br>0.29283 | 0.33766 | 0.24706 | AVRG | | 0.27577 | | 12.14219 | * |
| 3,3-Dimethyl-1-butanol | NE<br>0.02235 | NE<br>0.02388 | NE<br>0.02628 | NE<br>0.02679 | 0.01912 | 0.02169 | AVRG | | 0.02335 | | 12.46791 | * |
| tert-Amyl methyl ether | NE<br>1.32775 | 2.53777<br>1.35994 | 1.82297<br>1.44272 | 1.67155<br>1.43312 | 1.55575 | 1.35887 | AVRG | | 1.61227 | | 23.79383 | * |
| tert-Butyl ethyl ether | NE<br>1.27589 | 1.81984<br>1.30743 | 1.44501<br>1.37993 | 1.35004<br>1.39745 | 1.35223 | 1.28319 | AVRG | | 1.40122 | | 11.86386 | |
| tert-Amyl alcohol | NE<br>0.02491 | 0.03129<br>0.02552 | 0.02457<br>0.02922 | 0.02972<br>0.02928 | 0.03377 | 0.02471 | AVRG | | 0.02811 | | 11.82574 | |
| Epichlorohydrin | NE<br>58515 | 926<br>126478 | 1242<br>183469 | 2483<br>257397 | 5941 | 23842 | LINR | 0.04999 | 0.02268 | | 0.99921 | |
| Isoprene | NE<br>0.13550 | 0.20890<br>0.13652 | 0.10782<br>0.14294 | 0.12769<br>0.14612 | 0.14811 | 0.13210 | AVRG | | 0.14286 | | 19.27805 | * |
| n-Amyl acetate | NE<br>0.52035 | NE<br>0.54240 | NE<br>0.59479 | NE<br>0.61078 | NE | 0.53118 | AVRG | | 0.55990 | | 7.20069 | * |

NE - Not Evaluated, AVRG - Averaged, LINR - Linear Regression, WLIN - Weighted Linear, QUAD - Quadratic, * - Curve Fit Outside Limits

# Initial Calibration Data

**Client** Aptim Environmental & Infrastucture, Inc.

**Project** LHAAP46 Febuary 2023

**Workorder** HS23020265

**RunID** VOA6_424237

## Volatiles by by EPA 8260

**ICAL Start Date** 16-DEC-2022 1138 **ICAL End Date** 16-DEC-2022 1507



| Compound | Level 1 0.250 Level 7 50.0 | Level 2 0.500 Level 8 100.0 | Level 3 1.00 Level 9 150.0 | Level 4 2.00 Level 10 200.0 | Level 5 5.00 | Level 6 20.00 | Curve | b | m1 | m2 | %RSD or $R^2$ | Q |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Isopropyl acetate | NE<br>0.72227 | 1.34716<br>0.73275 | 0.78367<br>0.76494 | 0.79130<br>0.76466 | 0.77391 | 0.74796 | AVRG | | 0.82540 | | 23.86221 | * |
| n-Butyl acetate | NE<br>0.19856 | 0.47947<br>0.20815 | 0.28533<br>0.21762 | 0.15799<br>0.22438 | 0.22627 | 0.22783 | AVRG | | 0.24729 | | 37.68114 | * |
| Acetaldehyde | NE<br>67188 | NE<br>107798 | 3384<br>161053 | 5661<br>205547 | 6161 | 32393 | LINR | -0.46573 | 0.02837 | | 0.99553 | |
| Methyl Amyl Ketone | NE<br>0.62641 | 1.24254<br>0.65992 | 0.68451<br>0.69377 | 0.63815<br>0.71197 | 0.57607 | 0.60726 | AVRG | | 0.71562 | | 28.26825 | * |
| Dimethyl Disulfide | NE<br>0.67210 | 0.79855<br>0.68414 | 0.63899<br>0.70500 | 0.61608<br>0.69777 | 0.61366 | 0.66406 | AVRG | | 0.67671 | | 8.32695 | |
| 1,2-Dichloroethylene (total) | NE<br>0.45918 | 0.54933<br>0.45116 | 0.46024<br>0.47466 | 0.45982<br>0.47504 | 0.46309 | 0.44450 | AVRG | | 0.47078 | | 6.59168 | |
| Xylenes (total) | NE<br>0.56357 | 0.65089<br>0.56191 | 0.51351<br>0.58028 | 0.53491<br>0.60523 | 0.53725 | 0.54549 | AVRG | | 0.56589 | | 7.37687 | |
| Dibromofluoromethane | NE<br>211939 | 2321<br>438954 | 4769<br>652724 | 9050<br>856027 | 24255 | 90108 | LINR | -0.00333 | 0.47851 | | 0.99972 | |
| 1,2-Dichloroethane-d4 | NE<br>222293 | 2849<br>455890 | 5559<br>686218 | 9783<br>919752 | 24938 | 92990 | LINR | 0.00543 | 0.50950 | | 0.99982 | |
| Toluene-d8 | NE<br>1.18347 | 1.47608<br>1.20166 | 1.31472<br>1.16429 | 1.20749<br>1.10711 | 1.24798 | 1.21701 | AVRG | | 1.23554 | | 8.62469 | |
| 4-Bromofluorobenzene | NE<br>292753 | 3870<br>615584 | 7790<br>936681 | 13631<br>1277239 | 32501 | 116878 | LINR | 0.00128 | 0.46242 | | 0.99992 | |

NE - Not Evaluated, AVRG - Averaged, LINR - Linear Regression, WLIN - Weighted Linear, QUAD - Quadratic, * - Curve Fit Outside Limits

01255255

right solutions.
right partner.

Form 6I

# Initial Calibration Verification (ICV)

## Volatiles by  by EPA 8260

Workorder

HS23020265

Client

Aptim Environmental & Infrastucture, Inc.

Project

LHAAP46 Febuary 2023

02/28/2023

ALS Environmental–Houston Laboratory
10450 Stancliff Road, Suite 210, Houston, TX 77099
Phone (281) 530-5656 Fax (281) 530-5887
www.alsglobal.com

# Initial Calibration Verification (ICV)

**Client** Aptim Environmental & Infrastucture, Inc.
**Project** LHAAP46 Febuary 2023

**Workorder** HS23020265

RunID VOA6_424237

## Volatiles by by EPA 8260

Instrument ID voa6.i ICAL Date 16-DEC-2022
Lab File ID X121613.D ICAL Time 2249
?VAL? ?VAL? Conc Units ug/L
Analysis Type VOA Level LOW

| Compound | Amount Added | Amount Recovered | % Recovered | Limits | Q |
|---|---|---|---|---|---|
| 1,1,1,2-Tetrachlor | 50.00 | 48.61 | 97.24 | 80-120 | |
| 1,1,1-Trichloroeth | 50.00 | 50.16 | 100.33 | 80-120 | |
| 1,1,2,2-Tetrachlor | 50.00 | 46.75 | 93.50 | 80-120 | |
| Freon TF | 50.00 | 52.90 | 105.81 | 80-120 | |
| Methyl Acetate | 50.00 | 48.17 | 96.35 | 80-120 | |
| Cyclohexane | 50.00 | 51.73 | 103.47 | 80-120 | |
| Methylcyclohexane | 50.00 | 50.89 | 101.79 | 80-120 | |
| Carbon Disulfide | 100.00 | 98.50 | 98.50 | 80-120 | |
| 2-Hexanone | 100.00 | 96.73 | 96.74 | 80-120 | |
| 1,1,2-Trichloroeth | 50.00 | 47.91 | 95.83 | 80-120 | |
| 1,1-Dichloroethane | 50.00 | 48.19 | 96.39 | 80-120 | |
| 1,1-Dichloroethene | 50.00 | 49.34 | 98.68 | 80-120 | |
| 1,1-Dichloropropen | 50.00 | 52.11 | 104.24 | 80-120 | |
| 1,2,3-Trichloroben | 50.00 | 52.79 | 105.58 | 80-120 | |
| 1,2,3-Trichloropro | 50.00 | 48.07 | 96.16 | 80-120 | |
| 1,2,4-Trichloroben | 50.00 | 54.66 | 109.32 | 80-120 | |
| 1,2,4-Trimethylben | 50.00 | 51.32 | 102.65 | 80-120 | |
| 1,2-Dibromo-3-Chlo | 50.00 | 50.53 | 101.07 | 80-120 | |
| 1,2-Dibromoethane | 50.00 | 50.24 | 100.49 | 80-120 | |
| Acrolein | 100.00 | 95.06 | 95.07 | 80-120 | |
| Acrylonitrile | 100.00 | 101.42 | 101.43 | 80-120 | |
| 1,2-Dichlorobenzen | 50.00 | 49.52 | 99.05 | 80-120 | |
| 1,2-Dichloroethane | 50.00 | 49.52 | 99.05 | 80-120 | |
| 1,2-Dichloropropan | 50.00 | 49.60 | 99.22 | 80-120 | |
| 1,3,5-Trimethylben | 50.00 | 52.30 | 104.61 | 80-120 | |
| 1,3-Dichlorobenzen | 50.00 | 51.21 | 102.43 | 80-120 | |
| 1,3-Dichloropropan | 50.00 | 47.82 | 95.66 | 80-120 | |
| 1,4-Dichlorobenzen | 50.00 | 49.71 | 99.44 | 80-120 | |
| 1-Chlorohexane | 50.00 | 51.98 | 103.97 | 80-120 | |
| 2,2-Dichloropropan | 50.00 | 50.98 | 101.98 | 80-120 | |
| 2-Butanone | 100.00 | 97.74 | 97.74 | 80-120 | |
| 2-Chloroethylvinyl | 100.00 | 104.19 | 104.19 | 80-120 | |
| 2-Chlorotoluene | 50.00 | 49.94 | 99.89 | 80-120 | |
| 4-Chlorotoluene | 50.00 | 51.25 | 102.51 | 80-120 | |

# Initial Calibration Verification (ICV)

**Client** Aptim Environmental & Infrastucture, Inc.
**Project** LHAAP46 Febuary 2023

**Workorder** HS23020265

RunID VOA6_424237

## Volatiles by by EPA 8260

Instrument ID voa6.i ICAL Date 16-DEC-2022
Lab File ID X121613.D ICAL Time 2249
?VAL? ?VAL? Conc Units ug/L
Analysis Type VOA Level LOW

| Compound | Amount Added | Amount Recovered | % Recovered | Limits | Q |
|---|---|---|---|---|---|
| p-Isopropyltoluene | 50.00 | 54.75 | 109.51 | 80-120 | |
| 4-Methyl-2-Pentano | 100.00 | 94.03 | 94.03 | 80-120 | |
| Acetone | 100.00 | 101.89 | 101.90 | 80-120 | |
| Acetonitrile | 500.00 | 475.59 | 95.12 | 80-120 | |
| Allyl Chloride | 50.00 | 47.31 | 94.63 | 80-120 | |
| Benzene | 50.00 | 50.29 | 100.58 | 80-120 | |
| Bromobenzene | 50.00 | 49.62 | 99.25 | 80-120 | |
| Bromochloromethane | 50.00 | 47.25 | 94.51 | 80-120 | |
| Bromodichlorometha | 50.00 | 49.22 | 98.45 | 80-120 | |
| Bromoform | 50.00 | 49.33 | 98.66 | 80-120 | |
| Bromomethane | 50.00 | 50.78 | 101.58 | 80-120 | |
| Carbon Tetrachlori | 50.00 | 49.06 | 98.12 | 80-120 | |
| Chlorobenzene | 50.00 | 48.34 | 96.68 | 80-120 | |
| Chloroethane | 50.00 | 48.32 | 96.64 | 80-120 | |
| Chloroform | 50.00 | 48.45 | 96.91 | 80-120 | |
| Chloromethane | 50.00 | 50.17 | 100.35 | 80-120 | |
| Chloroprene | 50.00 | 47.74 | 95.50 | 80-120 | |
| cis-1,2-Dichloroet | 50.00 | 48.25 | 96.51 | 80-120 | |
| cis-1,3-Dichloropr | 50.00 | 52.11 | 104.22 | 80-120 | |
| Dibromochlorometha | 50.00 | 49.50 | 99.02 | 80-120 | |
| Dibromomethane | 50.00 | 49.19 | 98.38 | 80-120 | |
| Dichlorodifluorome | 50.00 | 52.19 | 104.38 | 80-120 | |
| Ethylbenzene | 50.00 | 51.31 | 102.63 | 80-120 | |
| Ethyl Methacrylate | 50.00 | 44.07 | 88.15 | 80-120 | |
| Iodomethane | 100.00 | 96.48 | 96.49 | 80-120 | |
| Isobutyl Alcohol | 1000.00 | 982.15 | 98.22 | 70-130 | |
| Propionitrile | 500.00 | 486.89 | 97.38 | 70-130 | |
| Hexachlorobutadien | 50.00 | 57.73 | 115.48 | 80-120 | |
| Isopropylbenzene | 50.00 | 52.09 | 104.19 | 80-120 | |
| m,p-Xylenes | 100.00 | 100.17 | 100.17 | 80-120 | |
| Methyl tert-butyl | 50.00 | 48.12 | 96.25 | 80-120 | |
| Methylene Chloride | 50.00 | 47.56 | 95.14 | 80-120 | |
| Methacrylonitrile | 50.00 | 46.73 | 93.48 | 80-120 | |
| Methyl Methacrylat | 50.00 | 47.71 | 95.43 | 80-120 | |

# Initial Calibration Verification (ICV)

**Client** Aptim Environmental & Infrastucture, Inc.
**Project** LHAAP46 Febuary 2023

**Workorder** HS23020265

RunID VOA6_424237

## Volatiles by by EPA 8260

Instrument ID voa6.i ICAL Date 16-DEC-2022
Lab File ID X121613.D ICAL Time 2249
?VAL? ?VAL? Conc Units ug/L
Analysis Type VOA Level LOW

| Compound | Amount Added | Amount Recovered | % Recovered | Limits | Q |
|---|---|---|---|---|---|
| n-Butylbenzene | 50.00 | 50.66 | 101.33 | 80-120 | |
| n-Propylbenzene | 50.00 | 52.67 | 105.35 | 80-120 | |
| Naphthalene | 50.00 | 52.67 | 105.35 | 80-120 | |
| o-Xylene | 50.00 | 49.75 | 99.51 | 80-120 | |
| sec-Butylbenzene | 50.00 | 54.16 | 108.34 | 80-120 | |
| Styrene | 50.00 | 52.09 | 104.20 | 80-120 | |
| tert-Butylbenzene | 50.00 | 52.83 | 105.67 | 80-120 | |
| Tetrachloroethene | 50.00 | 50.99 | 101.99 | 80-120 | |
| Toluene | 50.00 | 49.20 | 98.42 | 80-120 | |
| trans-1,2-Dichloro | 50.00 | 49.99 | 99.98 | 80-120 | |
| trans-1,3-Dichloro | 50.00 | 52.50 | 105.01 | 80-120 | |
| trans-1,4-Dichloro | 50.00 | 49.73 | 99.47 | 80-120 | |
| Trichloroethene | 50.00 | 51.28 | 102.56 | 80-120 | |
| Trichlorofluoromet | 50.00 | 51.00 | 102.02 | 80-120 | |
| Vinyl Acetate | 100.00 | 104.75 | 104.76 | 80-120 | |
| Vinyl Chloride | 50.00 | 50.57 | 101.15 | 80-120 | |
| 1,2-Dichloroethyle | 100.00 | 98.24 | 98.25 | 80-120 | |
| Xylenes (total) | 150.00 | 149.92 | 99.95 | 80-120 | |
| 1,4-Dioxane | 1000.00 | 1021.76 | 102.18 | 80-120 | |
| Dibromofluorometha | 50.00 | 50.91 | 101.84 | 71-125 | |
| 1,2-Dichloroethane | 50.00 | 50.36 | 100.73 | 70-125 | |
| Toluene-d8 | 50.00 | 49.50 | 99.00 | 75-125 | |
| 4-Bromofluorobenze | 50.00 | 49.98 | 99.97 | 72-125 | |

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right partner.

Form 7

# Continuing Calibration Verification (CCV)

## Volatiles by  by EPA 8260

Workorder

HS23020265

Client

Aptim Environmental & Infrastucture, Inc.

Project

LHAAP46 Febuary 2023

02/28/2023

ALS Environmental–Houston Laboratory
10450 Stancliff Road, Suite 210, Houston, TX 77099
Phone (281) 530-5656 Fax (281) 530-5887
www.alsglobal.com

# Continuing Calibration Verification (CCV)

**Client** Aptim Environmental & Infrastucture, Inc.
**Project** LHAAP46 Febuary 2023

**Workorder** HS23020265

**RunID** VOA6_427850

## Volatiles by by EPA 8260

Instrument ID voa6.i Injection Date 11-FEB-2023 1236
Lab File ID X021103.D ICAL Date(s) 16-DEC-2022 16-DEC-2022
Analysis Type WATER ICAL Times 1138 1507
Lab Sample ID CCV Quant Type ISTD

| Compound | $\overline{RRF}$ / Amount | RF50 | CCV RRF50 | Min RRF | %D / %Drift | Max %D / %Drift | Curve Type | Q |
|---|---|---|---|---|---|---|---|---|
| Dibromofluoromethane | 50.0 | 47.17444 | 0.45306 | 0.100 | 5.65111 | 20.0 | Linear | |
| 1,2-Dichloroethane-d4 | 50.0 | 50.38042 | 0.51061 | 0.100 | -0.76084 | 20.0 | Linear | |
| Toluene-d8 | 1.23554 | 1.25489 | 1.25489 | 0.100 | -1.56620 | 20.0 | Averaged | |
| 4-Bromofluorobenzene | 50.0 | 53.77617 | 0.49675 | 0.100 | -7.55235 | 20.0 | Linear | |
| Vinyl Chloride | 0.43678 | 0.43919 | 0.43919 | 0.100 | -0.55201 | 20.0 | Averaged | |
| 1,1-Dichloroethene | 0.37948 | 0.32232 | 0.32232 | 0.100 | 15.06182 | 20.0 | Averaged | |
| trans-1,2-Dichloroethene | 0.42470 | 0.40415 | 0.40415 | 0.100 | 4.83971 | 20.0 | Averaged | |
| cis-1,2-Dichloroethene | 0.51686 | 0.47068 | 0.47068 | 0.100 | 8.93390 | 20.0 | Averaged | |
| Trichloroethene | 0.33865 | 0.32742 | 0.32742 | 0.200 | 3.31727 | 20.0 | Averaged | |
| Tetrachloroethene | 0.28594 | 0.27986 | 0.27986 | 0.200 | 2.12762 | 20.0 | Averaged | |

# Continuing Calibration Verification (CCV)

**Client** Aptim Environmental & Infrastucture, Inc.
**Project** LHAAP46 Febuary 2023

**Workorder** HS23020265

**RunID** VOA6_427850

## Volatiles by by EPA 8260

Instrument ID voa6.i Injection Date 11-FEB-2023 2225
Lab File ID X021131.D ICAL Date(s) 16-DEC-2022 16-DEC-2022
Analysis Type WATER ICAL Times 1138 1507
Lab Sample ID CCV-END Quant Type ISTD

| Compound | $\overline{RRF}$ / Amount | RF50 | CCV RRF50 | Min RRF | %D / %Drift | Max %D / %Drift | Curve Type | Q |
|---|---|---|---|---|---|---|---|---|
| Dibromofluoromethane | 50.0 | 50.45900 | 0.48449 | 0.100 | -0.91799 | 50.0 | Linear | |
| 1,2-Dichloroethane-d4 | 50.0 | 55.84231 | 0.56627 | 0.100 | -11.68462 | 50.0 | Linear | |
| Toluene-d8 | 1.23554 | 1.27362 | 1.27362 | 0.100 | -3.08262 | 50.0 | Averaged | |
| 4-Bromofluorobenzene | 50.0 | 53.89874 | 0.49788 | 0.100 | -7.79748 | 50.0 | Linear | |
| Vinyl Chloride | 0.43678 | 0.39025 | 0.39025 | 0.100 | 10.65360 | 50.0 | Averaged | |
| 1,1-Dichloroethene | 0.37948 | 0.29043 | 0.29043 | 0.100 | 23.46543 | 50.0 | Averaged | |
| trans-1,2-Dichloroethene | 0.42470 | 0.38729 | 0.38729 | 0.100 | 8.80972 | 50.0 | Averaged | |
| cis-1,2-Dichloroethene | 0.51686 | 0.46426 | 0.46426 | 0.100 | 10.17682 | 50.0 | Averaged | |
| Trichloroethene | 0.33865 | 0.29453 | 0.29453 | 0.200 | 13.02805 | 50.0 | Averaged | |
| Tetrachloroethene | 0.28594 | 0.23209 | 0.23209 | 0.200 | 18.83330 | 50.0 | Averaged | |

# Continuing Calibration Verification (CCV)

**Client** Aptim Environmental & Infrastucture, Inc.
**Project** LHAAP46 Febuary 2023

**Workorder** HS23020265

**RunID** VOA6_428010

## Volatiles by by EPA 8260

Instrument ID voa6.i Injection Date 14-FEB-2023 1106
Lab File ID X021403.D ICAL Date(s) 16-DEC-2022 16-DEC-2022
Analysis Type WATER ICAL Times 1138 1507
Lab Sample ID CCV Quant Type ISTD

| Compound | $\overline{RRF}$ / Amount | RF50 | CCV RRF50 | Min RRF | %D / %Drift | Max %D / %Drift | Curve Type | Q |
|---|---|---|---|---|---|---|---|---|
| 1,4-Dioxane | 0.00457 | 0.00648 | 0.00648 | 0.001 | -41.84892 | 20.0 | Averaged | <- |
| 1,3-Butadiene | 0.34316 | 0.32284 | 0.32284 | 0.100 | 5.92091 | 20.0 | Averaged | |
| Dichlorodifluoromethane | 50.0 | 49.76803 | 0.34807 | 0.100 | 0.46394 | 20.0 | Linear | |
| Chloromethane | 50.0 | 64.73757 | 0.59189 | 0.100 | -29.47514 | 20.0 | Linear | <- |
| Vinyl Chloride | 0.43678 | 0.44822 | 0.44822 | 0.100 | -2.61889 | 20.0 | Averaged | |
| Bromomethane | 50.0 | 44.31756 | 0.29144 | 0.100 | 11.36489 | 20.0 | Linear | |
| Chloroethane | 0.30401 | 0.29892 | 0.29892 | 0.100 | 1.67363 | 20.0 | Averaged | |
| Trichlorofluoromethane | 0.61122 | 0.51336 | 0.51336 | 0.100 | 16.01180 | 20.0 | Averaged | |
| Acrolein | 100 | 88.36769 | 0.03010 | 0.010 | 11.63231 | 20.0 | Linear | |
| Acetone | 100 | 108 | 0.15178 | 0.100 | -8.19174 | 20.0 | Linear | |
| 1,1-Dichloroethene | 0.37948 | 0.31141 | 0.31141 | 0.100 | 17.93743 | 20.0 | Averaged | |
| Iodomethane | 100 | 84.37651 | 0.41643 | 0.100 | 15.62349 | 20.0 | Quadratic | |
| Acrylonitrile | 0.12870 | 0.16365 | 0.16365 | 0.050 | -27.15056 | 20.0 | Averaged | <- |
| Methylene Chloride | 0.52052 | 0.48689 | 0.48689 | 0.100 | 6.46099 | 20.0 | Averaged | |
| Methyl tert-butyl ether | 1.24211 | 1.36530 | 1.36530 | 0.100 | -9.91825 | 20.0 | Averaged | |
| Carbon Disulfide | 0.99285 | 1.04344 | 1.04344 | 0.100 | -5.09526 | 20.0 | Averaged | |
| trans-1,2-Dichloroethene | 0.42470 | 0.40000 | 0.40000 | 0.100 | 5.81588 | 20.0 | Averaged | |
| Vinyl Acetate | 1.09037 | 1.39732 | 1.39732 | 0.010 | -28.15148 | 20.0 | Averaged | <- |
| 1,1-Dichloroethane | 0.74536 | 0.75745 | 0.75745 | 0.200 | -1.62182 | 20.0 | Averaged | |
| 2-Butanone | 100 | 119 | 0.17780 | 0.100 | -18.88622 | 20.0 | Linear | |
| 2,2-Dichloropropane | 0.63286 | 0.61629 | 0.61629 | 0.100 | 2.61736 | 20.0 | Averaged | |
| cis-1,2-Dichloroethene | 0.51686 | 0.48180 | 0.48180 | 0.100 | 6.78208 | 20.0 | Averaged | |
| Chloroform | 0.83541 | 0.79076 | 0.79076 | 0.200 | 5.34529 | 20.0 | Averaged | |
| Bromochloromethane | 0.28299 | 0.25586 | 0.25586 | 0.100 | 9.58856 | 20.0 | Averaged | |
| Dibromofluoromethane | 50.0 | 50.32116 | 0.48317 | 0.100 | -0.64232 | 20.0 | Linear | |
| 1,1,1-Trichloroethane | 0.66283 | 0.59792 | 0.59792 | 0.100 | 9.79203 | 20.0 | Averaged | |
| 1,1-Dichloropropene | 0.35497 | 0.33608 | 0.33608 | 0.100 | 5.32267 | 20.0 | Averaged | |
| 1,2-Dichloroethane | 0.40967 | 0.42196 | 0.42196 | 0.100 | -3.00084 | 20.0 | Averaged | |
| Carbon Tetrachloride | 0.37906 | 0.30375 | 0.30375 | 0.100 | 19.86942 | 20.0 | Averaged | |
| 1,2-Dichloroethane-d4 | 50.0 | 54.38551 | 0.55142 | 0.100 | -8.77102 | 20.0 | Linear | |
| Benzene | 1.19399 | 1.15879 | 1.15879 | 0.500 | 2.94786 | 20.0 | Averaged | |
| Trichloroethene | 0.33865 | 0.29966 | 0.29966 | 0.200 | 11.51346 | 20.0 | Averaged | |
| Bromodichloromethane | 0.44810 | 0.42192 | 0.42192 | 0.200 | 5.84153 | 20.0 | Averaged | |
| 2-Chloroethylvinyl ether | 0.12748 | 0.14964 | 0.14964 | 0.001 | -17.38613 | 20.0 | Averaged | |

# Continuing Calibration Verification (CCV)

**Client** Aptim Environmental & Infrastucture, Inc.
**Project** LHAAP46 Febuary 2023

**Workorder** HS23020265

**RunID** VOA6_428010

## Volatiles by by EPA 8260

Instrument ID voa6.i Injection Date 14-FEB-2023 1106
Lab File ID X021403.D ICAL Date(s) 16-DEC-2022 16-DEC-2022
Analysis Type WATER ICAL Times 1138 1507
Lab Sample ID CCV Quant Type ISTD

| Compound | $\overline{RRF}$ / Amount | RF50 | CCV RRF50 | Min RRF | %D / %Drift | Max %D / %Drift | Curve Type | Q |
|---|---|---|---|---|---|---|---|---|
| 1,2-Dichloropropane | 0.31761 | 0.32376 | 0.32376 | 0.100 | -1.93793 | 20.0 | Averaged | |
| Dibromomethane | 0.21588 | 0.20311 | 0.20311 | 0.100 | 5.91404 | 20.0 | Averaged | |
| 4-Methyl-2-Pentanone | 0.26725 | 0.33448 | 0.33448 | 0.100 | -25.15777 | 20.0 | Averaged | <- |
| cis-1,3-Dichloropropene | 0.52625 | 0.55822 | 0.55822 | 0.200 | -6.07459 | 20.0 | Averaged | |
| Toluene-d8 | 1.23554 | 1.27341 | 1.27341 | 0.100 | -3.06512 | 20.0 | Averaged | |
| Toluene | 1.38201 | 1.27551 | 1.27551 | 0.400 | 7.70642 | 20.0 | Averaged | |
| trans-1,3-Dichloropropene | 0.43673 | 0.47336 | 0.47336 | 0.100 | -8.38895 | 20.0 | Averaged | |
| 2-Hexanone | 0.18183 | 0.22765 | 0.22765 | 0.100 | -25.19810 | 20.0 | Averaged | <- |
| 1,1,2-Trichloroethane | 0.27726 | 0.27306 | 0.27306 | 0.100 | 1.51436 | 20.0 | Averaged | |
| 1,3-Dichloropropane | 0.54573 | 0.56612 | 0.56612 | 0.100 | -3.73609 | 20.0 | Averaged | |
| Dibromochloromethane | 0.40016 | 0.38396 | 0.38396 | 0.100 | 4.04830 | 20.0 | Averaged | |
| Tetrachloroethene | 0.28594 | 0.23030 | 0.23030 | 0.200 | 19.45955 | 20.0 | Averaged | |
| 1,2-Dibromoethane | 0.34665 | 0.34880 | 0.34880 | 0.100 | -0.62075 | 20.0 | Averaged | |
| 1-Chlorohexane | 0.24163 | 0.20102 | 0.20102 | 0.100 | 16.80899 | 20.0 | Averaged | |
| Chlorobenzene | 0.98026 | 0.87006 | 0.87006 | 0.500 | 11.24147 | 20.0 | Averaged | |
| 1,1,1,2-Tetrachloroethane | 0.36480 | 0.33628 | 0.33628 | 0.100 | 7.81754 | 20.0 | Averaged | |
| Ethylbenzene | 0.46175 | 0.41546 | 0.41546 | 0.100 | 10.02413 | 20.0 | Averaged | |
| m,p-Xylenes | 0.59525 | 0.52433 | 0.52433 | 0.100 | 11.91376 | 20.0 | Averaged | |
| o-Xylene | 0.58751 | 0.52664 | 0.52664 | 0.300 | 10.36040 | 20.0 | Averaged | |
| Styrene | 0.98473 | 0.93159 | 0.93159 | 0.300 | 5.39665 | 20.0 | Averaged | |
| Bromoform | 0.27722 | 0.27104 | 0.27104 | 0.100 | 2.23018 | 20.0 | Averaged | |
| Isopropylbenzene | 1.34224 | 1.16408 | 1.16408 | 0.100 | 13.27337 | 20.0 | Averaged | |
| 1,1,2,2-Tetrachloroethane | 0.79693 | 0.84863 | 0.84863 | 0.300 | -6.48711 | 20.0 | Averaged | |
| 4-Bromofluorobenzene | 50.0 | 54.21468 | 0.50080 | 0.100 | -8.42937 | 20.0 | Linear | |
| 1,2,3-Trichloropropane | 0.55636 | 0.62734 | 0.62734 | 0.100 | -12.75864 | 20.0 | Averaged | |
| n-Propylbenzene | 2.76956 | 2.52917 | 2.52917 | 0.100 | 8.67983 | 20.0 | Averaged | |
| Bromobenzene | 0.82033 | 0.73563 | 0.73563 | 0.100 | 10.32496 | 20.0 | Averaged | |
| 1,3,5-Trimethylbenzene | 2.04596 | 1.93147 | 1.93147 | 0.100 | 5.59568 | 20.0 | Averaged | |
| 2-Chlorotoluene | 1.81741 | 1.72338 | 1.72338 | 0.100 | 5.17408 | 20.0 | Averaged | |
| 4-Chlorotoluene | 2.07183 | 2.00609 | 2.00609 | 0.100 | 3.17306 | 20.0 | Averaged | |
| tert-Butylbenzene | 1.67475 | 1.47643 | 1.47643 | 0.100 | 11.84192 | 20.0 | Averaged | |
| 1,2,4-Trimethylbenzene | 2.15277 | 2.01848 | 2.01848 | 0.100 | 6.23801 | 20.0 | Averaged | |
| sec-Butylbenzene | 2.22832 | 1.99740 | 1.99740 | 0.100 | 10.36288 | 20.0 | Averaged | |
| p-Isopropyltoluene | 1.99679 | 1.86601 | 1.86601 | 0.100 | 6.54955 | 20.0 | Averaged | |

# Continuing Calibration Verification (CCV)

**Client** Aptim Environmental & Infrastucture, Inc.
**Project** LHAAP46 Febuary 2023

**Workorder** HS23020265

**RunID** VOA6_428010

## Volatiles by by EPA 8260

Instrument ID voa6.i Injection Date 14-FEB-2023 1106
Lab File ID X021403.D ICAL Date(s) 16-DEC-2022 16-DEC-2022
Analysis Type WATER ICAL Times 1138 1507
Lab Sample ID CCV Quant Type ISTD

| Compound | $\overline{RRF}$ / Amount | RF50 | CCV RRF50 | Min RRF | %D / %Drift | Max %D / %Drift | Curve Type | Q |
|---|---|---|---|---|---|---|---|---|
| 1,3-Dichlorobenzene | 1.36155 | 1.24386 | 1.24386 | 0.600 | 8.64385 | 20.0 | Averaged | |
| 1,4-Dichlorobenzene | 1.48576 | 1.31063 | 1.31063 | 0.400 | 11.78779 | 20.0 | Averaged | |
| n-Butylbenzene | 50.0 | 41.82873 | 1.59832 | 0.500 | 16.34255 | 20.0 | Linear | |
| 1,2-Dichlorobenzene | 1.40225 | 1.26125 | 1.26125 | 0.400 | 10.05559 | 20.0 | Averaged | |
| 1,2-Dibromo-3-Chloropropane | 50.0 | 58.68511 | 0.14958 | 0.040 | -17.37021 | 20.0 | Linear | |
| 1,2,4-Trichlorobenzene | 0.88494 | 0.90965 | 0.90965 | 0.100 | -2.79146 | 20.0 | Averaged | |
| Hexachlorobutadiene | 50.0 | 41.41067 | 0.32422 | 0.100 | 17.17866 | 20.0 | Quadratic | |
| Naphthalene | 2.01347 | 2.32787 | 2.32787 | 0.200 | -15.61508 | 20.0 | Averaged | |
| 1,2,3-Trichlorobenzene | 0.84755 | 0.87644 | 0.87644 | 0.010 | -3.40952 | 20.0 | Averaged | |
| 1,2-Dichloroethylene (total | 0.47078 | 0.44090 | 0.44090 | 0.200 | 6.34626 | 20.0 | Averaged | |
| Xylenes (total) | 0.56589 | 0.49084 | 0.49084 | 0.100 | 13.26259 | 20.0 | Averaged | |
| Cyclohexane | 50.0 | 43.75599 | 0.43942 | 0.100 | 12.48801 | 20.0 | Linear | |
| Freon TF | 0.36703 | 0.29389 | 0.29389 | 0.100 | 19.92700 | 20.0 | Averaged | |
| Methylcyclohexane | 0.61204 | 0.70754 | 0.70754 | 0.100 | -15.60279 | 20.0 | Averaged | |
| Methyl Acetate | 0.22499 | 0.30166 | 0.30166 | 0.100 | -34.07643 | 20.0 | Averaged | <- |
| Tert-butyl alcohol | 0.03462 | 0.05213 | 0.05213 | 0.005 | -50.57136 | 20.0 | Averaged | <- |
| Isopropyl alcohol | 0.01808 | 0.03002 | 0.03002 | 0.005 | -66.02667 | 20.0 | Averaged | <- |

# Continuing Calibration Verification (CCV)

**Client** Aptim Environmental & Infrastucture, Inc.
**Project** LHAAP46 Febuary 2023

**Workorder**
**HS23020265**

**RunID**
VOA6_428010

## Volatiles by by EPA 8260

Instrument ID voa6.i Injection Date 14-FEB-2023 2116
Lab File ID X021432.D ICAL Date(s) 16-DEC-2022 16-DEC-2022
Analysis Type WATER ICAL Times 1138 1507
Lab Sample ID CCV-END Quant Type ISTD

| Compound | $\overline{RRF}$ / Amount | RF50 | CCV RRF50 | Min RRF | %D / %Drift | Max %D / %Drift | Curve Type | Q |
|---|---|---|---|---|---|---|---|---|
| 1,4-Dioxane | 0.00457 | 0.00693 | 0.00693 | 0.001 | -51.54186 | 50.0 | Averaged | |
| 1,3-Butadiene | 0.34316 | 0.35896 | 0.35896 | 0.100 | -4.60594 | 50.0 | Averaged | |
| Dichlorodifluoromethane | 50.0 | 56.75397 | 0.39732 | 0.100 | -13.50794 | 50.0 | Linear | |
| Chloromethane | 50.0 | 71.48938 | 0.65581 | 0.100 | -42.97876 | 50.0 | Linear | |
| Vinyl Chloride | 0.43678 | 0.50501 | 0.50501 | 0.100 | -15.62204 | 50.0 | Averaged | |
| Bromomethane | 50.0 | 44.67685 | 0.29390 | 0.100 | 10.64631 | 50.0 | Linear | |
| Chloroethane | 0.30401 | 0.32356 | 0.32356 | 0.100 | -6.43085 | 50.0 | Averaged | |
| Trichlorofluoromethane | 0.61122 | 0.58973 | 0.58973 | 0.100 | 3.51676 | 50.0 | Averaged | |
| Acrolein | 100 | 73.55666 | 0.02489 | 0.010 | 26.44334 | 50.0 | Linear | |
| Acetone | 100 | 105 | 0.14742 | 0.100 | -5.08282 | 50.0 | Linear | |
| 1,1-Dichloroethene | 0.37948 | 0.34258 | 0.34258 | 0.100 | 9.72303 | 50.0 | Averaged | |
| Iodomethane | 100 | 83.53156 | 0.41194 | 0.100 | 16.46844 | 50.0 | Quadratic | |
| Acrylonitrile | 0.12870 | 0.17533 | 0.17533 | 0.050 | -36.23058 | 50.0 | Averaged | |
| Methylene Chloride | 0.52052 | 0.52924 | 0.52924 | 0.100 | -1.67573 | 50.0 | Averaged | |
| Methyl tert-butyl ether | 1.24211 | 1.37529 | 1.37529 | 0.100 | -10.72226 | 50.0 | Averaged | |
| Carbon Disulfide | 0.99285 | 1.13929 | 1.13929 | 0.100 | -14.74935 | 50.0 | Averaged | |
| trans-1,2-Dichloroethene | 0.42470 | 0.43372 | 0.43372 | 0.100 | -2.12243 | 50.0 | Averaged | |
| Vinyl Acetate | 1.09037 | 1.28467 | 1.28467 | 0.010 | -17.82004 | 50.0 | Averaged | |
| 1,1-Dichloroethane | 0.74536 | 0.83599 | 0.83599 | 0.200 | -12.15874 | 50.0 | Averaged | |
| 2-Butanone | 100 | 139 | 0.20873 | 0.100 | -39.04798 | 50.0 | Linear | |
| 2,2-Dichloropropane | 0.63286 | 0.58493 | 0.58493 | 0.100 | 7.57266 | 50.0 | Averaged | |
| cis-1,2-Dichloroethene | 0.51686 | 0.52746 | 0.52746 | 0.100 | -2.05114 | 50.0 | Averaged | |
| Chloroform | 0.83541 | 0.85976 | 0.85976 | 0.200 | -2.91419 | 50.0 | Averaged | |
| Bromochloromethane | 0.28299 | 0.27482 | 0.27482 | 0.100 | 2.88628 | 50.0 | Averaged | |
| Dibromofluoromethane | 50.0 | 51.85143 | 0.49782 | 0.100 | -3.70285 | 50.0 | Linear | |
| 1,1,1-Trichloroethane | 0.66283 | 0.66194 | 0.66194 | 0.100 | 0.13376 | 50.0 | Averaged | |
| 1,1-Dichloropropene | 0.35497 | 0.36015 | 0.36015 | 0.100 | -1.45705 | 50.0 | Averaged | |
| 1,2-Dichloroethane | 0.40967 | 0.43462 | 0.43462 | 0.100 | -6.09138 | 50.0 | Averaged | |
| Carbon Tetrachloride | 0.37906 | 0.32727 | 0.32727 | 0.100 | 13.66239 | 50.0 | Averaged | |
| 1,2-Dichloroethane-d4 | 50.0 | 56.54798 | 0.57346 | 0.100 | -13.09597 | 50.0 | Linear | |
| Benzene | 1.19399 | 1.21846 | 1.21846 | 0.500 | -2.04975 | 50.0 | Averaged | |
| Trichloroethene | 0.33865 | 0.32822 | 0.32822 | 0.200 | 3.07998 | 50.0 | Averaged | |
| Bromodichloromethane | 0.44810 | 0.43505 | 0.43505 | 0.200 | 2.91059 | 50.0 | Averaged | |
| 2-Chloroethylvinyl ether | 0.12748 | 0.15200 | 0.15200 | 0.001 | -19.23403 | 50.0 | Averaged | |

# Continuing Calibration Verification (CCV)

**Client** Aptim Environmental & Infrastucture, Inc.
**Project** LHAAP46 Febuary 2023

**Workorder** HS23020265

**RunID** VOA6_428010

## Volatiles by by EPA 8260

Instrument ID voa6.i Injection Date 14-FEB-2023 2116
Lab File ID X021432.D ICAL Date(s) 16-DEC-2022 16-DEC-2022
Analysis Type WATER ICAL Times 1138 1507
Lab Sample ID CCV-END Quant Type ISTD

| Compound | $\overline{RRF}$ / Amount | RF50 | CCV RRF50 | Min RRF | %D / %Drift | Max %D / %Drift | Curve Type | Q |
|---|---|---|---|---|---|---|---|---|
| 1,2-Dichloropropane | 0.31761 | 0.33661 | 0.33661 | 0.100 | -5.98313 | 50.0 | Averaged | |
| Dibromomethane | 0.21588 | 0.20917 | 0.20917 | 0.100 | 3.10522 | 50.0 | Averaged | |
| 4-Methyl-2-Pentanone | 0.26725 | 0.35337 | 0.35337 | 0.100 | -32.22291 | 50.0 | Averaged | |
| cis-1,3-Dichloropropene | 0.52625 | 0.55837 | 0.55837 | 0.200 | -6.10321 | 50.0 | Averaged | |
| Toluene-d8 | 1.23554 | 1.27841 | 1.27841 | 0.100 | -3.47040 | 50.0 | Averaged | |
| Toluene | 1.38201 | 1.35567 | 1.35567 | 0.400 | 1.90639 | 50.0 | Averaged | |
| trans-1,3-Dichloropropene | 0.43673 | 0.47357 | 0.47357 | 0.100 | -8.43709 | 50.0 | Averaged | |
| 2-Hexanone | 0.18183 | 0.23904 | 0.23904 | 0.100 | -31.46482 | 50.0 | Averaged | |
| 1,1,2-Trichloroethane | 0.27726 | 0.28378 | 0.28378 | 0.100 | -2.35168 | 50.0 | Averaged | |
| 1,3-Dichloropropane | 0.54573 | 0.58569 | 0.58569 | 0.100 | -7.32183 | 50.0 | Averaged | |
| Dibromochloromethane | 0.40016 | 0.39250 | 0.39250 | 0.100 | 1.91451 | 50.0 | Averaged | |
| Tetrachloroethene | 0.28594 | 0.24437 | 0.24437 | 0.200 | 14.53835 | 50.0 | Averaged | |
| 1,2-Dibromoethane | 0.34665 | 0.35497 | 0.35497 | 0.100 | -2.39812 | 50.0 | Averaged | |
| 1-Chlorohexane | 0.24163 | 0.21549 | 0.21549 | 0.100 | 10.81884 | 50.0 | Averaged | |
| Chlorobenzene | 0.98026 | 0.91508 | 0.91508 | 0.500 | 6.64908 | 50.0 | Averaged | |
| 1,1,1,2-Tetrachloroethane | 0.36480 | 0.34745 | 0.34745 | 0.100 | 4.75656 | 50.0 | Averaged | |
| Ethylbenzene | 0.46175 | 0.43756 | 0.43756 | 0.100 | 5.23965 | 50.0 | Averaged | |
| m,p-Xylenes | 0.59525 | 0.55128 | 0.55128 | 0.100 | 7.38615 | 50.0 | Averaged | |
| o-Xylene | 0.58751 | 0.55596 | 0.55596 | 0.300 | 5.36936 | 50.0 | Averaged | |
| Styrene | 0.98473 | 0.97088 | 0.97088 | 0.300 | 1.40698 | 50.0 | Averaged | |
| Bromoform | 0.27722 | 0.27549 | 0.27549 | 0.100 | 0.62428 | 50.0 | Averaged | |
| Isopropylbenzene | 1.34224 | 1.24484 | 1.24484 | 0.100 | 7.25672 | 50.0 | Averaged | |
| 1,1,2,2-Tetrachloroethane | 0.79693 | 0.86570 | 0.86570 | 0.300 | -8.62944 | 50.0 | Averaged | |
| 4-Bromofluorobenzene | 50.0 | 54.22661 | 0.50091 | 0.100 | -8.45322 | 50.0 | Linear | |
| 1,2,3-Trichloropropane | 0.55636 | 0.69833 | 0.69833 | 0.100 | -25.51892 | 50.0 | Averaged | |
| n-Propylbenzene | 2.76956 | 2.70234 | 2.70234 | 0.100 | 2.42707 | 50.0 | Averaged | |
| Bromobenzene | 0.82033 | 0.77880 | 0.77880 | 0.100 | 5.06214 | 50.0 | Averaged | |
| 1,3,5-Trimethylbenzene | 2.04596 | 2.05947 | 2.05947 | 0.100 | -0.66017 | 50.0 | Averaged | |
| 2-Chlorotoluene | 1.81741 | 1.83779 | 1.83779 | 0.100 | -1.12143 | 50.0 | Averaged | |
| 4-Chlorotoluene | 2.07183 | 2.11450 | 2.11450 | 0.100 | -2.05954 | 50.0 | Averaged | |
| tert-Butylbenzene | 1.67475 | 1.60836 | 1.60836 | 0.100 | 3.96415 | 50.0 | Averaged | |
| 1,2,4-Trimethylbenzene | 2.15277 | 2.14167 | 2.14167 | 0.100 | 0.51534 | 50.0 | Averaged | |
| sec-Butylbenzene | 2.22832 | 2.18527 | 2.18527 | 0.100 | 1.93166 | 50.0 | Averaged | |
| p-Isopropyltoluene | 1.99679 | 1.99634 | 1.99634 | 0.100 | 0.02253 | 50.0 | Averaged | |

# Continuing Calibration Verification (CCV)

**Client** Aptim Environmental & Infrastucture, Inc.
**Project** LHAAP46 Febuary 2023

**Workorder** HS23020265

**RunID** VOA6_428010

## Volatiles by by EPA 8260

Instrument ID voa6.i Injection Date 14-FEB-2023 2116
Lab File ID X021432.D ICAL Date(s) 16-DEC-2022 16-DEC-2022
Analysis Type WATER ICAL Times 1138 1507
Lab Sample ID CCV-END Quant Type ISTD

| Compound | $\overline{RRF}$ / Amount | RF50 | CCV RRF50 | Min RRF | %D / %Drift | Max %D / %Drift | Curve Type | Q |
|---|---|---|---|---|---|---|---|---|
| 1,3-Dichlorobenzene | 1.36155 | 1.31614 | 1.31614 | 0.600 | 3.33547 | 50.0 | Averaged | |
| 1,4-Dichlorobenzene | 1.48576 | 1.38006 | 1.38006 | 0.400 | 7.11441 | 50.0 | Averaged | |
| n-Butylbenzene | 50.0 | 43.74195 | 1.67467 | 0.500 | 12.51609 | 50.0 | Linear | |
| 1,2-Dichlorobenzene | 1.40225 | 1.32963 | 1.32963 | 0.400 | 5.17896 | 50.0 | Averaged | |
| 1,2-Dibromo-3-Chloropropane | 50.0 | 59.39870 | 0.15140 | 0.040 | -18.79740 | 50.0 | Linear | |
| 1,2,4-Trichlorobenzene | 0.88494 | 0.97450 | 0.97450 | 0.100 | -10.11994 | 50.0 | Averaged | |
| Hexachlorobutadiene | 50.0 | 43.96016 | 0.34437 | 0.100 | 12.07967 | 50.0 | Quadratic | |
| Naphthalene | 2.01347 | 2.47165 | 2.47165 | 0.200 | -22.75570 | 50.0 | Averaged | |
| 1,2,3-Trichlorobenzene | 0.84755 | 0.95374 | 0.95374 | 0.010 | -12.52997 | 50.0 | Averaged | |
| 1,2-Dichloroethylene (total | 0.47078 | 0.48059 | 0.48059 | 0.200 | -2.08329 | 50.0 | Averaged | |
| Xylenes (total) | 0.56589 | 0.51287 | 0.51287 | 0.100 | 9.36978 | 50.0 | Averaged | |
| Cyclohexane | 50.0 | 50.81434 | 0.51241 | 0.100 | -1.62867 | 50.0 | Linear | |
| Freon TF | 0.36703 | 0.28657 | 0.28657 | 0.100 | 21.92148 | 50.0 | Averaged | |
| Methylcyclohexane | 0.61204 | 0.63608 | 0.63608 | 0.100 | -3.92695 | 50.0 | Averaged | |
| Methyl Acetate | 0.22499 | 0.30820 | 0.30820 | 0.100 | -36.98326 | 50.0 | Averaged | |
| Tert-butyl alcohol | 0.03462 | 0.05436 | 0.05436 | 0.005 | -57.02322 | 50.0 | Averaged | |
| Isopropyl alcohol | 0.01808 | 0.03146 | 0.03146 | 0.005 | -74.00921 | 50.0 | Averaged | |

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Form 8

# Internal Standard Area and RT Summary

## Volatiles by  by EPA 8260

Workorder

HS23020265

Client

Aptim Environmental & Infrastucture, Inc.

Project

LHAAP46 Febuary 2023

02/28/2023

ALS Environmental–Houston Laboratory
10450 Stancliff Road, Suite 210, Houston, TX 77099
Phone (281) 530-5656 Fax (281) 530-5887
www.alsglobal.com

# Form 8 - Internal Standard Area and RT Summary

**Client** Aptim Environmental & Infrastucture, Inc.

**Project** LHAAP46 Febuary 2023

Workorder
**HS23020265**

RunID
VOA6_427850

| | | IS1 | | | | IS2 | | | | IS3 | | | | IS4 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | File ID | Area | | RT | | Area | | RT | | Area | | RT | | Area | | RT | |
| 12-HOUR STD (CCV) | X021103 | 579862 | # | 4.18 | # | 877428 | # | 4.96 | # | 808203 | # | 7.67 | # | 444497 | # | 9.66 | # |
| CCB | X021104 | 637997 | | 4.18 | | 940120 | | 4.97 | | 848699 | | 7.67 | | 455522 | | 9.66 | |
| VLCSW-230211 | X021105 | 563679 | | 4.18 | | 862489 | | 4.96 | | 814754 | | 7.67 | | 449808 | | 9.66 | |
| VBLKW-230211 | X021107 | 653632 | | 4.18 | | 964669 | | 4.96 | | 878934 | | 7.67 | | 464071 | | 9.66 | |
| HS23020265-07 | X021108 | 641042 | | 4.18 | | 939520 | | 4.97 | | 829730 | | 7.67 | | 441014 | | 9.66 | |
| HS23020265-04 | X021109 | 653275 | | 4.18 | | 956066 | | 4.96 | | 861421 | | 7.67 | | 453436 | | 9.66 | |
| HS23020265-01 | X021110 | 643792 | | 4.18 | | 942280 | | 4.96 | | 848445 | | 7.67 | | 453142 | | 9.66 | |
| HS23020265-04MS | X021111 | 645464 | | 4.18 | | 948105 | | 4.97 | | 842519 | | 7.67 | | 452635 | | 9.66 | |
| HS23020265-04MSD | X021112 | 633006 | | 4.17 | | 932649 | | 4.96 | | 841154 | | 7.67 | | 450019 | | 9.66 | |
| HS23020265-02 | X021115 | 647399 | | 4.18 | | 957757 | | 4.96 | | 855461 | | 7.67 | | 440961 | | 9.66 | |
| HS23020265-03 | X021116 | 658879 | | 4.18 | | 960576 | | 4.97 | | 859504 | | 7.67 | | 437309 | | 9.66 | |
| HS23020265-05 | X021117 | 645950 | | 4.18 | | 956646 | | 4.96 | | 855392 | | 7.67 | | 442768 | | 9.66 | |
| HS23020265-06 | X021118 | 634259 | | 4.18 | | 937867 | | 4.96 | | 827827 | | 7.67 | | 429749 | | 9.66 | |
| CCV-END | X021131 | 544214 | | 4.18 | | 855838 | | 4.96 | | 792205 | | 7.67 | | 429278 | | 9.66 | |

IS1 - Pentafluorobenzene IS2 - 1,4-Difluorobenzene IS3 - Chlorobenzene-d5 IS4 - 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = +100% of 12H STD IS Area
AREA LOWER LIMIT = - 50% of 12H STD IS Area
RT - Retention Time IS - Internal Standard

RT UPPER LIMIT = + 0.50 of 12H STD IS RT
RT LOWER LIMIT = - 0.50 of 12H STD IS RT
CCV - Continuing Calibration Verification

# - Area or RT Limit Flag
* - Value Outside Area or RT limits
H - Hour STD - Standard

# Form 8 - Internal Standard Area and RT Summary

**Client** Aptim Environmental & Infrastucture, Inc.

**Project** LHAAP46 Febuary 2023

Workorder
**HS23020265**

RunID
VOA6_428010

| | | IS1 | | | | IS2 | | | | IS3 | | | | IS4 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | File ID | Area | | RT | | Area | | RT | | Area | | RT | | Area | | RT | |
| 12-HOUR STD (CCV) | X021403 | 532990 | # | 4.18 | # | 831161 | # | 4.96 | # | 776932 | # | 7.67 | # | 426076 | # | 9.66 | # |
| CCB | X021404 | 615386 | | 4.18 | | 905665 | | 4.96 | | 810596 | | 7.67 | | 411759 | | 9.66 | |
| VLCSW-230214 | X021405 | 539691 | | 4.18 | | 832385 | | 4.97 | | 774399 | | 7.67 | | 425171 | | 9.66 | |
| VBLKW-230214 | X021407 | 646030 | | 4.18 | | 955124 | | 4.97 | | 853715 | | 7.67 | | 432586 | | 9.66 | |
| HS23020265-01 | X021413 | 603150 | | 4.18 | | 893893 | | 4.97 | | 792677 | | 7.67 | | 414668 | | 9.66 | |
| HS23020265-01MS | X021417 | 610672 | | 4.18 | | 892557 | | 4.97 | | 789252 | | 7.67 | | 399533 | | 9.66 | |
| HS23020265-01MSD | X021418 | 616296 | | 4.18 | | 910492 | | 4.97 | | 818859 | | 7.67 | | 443741 | | 9.66 | |
| CCV-END | X021432 | 513315 | | 4.18 | | 822523 | | 4.97 | | 763052 | | 7.67 | | 412363 | | 9.66 | |

IS1 - Pentafluorobenzene IS2 - 1,4-Difluorobenzene IS3 - Chlorobenzene-d5 IS4 - 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = +100% of 12H STD IS Area
AREA LOWER LIMIT = - 50% of 12H STD IS Area
RT - Retention Time IS - Internal Standard

RT UPPER LIMIT = + 0.50 of 12H STD IS RT
RT LOWER LIMIT = - 0.50 of 12H STD IS RT
CCV - Continuing Calibration Verification

# - Area or RT Limit Flag
* - Value Outside Area or RT limits
H - Hour STD - Standard

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# Analysis Run Log

## Volatiles by  by EPA 8260

Workorder

HS23020265

Client

Aptim Environmental & Infrastucture, Inc.

Project

LHAAP46 Febuary 2023

02/28/2023

ALS Environmental–Houston Laboratory
10450 Stancliff Road, Suite 210, Houston, TX 77099
Phone (281) 530-5656 Fax (281) 530-5887
www.alsglobal.com

# MSVOA06 -Logbook

**Batch:** 52417 **Analyst:** Presenta Cabascango

**Date:** 12-16-2022 **Reviewer:**

**Method:** 8260 **Laboratory:** Houston

**Comments:**

| # | Samp ID | Type | Analyzed | DF | Init Wt/Vol | Final Vol | File ID | Matrix | Status | pH |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | BFB | TUNE | 12-16-2022 11:17 am | 1.00 | 50 mL | 50 mL | X121601.D | Liquid | Y | NA |
| 2 | VSTD000.25 | ICAL1 | 12-16-2022 11:38 am | 1.00 | 50 mL | 50 mL | X121602.D | Liquid | Y | NA |
| 3 | VSTD000.5 | ICAL2 | 12-16-2022 12:20 pm | 1.00 | 50 mL | 50 mL | X121603.D | Liquid | Y | NA |
| 4 | VSTD001 | ICAL3 | 12-16-2022 12:41 pm | 1.00 | 50 mL | 50 mL | X121604.D | Liquid | Y | NA |
| 5 | VSTD002 | ICAL4 | 12-16-2022 01:02 pm | 1.00 | 50 mL | 50 mL | X121605.D | Liquid | Y | NA |
| 6 | VSTD005 | ICAL5 | 12-16-2022 01:23 pm | 1.00 | 50 mL | 50 mL | X121606.D | Liquid | Y | NA |
| 7 | VSTD020 | ICAL6 | 12-16-2022 01:43 pm | 1.00 | 50 mL | 50 mL | X121607.D | Liquid | Y | NA |
| 8 | VSTD050 | ICAL7 | 12-16-2022 02:04 pm | 1.00 | 50 mL | 50 mL | X121608.D | Liquid | Y | NA |
| 9 | VSTD100 | ICAL8 | 12-16-2022 02:25 pm | 1.00 | 50 mL | 50 mL | X121609.D | Liquid | Y | NA |
| 10 | VSTD150 | ICAL9 | 12-16-2022 02:46 pm | 1.00 | 50 mL | 50 mL | X121610.D | Liquid | Y | NA |
| 11 | VSTD200 | ICAL | 12-16-2022 03:07 pm | 1.00 | 50 mL | 50 mL | X121611.D | Liquid | Y | NA |
| 12 | BLANK | SAMP | 12-16-2022 03:28 pm | 1.00 | 50 mL | 50 mL | X121612.D | Liquid | Y | NA |
| 13 | CCV | CCV | 12-16-2022 03:49 pm | 1.00 | 50 mL | 50 mL | X121613.D | Liquid | Y | NA |
| 14 | BLANK | SAMP | 12-16-2022 04:10 pm | 1.00 | 50 mL | 50 mL | X121614.D | Liquid | Y | NA |
| 15 | CCB | SAMP | 12-16-2022 04:31 pm | 1.00 | 50 mL | 50 mL | X121615.D | Liquid | Y | NA |
| 16 | VLCSW-221216 | LCS | 12-16-2022 04:52 pm | 1.00 | 50 mL | 50 mL | X121616.D | Liquid | Y | NA |
| 17 | BLANK | SAMP | 12-16-2022 05:13 pm | 1.00 | 50 mL | 50 mL | X121617.D | Liquid | Y | NA |
| 18 | VBLKW-221216 | MBLK | 12-16-2022 05:34 pm | 1.00 | 50 mL | 50 mL | X121618.D | Liquid | Y | NA |
| 19 | HS22120648-05 | SAMP | 12-16-2022 05:55 pm | 1.00 | 50 mL | 50 mL | X121619.D | Liquid | Y | NA |
| 20 | HS22120648-09 | SAMP | 12-16-2022 06:16 pm | 1.00 | 50 mL | 50 mL | X121620.D | Liquid | Y | NA |
| 21 | HS22120648-01 | SAMP | 12-16-2022 06:37 pm | 1.00 | 50 mL | 50 mL | X121621.D | Liquid | Y | NA |
| 22 | HS22120648-02 | SAMP | 12-16-2022 06:58 pm | 1.00 | 50 mL | 50 mL | X121622.D | Liquid | Y | NA |
| 23 | HS22120648-03 | SAMP | 12-16-2022 07:19 pm | 1.00 | 50 mL | 50 mL | X121623.D | Liquid | Y | NA |
| 24 | HS22120648-04 | SAMP | 12-16-2022 07:40 pm | 1.00 | 50 mL | 50 mL | X121624.D | Liquid | Y | NA |
| 25 | HS22120648-06 | SAMP | 12-16-2022 08:01 pm | 1.00 | 50 mL | 50 mL | X121625.D | Liquid | Y | NA |
| 26 | HS22120648-07 | SAMP | 12-16-2022 08:22 pm | 1.00 | 50 mL | 50 mL | X121626.D | Liquid | Y | NA |
| 27 | HS22120648-08 | SAMP | 12-16-2022 08:43 pm | 1.00 | 50 mL | 50 mL | X121627.D | Liquid | Y | NA |
| 28 | HS22120648-06MS | MS | 12-16-2022 09:04 pm | 1.00 | 50 mL | 50 mL | X121628.D | Liquid | Y | NA |
| 29 | HS22120648-06MSD | MSD | 12-16-2022 09:25 pm | 1.00 | 50 mL | 50 mL | X121629.D | Liquid | Y | NA |
| 30 | CCV-END | CCV | 12-16-2022 09:46 pm | 1.00 | 50 mL | 50 mL | X121630.D | Liquid | Y | NA |
| 31 | BFB | TUNE | 12-16-2022 10:07 pm | 1.00 | 50 mL | 50 mL | Y121601.D | Liquid | Y | NA |
| 32 | CCV | CCV | 12-16-2022 10:28 pm | 1.00 | 50 mL | 50 mL | Y121602a.D | Liquid | Y | NA |
| 33 | CCV | CCV | 12-16-2022 10:49 pm | 1.00 | 50 mL | 50 mL | Y121603.D | Liquid | Y | NA |
| 34 | CCB | SAMP | 12-16-2022 11:10 pm | 1.00 | 50 mL | 50 mL | Y121604.D | Liquid | Y | NA |
| 35 | VLCSW-221215 | LCS | 12-16-2022 11:31 pm | 1.00 | 50 mL | 50 mL | Y121605.D | Liquid | Y | NA |
| 36 | BLANK | SAMP | 12-16-2022 11:52 pm | 1.00 | 50 mL | 50 mL | Y121606.D | Liquid | Y | NA |
| 37 | VBLKW-221215 | MBLK | 12-17-2022 12:13 am | 1.00 | 50 mL | 50 mL | Y121607.D | Liquid | Y | NA |
| 38 | HS22120974-13 | SAMP | 12-17-2022 12:34 am | 1.00 | 50 mL | 50 mL | Y121608.D | Liquid | Y | NA |
| 39 | HS22120974-01 | SAMP | 12-17-2022 12:55 am | 1.00 | 50 mL | 50 mL | Y121609.D | Liquid | Y | NA |
| 40 | HS22120974-01MS | MS | 12-17-2022 01:16 am | 1.00 | 50 mL | 50 mL | Y121610.D | Liquid | Y | NA |
| 41 | HS22120974-01MSD | MSD | 12-17-2022 01:38 am | 1.00 | 50 mL | 50 mL | Y121611.D | Liquid | Y | NA |

# MSVOA06 -Logbook

| # | Samp ID | Type | Analyzed | DF | Init Wt/Vol | Final Vol | File ID | Matrix | Status | pH |
|---|---|---|---|---|---|---|---|---|---|---|
| 42 | BLANK | SAMP | 12-17-2022 01:59 am | 1.00 | 50 mL | 50 mL | Y121612.D | Liquid | Y | NA |
| 43 | HS22120974-02 | SAMP | 12-17-2022 02:20 am | 1.00 | 50 mL | 50 mL | Y121613.D | Liquid | Y | NA |
| 44 | HS22120974-03 | SAMP | 12-17-2022 02:41 am | 1.00 | 50 mL | 50 mL | Y121614.D | Liquid | Y | NA |
| 45 | HS22120974-04 | SAMP | 12-17-2022 03:02 am | 1.00 | 50 mL | 50 mL | Y121615.D | Liquid | Y | NA |
| 46 | HS22120974-05 | SAMP | 12-17-2022 03:23 am | 1.00 | 50 mL | 50 mL | Y121616.D | Liquid | Y | NA |
| 47 | HS22120974-06 | SAMP | 12-17-2022 03:44 am | 1.00 | 50 mL | 50 mL | Y121617.D | Liquid | Y | NA |
| 48 | HS22120974-07 | SAMP | 12-17-2022 04:05 am | 1.00 | 50 mL | 50 mL | Y121618.D | Liquid | Y | NA |
| 49 | HS22120974-08 | SAMP | 12-17-2022 04:26 am | 1.00 | 50 mL | 50 mL | Y121619.D | Liquid | Y | NA |
| 50 | HS22120974-09 | SAMP | 12-17-2022 04:47 am | 1.00 | 50 mL | 50 mL | Y121620.D | Liquid | Y | NA |
| 51 | HS22120974-10 | SAMP | 12-17-2022 05:08 am | 1.00 | 50 mL | 50 mL | Y121621.D | Liquid | Y | NA |
| 52 | HS22120974-11 | SAMP | 12-17-2022 05:29 am | 1.00 | 50 mL | 50 mL | Y121622.D | Liquid | Y | NA |
| 53 | HS22120974-12 | SAMP | 12-17-2022 05:50 am | 1.00 | 50 mL | 50 mL | Y121623.D | Liquid | Y | NA |
| 54 | HS22120974-14 | SAMP | 12-17-2022 06:11 am | 1.00 | 50 mL | 50 mL | Y121624.D | Liquid | Y | NA |
| 55 | HS22120974-15 | SAMP | 12-17-2022 06:32 am | 1.00 | 50 mL | 50 mL | Y121625.D | Liquid | Y | NA |
| 56 | HS22120574-15 | SAMP | 12-17-2022 06:53 am | 5.00 | 10 mL | 50 mL | Y121626.D | Liquid | Y | NA |
| 57 | HS22120574-17 | SAMP | 12-17-2022 07:14 am | 5.00 | 10 mL | 50 mL | Y121627.D | Liquid | Y | NA |
| 58 | HS22120770-07 | SAMP | 12-17-2022 07:36 am | 10.00 | 5 mL | 50 mL | Y121628.D | Liquid | Y | NA |
| 59 | HS22120770-07 | SAMP | 12-17-2022 07:57 am | 100.0( | 500 µL | 50 mL | Y121629.D | Liquid | Y | NA |
| 60 | HS22120770-10 | SAMP | 12-17-2022 08:18 am | 5.00 | 10 mL | 50 mL | Y121630.D | Liquid | Y | NA |
| 61 | BLANK | SAMP | 12-17-2022 08:39 am | 1.00 | 50 mL | 50 mL | Y121631.D | Liquid | Y | NA |

# Form 13 - Analysis Run Log

**Client** Aptim Environmental & Infrastucture, Inc.

**Project** LHAAP46 Febuary 2023

Workorder
**HS23020265**

## Volatiles by EPA 8260

RUNID
VOA6_427850

**Run ID** VOA6_427850 **Start Date** 02/11/23 **EndDate** 02/11/23 **Matrix** Aqueous

| Client Sample ID | Type | Lab Sample ID | File ID | Analysis Date | DF |
|---|---|---|---|---|---|
| CCV | CCV | CCV | X021103.D | 02/11/23 12:36 | 1 |
| CCB | CCB | CCB | X021104.D | 02/11/23 12:57 | 1 |
| VLCSW-230211 | LCS | VLCSW-230211 | X021105.D | 02/11/23 13:18 | 1 |
| VBLKW-230211 | MBLK | VBLKW-230211 | X021107.D | 02/11/23 14:00 | 1 |
| Trip Blank-230206 | SAMP | HS23020265-07 | X021108.D | 02/11/23 14:21 | 1 |
| 46WW02-230206 | SAMP | HS23020265-04 | X021109.D | 02/11/23 14:42 | 1 |
| LHSMW21-230206 | SAMP | HS23020265-01 | X021110.D | 02/11/23 15:03 | 1 |
| 46WW02-230206 | MS | HS23020265-04MS | X021111.D | 02/11/23 15:24 | 1 |
| 46WW02-230206 | MSD | HS23020265-04MSD | X021112.D | 02/11/23 15:45 | 1 |
| 46WW16-230206 | SAMP | HS23020265-02 | X021115.D | 02/11/23 16:49 | 1 |
| 46WW03-230206 | SAMP | HS23020265-03 | X021116.D | 02/11/23 17:10 | 1 |
| 46WW07-230206 | SAMP | HS23020265-05 | X021117.D | 02/11/23 17:31 | 1 |
| 46WW14-230206 | SAMP | HS23020265-06 | X021118.D | 02/11/23 17:52 | 1 |

# Form 13 - Analysis Run Log

**Client** Aptim Environmental & Infrastucture, Inc.

**Project** LHAAP46 Febuary 2023

Workorder
**HS23020265**

## Volatiles by EPA 8260

RUNID
VOA6_428010

**Run ID** VOA6_428010 **Start Date** 02/14/23 **EndDate** 02/14/23 **Matrix** Aqueous

| Client Sample ID | Type | Lab Sample ID | File ID | Analysis Date | DF |
|---|---|---|---|---|---|
| CCV | CCV | CCV | X021403.D | 02/14/23 11:06 | 1 |
| CCB | CCB | CCB | X021404.D | 02/14/23 11:27 | 1 |
| VLCSW-230214 | LCS | VLCSW-230214 | X021405.D | 02/14/23 11:48 | 1 |
| VBLKW-230214 | MBLK | VBLKW-230214 | X021407.D | 02/14/23 12:30 | 1 |
| LHSMW21-230206 | SAMP | HS23020265-01 | X021413.D | 02/14/23 14:36 | 5 |
| LHSMW21-230206 | MS | HS23020265-01MS | X021417.D | 02/14/23 16:01 | 5 |
| LHSMW21-230206 | MSD | HS23020265-01MSD | X021418.D | 02/14/23 16:22 | 5 |

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right solutions.
right partner.

# Raw Data VOA6 424237

## Volatiles by  by EPA 8260

Workorder

HS23020265

Client

Aptim Environmental & Infrastucture, Inc.

Project

LHAAP46 Febuary 2023

02/28/2023

ALS Environmental–Houston Laboratory
10450 Stancliff Road, Suite 210, Houston, TX 77099
Phone (281) 530-5656 Fax (281) 530-5887
www.alsglobal.com

Data File: \\NAHSTWS005\Target\chem\voa6.i\x221216.b\X121601.D  Page 1
Report Date: 16-Dec-2022 12:08

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\x221216.b\X121601.D
Lab Smp Id: BFB  Client Smp ID: BFB
Inj Date  : 16-DEC-2022 11:17
Operator  : PC  Inst ID: voa6.i
Smp Info  : BFB;BFB;3;;BFB
Misc Info : V6;WATER;0;1;
Comment   :
Method    : \\NAHSTWS005\Target\chem\voa6.i\x221216.b\bfb.m
Meth Date : 01-Dec-2022 12:59 Linh.Pham  Quant Type: ISTD
Cal Date  :  Cal File:
Als bottle: 1  QC Sample: BFB
Dil Factor: 1.00000
Integrator: HP RTE  Compound Sublist: all.sub
Target Version:  4.14  Sample Matrix: WATER
Processing Host: NAHSTW7051

Concentration Formula: Amt * DF * Uf * Vf * Vi * CpndVariable

| Name | Value | Description |
|---|---|---|
| DF | 1.000 | Dilution Factor |
| Uf | 5.000 | ng unit correction factor |
| Vf | 1.000 | Volumetric correction factor |
| Vi | 2.000 | Injection Volume |
| Cpnd Variable | | Local Compound Variable |

| | | | | | CONCENTRATIONS ON-COL ( ug/L) | CONCENTRATIONS FINAL ( ug/l) | | |
|---|---|---|---|---|---|---|---|---|
| RT | EXP RT | REL RT | MASS | RESPONSE | | | TARGET RANGE | RATIO |
| 1 bfb | | | | | | | CAS #: 460-00-4 | |
| 8.691 | 8.889 | ( 0.000) | 95 | 72328 | | | 0.00- 100.00 | 100.00 |
| 8.691 | 8.889 | ( 0.000) | 50 | 13272 | | | 15.00- 40.00 | 18.35 |
| 8.691 | 8.889 | ( 0.000) | 75 | 33368 | | | 30.00- 60.00 | 46.13 |
| 8.691 | 8.889 | ( 0.000) | 96 | 5178 | | | 5.00- 9.00 | 7.16 |
| 8.691 | 8.889 | ( 0.000) | 173 | 577 | | | 0.00- 2.00 | 0.90 |
| 8.691 | 8.889 | ( 0.000) | 174 | 64360 | | | 50.00- 0.00 | 88.98 |
| 8.691 | 8.889 | ( 0.000) | 175 | 5033 | | | 5.00- 9.00 | 7.82 |
| 8.691 | 8.889 | ( 0.000) | 176 | 63184 | | | 95.00- 101.00 | 98.17 |
| 8.691 | 8.889 | ( 0.000) | 177 | 4164 | | | 5.00- 9.00 | 6.59 |

| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 95 | Base Peak, 100% relative abundance | 100.00 |
| 50 | 15.00 - 40.00% of mass 95 | 18.35 |
| 75 | 30.00 - 60.00% of mass 95 | 46.13 |
| 96 | 5.00 - 9.00% of mass 95 | 7.16 |
| 173 | Less than 2.00% of mass 174 | 0.80 ( 0.90) |
| 174 | Greater than 50.00% of mass 95 | 88.98 |
| 175 | 5.00 - 9.00% of mass 174 | 6.96 ( 7.82) |
| 176 | 95.00 - 101.00% of mass 174 | 87.36 ( 98.17) |
| 177 | 5.00 - 9.00% of mass 176 | 5.76 ( 6.59) |

Data File: X121601.D
Spectrum: Scan 2160 ( 8.68)
Location of Maximum: 95.00
Number of points: 84

| m/z | Y | m/z | Y | m/z | Y | m/z | Y |
|---|---|---|---|---|---|---|---|
| 35.90 | 686 | 63.00 | 2521 | 93.00 | 2705 | 136.90 | 215 |
| 37.00 | 3051 | 64.10 | 316 | 94.00 | 9587 | 140.90 | 735 |
| 38.00 | 2957 | 66.90 | 155 | 95.00 | 72328 | 141.70 | 91 |
| 39.00 | 1321 | 67.90 | 6274 | 96.00 | 5178 | 142.80 | 683 |
| 39.90 | 1146 | 69.00 | 6990 | 96.90 | 213 | 145.60 | 119 |
| 42.00 | 114 | 69.90 | 604 | 103.00 | 58 | 148.00 | 107 |
| 42.90 | 301 | 71.80 | 385 | 104.00 | 313 | 149.80 | 105 |
| 44.00 | 1509 | 72.90 | 2986 | 104.70 | 125 | 153.80 | 54 |
| 45.00 | 716 | 74.00 | 11163 | 105.10 | 132 | 154.80 | 169 |
| 46.80 | 723 | 75.00 | 33368 | 105.90 | 451 | 156.80 | 155 |
| 48.00 | 503 | 76.00 | 3228 | 110.60 | 54 | 160.80 | 71 |
| 49.00 | 3278 | 76.90 | 395 | 113.00 | 74 | 171.60 | 83 |
| 50.00 | 13272 | 77.80 | 187 | 114.80 | 159 | 172.80 | 577 |
| 51.00 | 3648 | 78.90 | 2224 | 115.80 | 342 | 173.90 | 64360 |
| 52.10 | 365 | 79.80 | 718 | 116.90 | 386 | 174.90 | 5033 |
| 54.00 | 52 | 80.90 | 2158 | 117.90 | 425 | 175.90 | 63184 |
| 54.90 | 278 | 81.80 | 420 | 118.80 | 260 | 176.90 | 4164 |
| 56.00 | 1513 | 83.00 | 51 | 127.90 | 191 | 178.00 | 133 |
| 57.00 | 1763 | 86.90 | 2878 | 128.90 | 172 | | |
| 59.90 | 665 | 87.80 | 2342 | 129.80 | 237 | | |
| 61.00 | 3173 | 91.00 | 516 | 130.80 | 156 | | |
| 62.00 | 3572 | 92.00 | 2006 | 134.70 | 222 | | |

Data File: \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121601.D Page 1

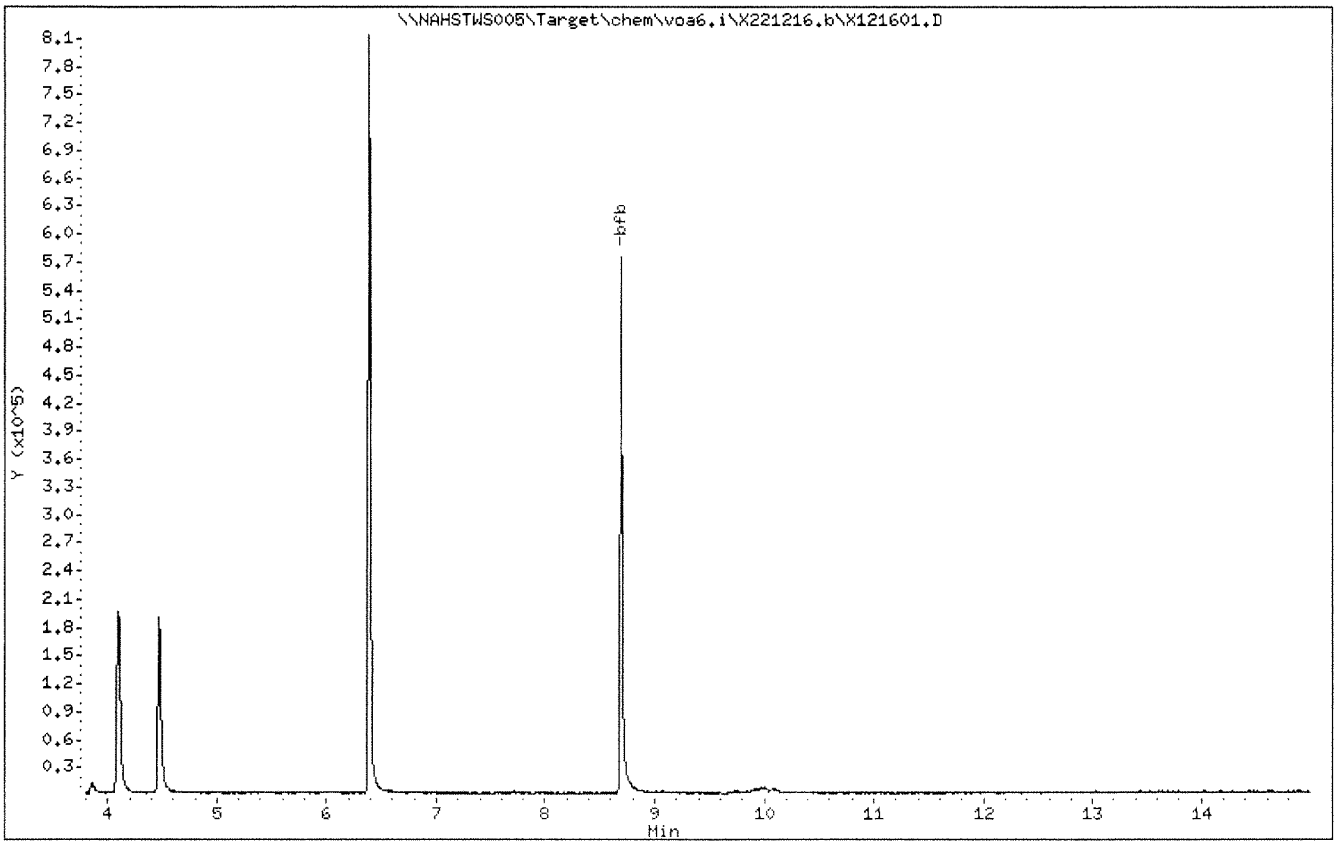
Date : 16-DEC-2022 11:17

Client ID: BFB Instrument: voa6.i

Sample Info: BFB;BFB;3;;BFB

Volume Injected (uL): 2.0 Operator: PC

Column phase: DB624 Column diameter: 0.25



Data File: \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121601.D Page 2

Date : 16-DEC-2022 11:17

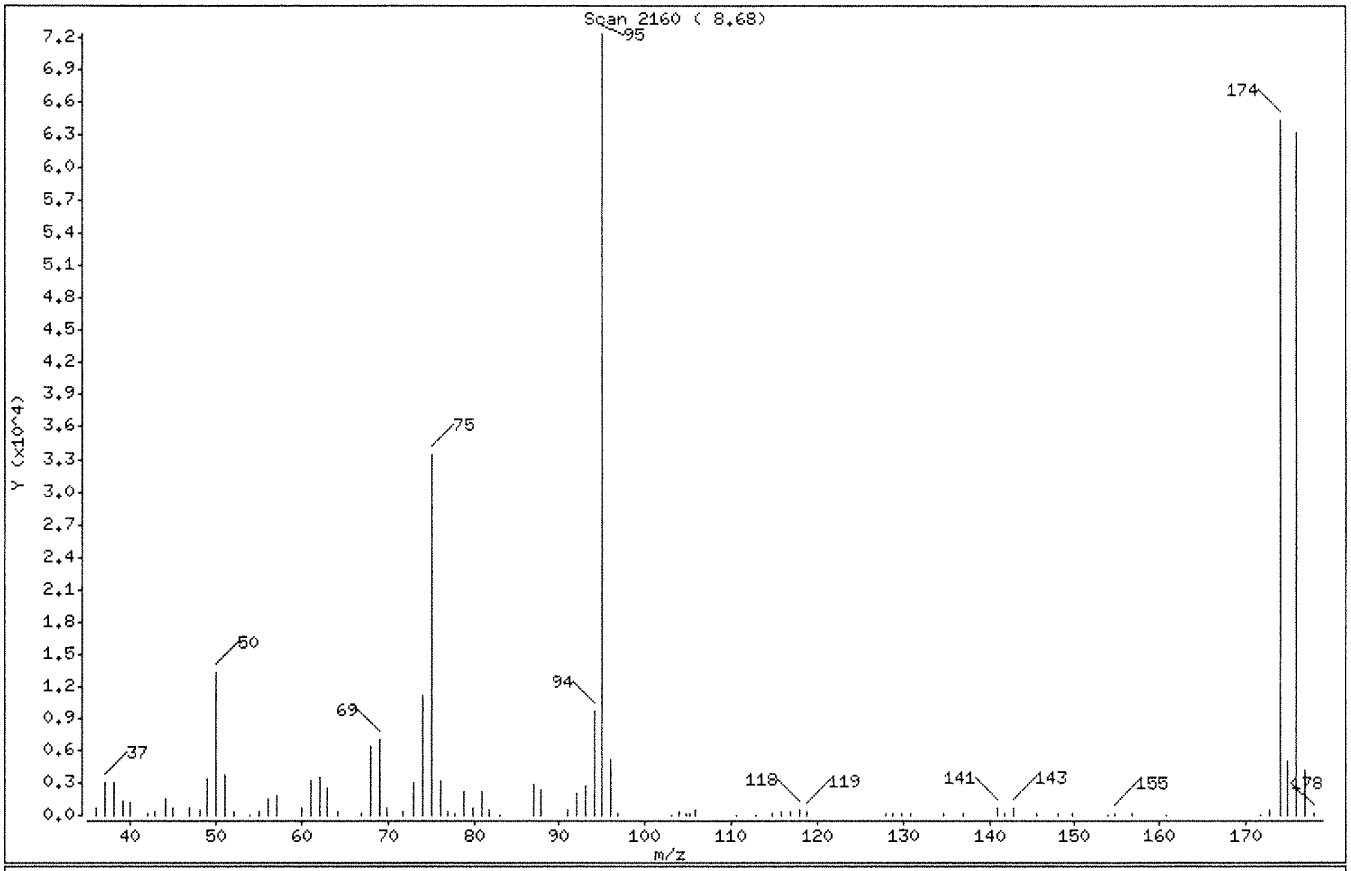
Client ID: BFB Instrument: voa6.i

Sample Info: BFB;BFB;3;;BFB

Volume Injected (uL): 2.0 Operator: PC

Column phase: DB624 Column diameter: 0.25

1 bfb




| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 95 | Base Peak, 100% relative abundance | 100.00 |
| 50 | 15.00 - 40.00% of mass 95 | 18.35 |
| 75 | 30.00 - 60.00% of mass 95 | 46.13 |
| 96 | 5.00 - 9.00% of mass 95 | 7.16 |
| 173 | Less than 2.00% of mass 174 | 0.80 ( 0.90) |
| 174 | Greater than 50.00% of mass 95 | 88.98 |
| 175 | 5.00 - 9.00% of mass 174 | 6.96 ( 7.82) |
| 176 | 95.00 - 101.00% of mass 174 | 87.36 ( 98.17) |
| 177 | 5.00 - 9.00% of mass 176 | 5.76 ( 6.59) |

Data File: \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121601.D 

Date : 16-DEC-2022 11:17

Client ID: BFB Instrument: voa6.i

Sample Info: BFB;BFB;3;;BFB

Volume Injected (uL): 2.0 Operator: PC

Column phase: DB624 Column diameter: 0.25

Data File: X121601.D
Spectrum: Scan 2160 ( 8.68)
Location of Maximum: 95.00
Number of points: 84

| m/z | Y | m/z | Y | m/z | Y | m/z | Y |
|---|---|---|---|---|---|---|---|
| 35.90 | 686 | 63.00 | 2521 | 93.00 | 2705 | 136.90 | 215 |
| 37.00 | 3051 | 64.10 | 316 | 94.00 | 9587 | 140.90 | 735 |
| 38.00 | 2957 | 66.90 | 155 | 95.00 | 72328 | 141.70 | 91 |
| 39.00 | 1321 | 67.90 | 6274 | 96.00 | 5178 | 142.80 | 683 |
| 39.90 | 1146 | 69.00 | 6990 | 96.90 | 213 | 145.60 | 119 |
| 42.00 | 114 | 69.90 | 604 | 103.00 | 58 | 148.00 | 107 |
| 42.90 | 301 | 71.80 | 385 | 104.00 | 313 | 149.80 | 105 |
| 44.00 | 1509 | 72.90 | 2986 | 104.70 | 125 | 153.80 | 54 |
| 45.00 | 716 | 74.00 | 11163 | 105.10 | 132 | 154.80 | 169 |
| 46.80 | 723 | 75.00 | 33368 | 105.90 | 451 | 156.80 | 155 |
| 48.00 | 503 | 76.00 | 3228 | 110.60 | 54 | 160.80 | 71 |
| 49.00 | 3278 | 76.90 | 395 | 113.00 | 74 | 171.60 | 83 |
| 50.00 | 13272 | 77.80 | 187 | 114.80 | 159 | 172.80 | 577 |
| 51.00 | 3648 | 78.90 | 2224 | 115.80 | 342 | 173.90 | 64360 |
| 52.10 | 365 | 79.80 | 718 | 116.90 | 386 | 174.90 | 5033 |
| 54.00 | 52 | 80.90 | 2158 | 117.90 | 425 | 175.90 | 63184 |
| 54.90 | 278 | 81.80 | 420 | 118.80 | 260 | 176.90 | 4164 |
| 56.00 | 1513 | 83.00 | 51 | 127.90 | 191 | 178.00 | 133 |
| 57.00 | 1763 | 86.90 | 2878 | 128.90 | 172 | | |
| 59.90 | 665 | 87.80 | 2342 | 129.80 | 237 | | |
| 61.00 | 3173 | 91.00 | 516 | 130.80 | 156 | | |
| 62.00 | 3572 | 92.00 | 2006 | 134.70 | 222 | | |

Data File : \\NAHSTWS005\Target\chem\voa6.i\x221216.b\X121601.D
Inj Date  : 16-DEC-2022 11:17
InstruID  : voa6.i
LabSampID : BFB

NO MANUAL INTEGRATIONS

Data File: \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121602.D  Page 1
Report Date: 27-Dec-2022 16:07

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121602.D
Lab Smp Id: VSTD000.25  Client Smp ID: VSTD000.25
Inj Date  : 16-DEC-2022 11:38
Operator  : PC  Inst ID: voa6.i
Smp Info  : VSTD000.25;VSTD000.25;1;1;
Misc Info : V6;WATER;0;1;
Comment   :
Method    : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\8260W.m
Meth Date : 27-Dec-2022 16:07 voa6.i  Quant Type: ISTD
Cal Date  : 16-DEC-2022 14:04  Cal File: X121608.D
Als bottle: 2  Calibration Sample, Level: 1
Dil Factor: 1.00000
Integrator: HP RTE  Compound Sublist: 08260V6.sub
Target Version:  4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

| Name | Value | Description |
|---|---|---|
| DF | 1.000 | Dilution Factor |
| Uf | 5.000 | ng unit correction factor |
| Vo | 5.000 | sample purged |
| Cpnd Variable | | Local Compound Variable |

| Compounds | QUANT SIG MASS | RT | EXP RT | REL RT | RESPONSE | AMOUNTS CAL-AMT ( ug/l) | ON-COL ( ug/l) |
|---|---|---|---|---|---|---|---|
| * 1 Pentafluorobenzene | 168 | 4.178 | 4.178 | (1.000) | 461807 | 50.0000 | |
| 135 1,4-Dioxane | 88 | 5.625 | 5.625 | (1.346) | 214 | 5.00000 | 5.06(M) |
| 140 1,3-Butadiene | 54 | 1.164 | 1.164 | (0.279) | 1172 | 0.25000 | 0.36 |
| 25 Methacrylonitrile | 41 | 3.855 | 3.855 | (0.923) | 5876 | 0.25000 | 1.79 |
| 12 Isobutyl Alcohol | 43 | 4.687 | 4.687 | (1.122) | 2537 | 5.00000 | 4.88(TM) |
| 13 Acetonitrile | 39 | 2.202 | 2.202 | (0.527) | 730 | 2.50000 | 1.73 |
| 14 Allyl Chloride | 41 | 2.206 | 2.206 | (0.528) | 1591 | 0.25000 | 0.19 |
| 4 Propionitrile | 54 | 3.702 | 3.702 | (0.886) | 1165 | 2.50000 | 2.47(M) |
| 72 trans-1,4-Dichloro-2-butene | 53 | 8.931 | 8.931 | (1.164) | 280 | 0.25000 | 0.19(M) |
| 145 alpha-Methylstyrene | 118 | 9.268 | 9.268 | (0.959) | 2322 | 0.25000 | 0.30 |
| 200 Dimethyl Disulfide | 94 | 6.213 | 6.213 | (0.810) | 1870 | 0.25000 | 0.21 |
| 139 Diethyl ether | 59 | 1.760 | 1.760 | (0.421) | 687 | 0.25000 | 0.22 |
| 49 Ethyl Methacrylate | 69 | 6.738 | 6.738 | (1.357) | 625 | 0.25000 | 0.19 |
| 142 Tetrahydrofuran | 42 | 3.836 | 3.836 | (0.918) | 358 | 0.50000 | (M) |
| 166 1,2,3-Trimethylbenzene | 105 | 9.737 | 9.737 | (1.008) | 4360 | 0.25000 | 0.25 |
| 2 Dichlorodifluoromethane | 85 | 0.969 | 0.969 | (0.232) | 801 | 0.25000 | 0.63(M) |
| 3 Chloromethane | 50 | 1.077 | 1.077 | (0.258) | 1420 | 0.25000 | 2.53 |
| 5 Vinyl Chloride | 62 | 1.141 | 1.141 | (0.273) | 1134 | 0.25000 | 0.28(M) |
| 6 Bromomethane | 94 | 1.340 | 1.340 | (0.321) | 1009 | 0.25000 | 2.08(M) |
| 8 Trichlorofluoromethane | 101 | 1.561 | 1.561 | (0.374) | 1468 | 0.25000 | 0.26 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 10 Acetone | 43 | 1.977 | 1.977 (0.473) | 2727 | 0.50000 | 2.07 |
| 11 1,1-Dichloroethene | 96 | 1.910 | 1.910 (0.457) | 1010 | 0.25000 | 0.28(M) |

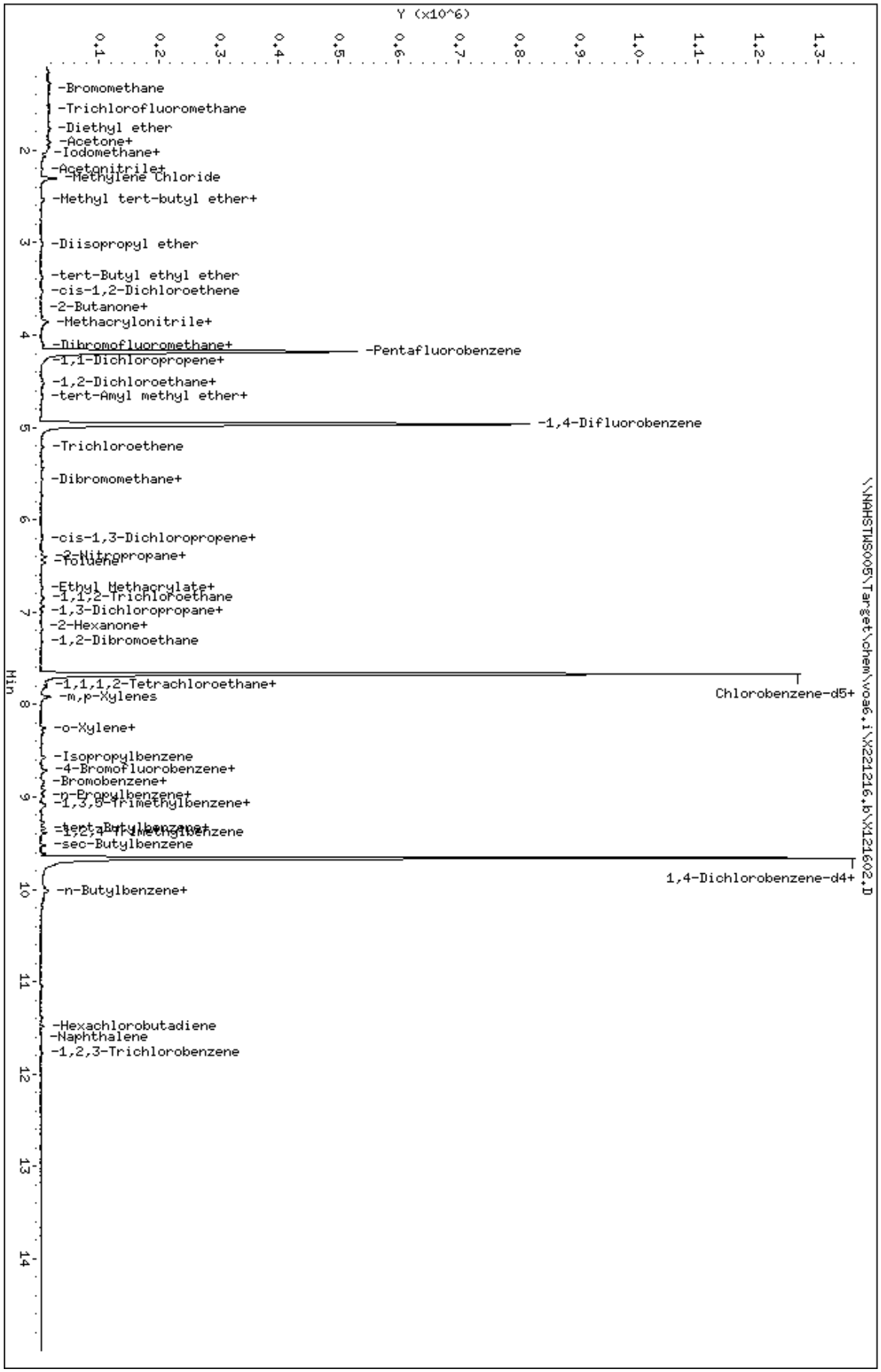
| | Compounds | QUANT SIG MASS | RT | EXP RT | REL RT | RESPONSE | AMOUNTS CAL-AMT ( ug/l) | ON-COL ( ug/l) |
|---|---|---|---|---|---|---|---|---|
| | 15 Iodomethane | 142 | 2.026 | 2.026 | (0.485) | 1106 | 0.50000 | 3.56(T) |
| | 17 Methylene Chloride | 84 | 2.292 | 2.292 | (0.549) | 1436 | 0.25000 | 0.29(M) |
| | 18 Methyl tert-butyl ether | 73 | 2.536 | 2.536 | (0.607) | 2787 | 0.25000 | 0.24 |
| | 19 Carbon Disulfide | 76 | 2.071 | 2.071 | (0.496) | 5999 | 0.50000 | 0.65 |
| | 20 trans-1,2-Dichloroethene | 96 | 2.539 | 2.539 | (0.608) | 1302 | 0.25000 | 0.33 |
| | 24 2-Butanone | 43 | 3.698 | 3.698 | (0.885) | 1014 | 0.50000 | 3.74 |
| | 27 cis-1,2-Dichloroethene | 96 | 3.533 | 3.533 | (0.846) | 1402 | 0.25000 | 0.29 |
| | 28 Chloroform | 83 | 3.908 | 3.908 | (0.935) | 2553 | 0.25000 | 0.33 |
| | 29 Bromochloromethane | 128 | 3.799 | 3.799 | (0.909) | 802 | 0.25000 | 0.30(M) |
| $ | 30 Dibromofluoromethane | 113 | 4.103 | 4.103 | (0.982) | 1706 | 0.25000 | 0.21 |
| | 31 1,1,1-Trichloroethane | 97 | 4.076 | 4.076 | (0.976) | 1648 | 0.25000 | 0.26 |
| | 32 1,1-Dichloropropene | 75 | 4.286 | 4.286 | (0.863) | 2114 | 0.25000 | 0.43 |
| | 33 1,2-Dichloroethane | 62 | 4.571 | 4.571 | (0.921) | 2167 | 0.25000 | 0.38 |
| | 34 Carbon Tetrachloride | 117 | 4.256 | 4.256 | (0.857) | 1685 | 0.25000 | 0.32(M) |
| $ | 35 1,2-Dichloroethane-d4 | 65 | 4.481 | 4.481 | (1.073) | 2260 | 0.25000 | 0.75(T) |
| * | 36 1,4-Difluorobenzene | 114 | 4.965 | 4.965 | (1.000) | 690224 | 50.0000 | |
| | 37 Benzene | 78 | 4.522 | 4.522 | (0.911) | 5768 | 0.25000 | 0.34 |
| | 38 Trichloroethene | 130 | 5.212 | 5.212 | (1.050) | 1544 | 0.25000 | 0.33 |
| | 44 Dibromomethane | 93 | 5.565 | 5.565 | (1.121) | 1046 | 0.25000 | 0.35 |
| | 45 4-Methyl-2-Pentanone | 43 | 6.352 | 6.352 | (0.828) | 2297 | 0.50000 | 0.65 |
| | 46 cis-1,3-Dichloropropene | 75 | 6.168 | 6.168 | (1.242) | 1839 | 0.25000 | 0.25 |
| * | 47 Chlorobenzene-d5 | 117 | 7.671 | 7.671 | (1.000) | 653787 | 50.0000 | |
| $ | 48 Toluene-d8 | 98 | 6.401 | 6.401 | (0.834) | 6828 | 0.25000 | 0.42(T) |
| | 50 Toluene | 91 | 6.457 | 6.457 | (0.842) | 6778 | 0.25000 | 0.37 |
| | 52 2-Hexanone | 43 | 7.150 | 7.150 | (0.932) | 974 | 0.50000 | 0.40(T) |
| | 53 1,1,2-Trichloroethane | 83 | 6.847 | 6.847 | (0.893) | 1098 | 0.25000 | 0.30 |
| | 54 1,3-Dichloropropane | 76 | 6.993 | 6.993 | (0.912) | 2278 | 0.25000 | 0.31 |
| | 55 Dibromochloromethane | 129 | 7.184 | 7.184 | (0.936) | 1732 | 0.25000 | 0.33 |
| | 56 Tetrachloroethene | 164 | 6.933 | 6.933 | (0.904) | 1051 | 0.25000 | 0.28 |
| | 57 1,2-Dibromoethane | 107 | 7.278 | 7.278 | (0.949) | 1100 | 0.25000 | 0.24 |
| | 58 1-Chlorohexane | 55 | 7.668 | 7.668 | (1.544) | 6570 | 0.25000 | 1.96 |
| | 59 Chlorobenzene | 112 | 7.694 | 7.694 | (1.003) | 3981 | 0.25000 | 0.31 |
| | 60 1,1,1,2-Tetrachloroethane | 131 | 7.780 | 7.780 | (1.014) | 1245 | 0.25000 | 0.26 |
| | 61 Ethylbenzene | 106 | 7.810 | 7.810 | (1.018) | 1854 | 0.25000 | 0.30 |
| | 62 m,p-Xylenes | 106 | 7.915 | 7.915 | (1.032) | 5083 | 0.50000 | 0.65 |
| | 63 o-Xylene | 106 | 8.252 | 8.252 | (1.076) | 2471 | 0.25000 | 0.32 |
| | 64 Styrene | 104 | 8.297 | 8.297 | (1.082) | 3214 | 0.25000 | 0.24 |
| | 67 Isopropylbenzene | 105 | 8.575 | 8.575 | (1.118) | 5495 | 0.25000 | 0.31 |
| $ | 69 4-Bromofluorobenzene | 95 | 8.706 | 8.706 | (1.135) | 4271 | 0.25000 | 0.77 |
| * | 70 1,4-Dichlorobenzene-d4 | 152 | 9.662 | 9.662 | (1.000) | 348702 | 50.0000 | |
| | 71 1,2,3-Trichloropropane | 75 | 8.875 | 8.875 | (0.919) | 766 | 0.25000 | 0.19(M) |
| | 73 n-Propylbenzene | 91 | 8.931 | 8.931 | (0.924) | 5570 | 0.25000 | 0.28 |
| | 74 Bromobenzene | 156 | 8.826 | 8.826 | (0.913) | 1517 | 0.25000 | 0.26 |
| | 75 1,3,5-Trimethylbenzene | 105 | 9.081 | 9.081 | (0.940) | 4893 | 0.25000 | 0.34 |
| | 76 2-Chlorotoluene | 91 | 8.991 | 8.991 | (0.931) | 4890 | 0.25000 | 0.38 |
| | 77 4-Chlorotoluene | 91 | 9.107 | 9.107 | (0.943) | 3881 | 0.25000 | 0.26 |
| | 78 tert-Butylbenzene | 119 | 9.343 | 9.343 | (0.967) | 4059 | 0.25000 | 0.34 |
| | 79 1,2,4-Trimethylbenzene | 105 | 9.392 | 9.392 | (0.972) | 5202 | 0.25000 | 0.34 |
| | 81 sec-Butylbenzene | 105 | 9.523 | 9.523 | (0.986) | 4818 | 0.25000 | 0.31 |
| | 82 p-Isopropyltoluene | 119 | 9.662 | 9.662 | (1.000) | 4406 | 0.25000 | 0.31 |
| | 83 1,3-Dichlorobenzene | 146 | 9.621 | 9.621 | (0.996) | 3005 | 0.25000 | 0.31 |
| | 84 1,4-Dichlorobenzene | 146 | 9.684 | 9.684 | (1.002) | 3674 | 0.25000 | 0.35 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 87 | n-Butylbenzene | 91 | 10.033 | 10.033 (1.038) | 1595 | 0.25000 | 1.89 |
| 88 | 1,2-Dichlorobenzene | 146 | 10.010 | 10.010 (1.036) | 2937 | 0.25000 | 0.30 |

| | Compounds | QUANT SIG MASS | RT | EXP RT | REL RT | RESPONSE | AMOUNTS CAL-AMT ( ug/l) | ON-COL ( ug/l) |
|---|---|---|---|---|---|---|---|---|
| | 91 Hexachlorobutadiene | 225 | 11.484 | 11.484 | (1.189) | 726 | 0.25000 | 0.21(M) |
| | 92 Naphthalene | 128 | 11.607 | 11.607 | (1.201) | 1969 | 0.25000 | 0.14 |
| | 93 1,2,3-Trichlorobenzene | 180 | 11.769 | 11.769 | (1.218) | 1816 | 0.25000 | 0.30(M) |
| M | 94 1,2-Dichloroethylene (total) | 96 | | | | 2704 | 0.50000 | |
| M | 95 Xylenes (total) | 106 | | | | 7554 | 0.75000 | |
| | 141 Cyclohexane | 56 | 4.125 | 4.125 | (0.987) | 1235 | 0.25000 | 1.51(M) |
| | 138 Freon TF | 101 | 1.917 | 1.917 | (0.459) | 765 | 0.25000 | 0.22(M) |

## QC Flag Legend

T - Target compound detected outside RT window.
M - Compound response manually integrated.




Data File: \\NAHSTNS005\Target\chem\voa6,i\X221216,b\X121602,D
Date : 16-DEC-2022 11:38
Client ID: VSTD000,25
Sample Info: VSTD000,25;VSTD000,25;1;1;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6,i
Operator: PC
Column diameter: 0.18

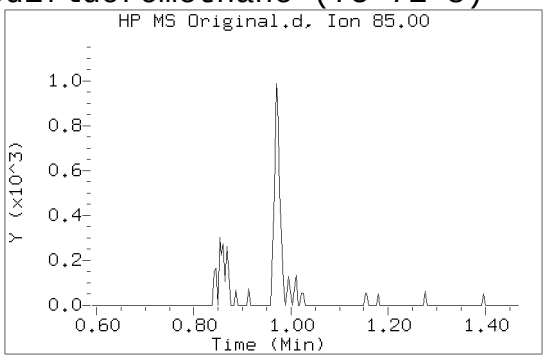
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121602.D
Inj Date : 16-DEC-2022 11:38
InstruID : voa6.i
LabSampID : VSTD000.25

## Dichlorodifluoromethane (75-71-8)

Reason Code:

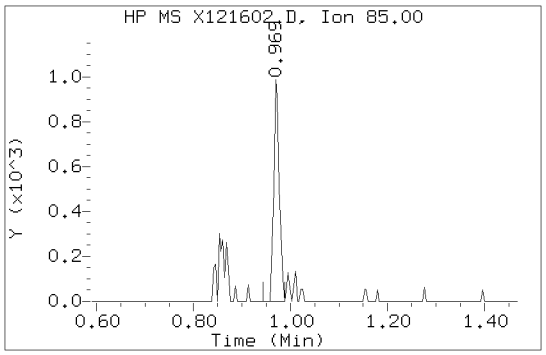
BEFORE

MASS
50
AREA
1420
HEIGHT
1809
16-Dec-2022
11:54
ALSHS
Server



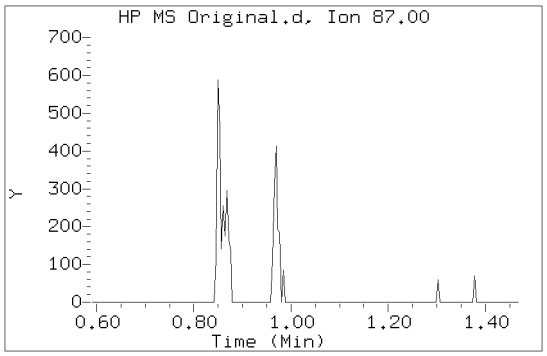

AFTER

MASS
85
AREA
801
HEIGHT
987
27-Dec-2022
16:07
ALSHS
Ser



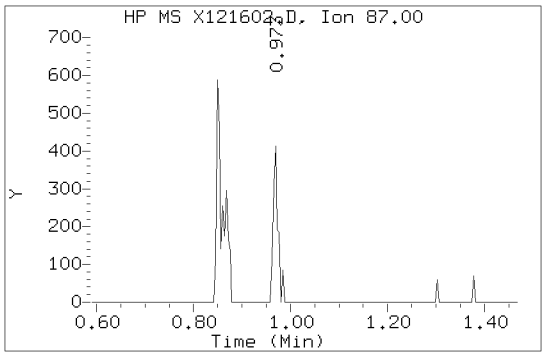

BEFORE

MASS
52
AREA
731
HEIGHT
740
16-Dec-2022
11:54
ALSHS
Server




AFTER

MASS
87
AREA
0
HEIGHT
0
27-Dec-2022
16:07
ALSHS
Ser

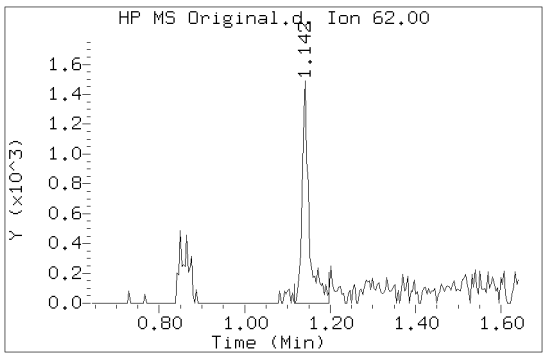



## Vinyl Chloride (75-01-4)

Reason Code:

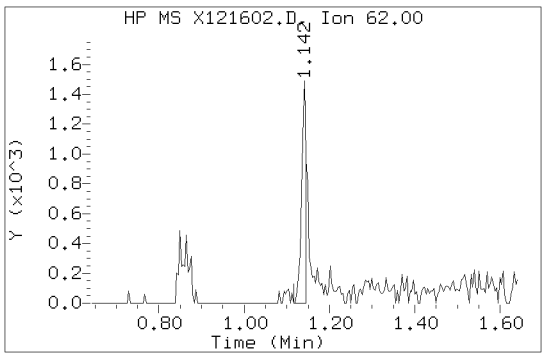
BEFORE

MASS
94
AREA
1572
HEIGHT
983
16-Dec-2022
11:54
ALSHS
Server



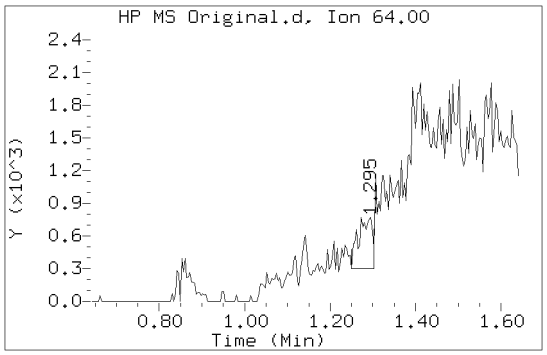

AFTER

MASS
62
AREA
1134
HEIGHT
1490
27-Dec-2022
16:07
ALSHS
Ser



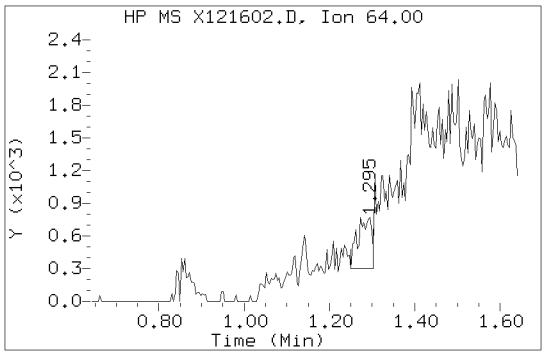

BEFORE

MASS
96
AREA
1330
HEIGHT
961
16-Dec-2022
11:54
ALSHS
Server




AFTER

MASS
64
AREA
1053
HEIGHT
470
27-Dec-2022
16:07
ALSHS
Ser

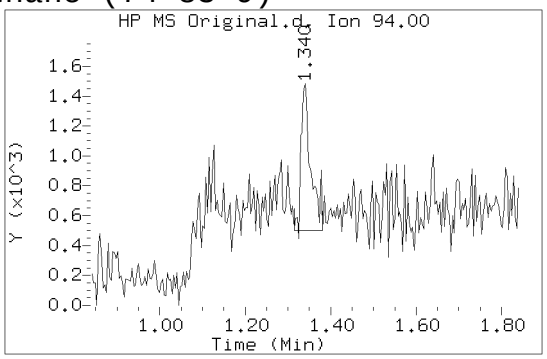


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Inj Date : 16-DEC-2022 11:38
InstruID : voa6.i
LabSampID : VSTD000.25

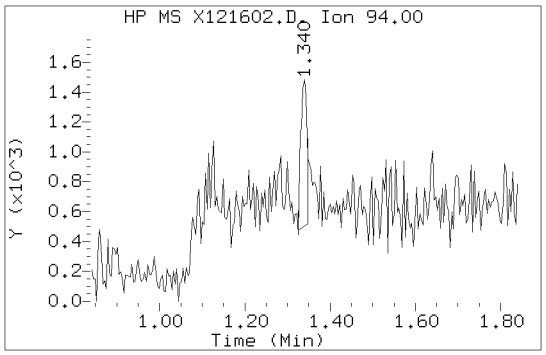
## Bromomethane (74-83-9)

Reason Code:

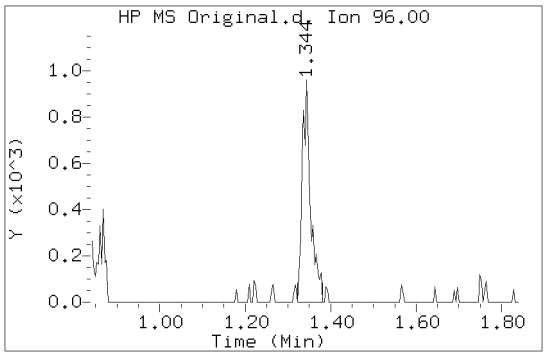
BEFORE
MASS
64
AREA
0
HEIGHT
0
16-Dec-2022
11:54
ALSHS
Server



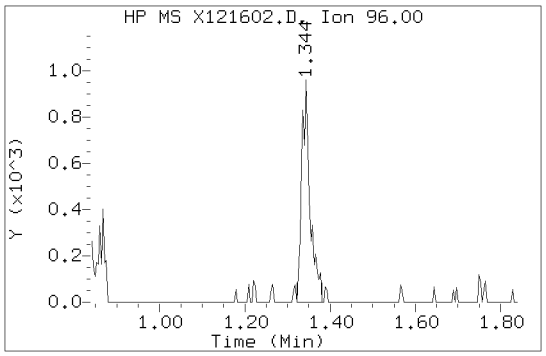

AFTER
MASS
94
AREA
1009
HEIGHT
977
27-Dec-2022
16:07
ALSHS
Ser




BEFORE
MASS
66
AREA
0
HEIGHT
0
16-Dec-2022
11:54
ALSHS
Server



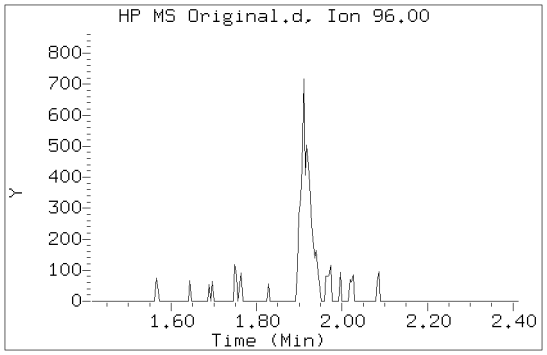

AFTER
MASS
96
AREA
1330
HEIGHT
961
27-Dec-2022
16:07
ALSHS
Ser



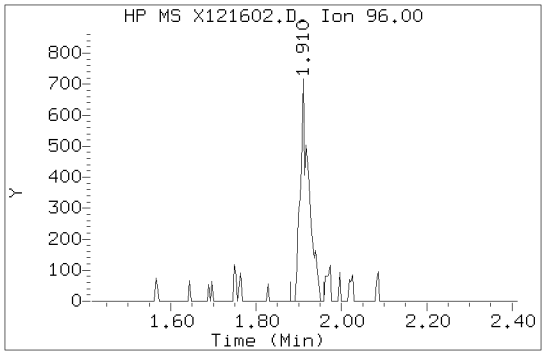

## 1,1-Dichloroethene (75-35-4)

Reason Code:

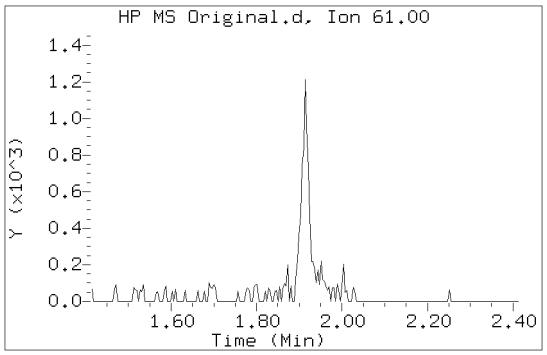
BEFORE
MASS
142
AREA
1106
HEIGHT
699
16-Dec-2022
11:54
ALSHS
Server



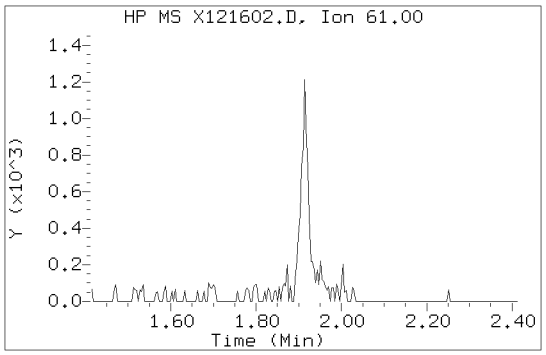

AFTER
MASS
96
AREA
1010
HEIGHT
717
27-Dec-2022
16:07
ALSHS
Ser




BEFORE
MASS
127
AREA
0
HEIGHT
0
16-Dec-2022
11:54
ALSHS
Server




AFTER
MASS
61
AREA
0
HEIGHT
0
27-Dec-2022
16:07
ALSHS
Ser



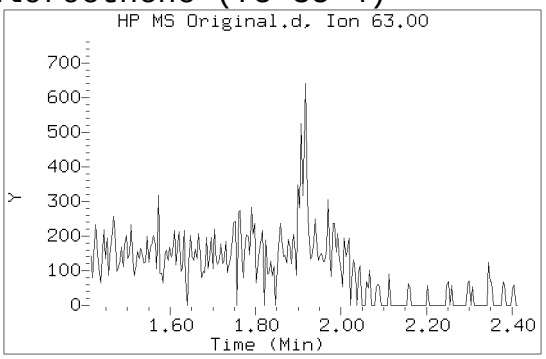
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Inj Date : 16-DEC-2022 11:38
InstruID : voa6.i
LabSampID : VSTD000.25

## 1,1-Dichloroethene (75-35-4)

Reason Code:

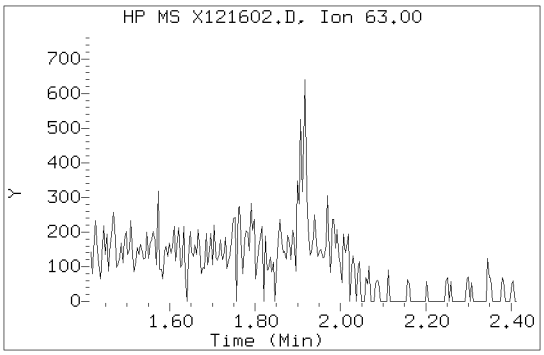
**BEFORE**

MASS
141
AREA
0
HEIGHT
0
16-Dec-2022
11:54
ALSHS
Server




**AFTER**

MASS
63
AREA
0
HEIGHT
0
27-Dec-2022
16:07
ALSHS
Ser

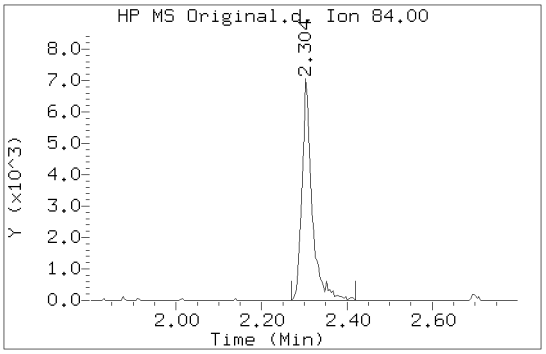



## Methylene Chloride (75-09-2)

Reason Code:

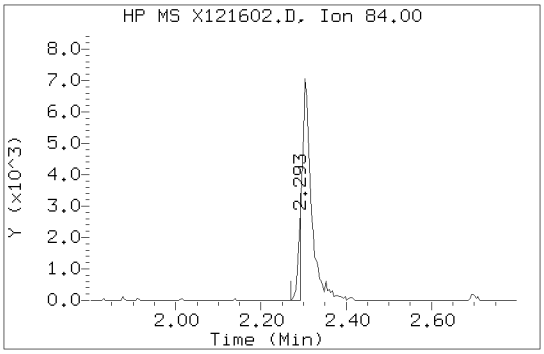
**BEFORE**

MASS
84
AREA
11777
HEIGHT
7057
16-Dec-2022
11:54
ALSHS
Server



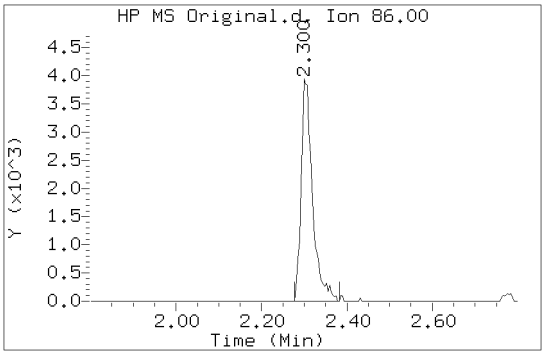

**AFTER**

MASS
84
AREA
1436
HEIGHT
2786
27-Dec-2022
16:07
ALSHS
Ser



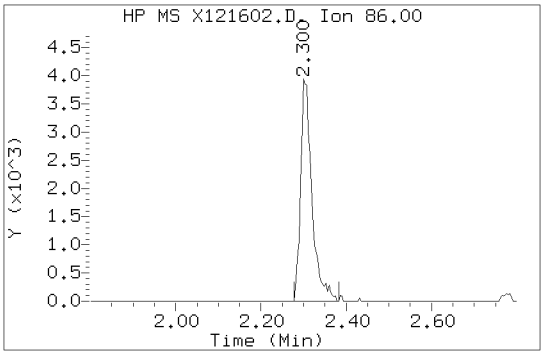

**BEFORE**

MASS
86
AREA
7453
HEIGHT
3944
16-Dec-2022
11:54
ALSHS
Server



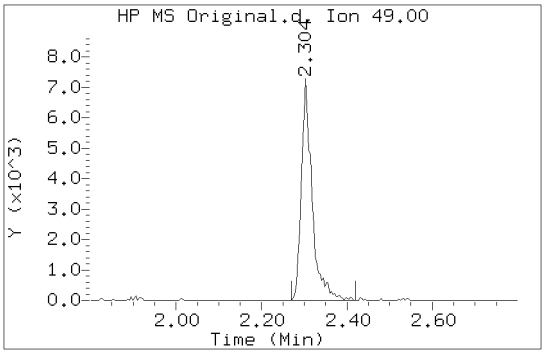

**AFTER**

MASS
86
AREA
7453
HEIGHT
3944
27-Dec-2022
16:07
ALSHS
Ser



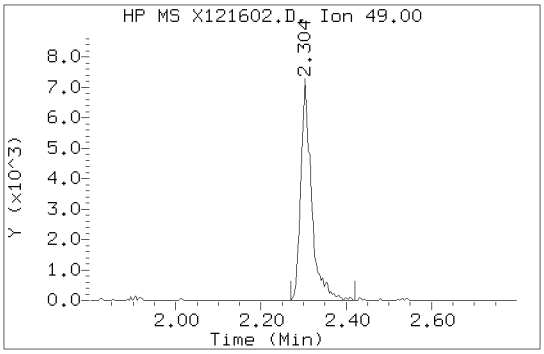

**BEFORE**

MASS
49
AREA
12974
HEIGHT
7289
16-Dec-2022
11:54
ALSHS
Server




**AFTER**

MASS
49
AREA
12974
HEIGHT
7289
27-Dec-2022
16:07
ALSHS
Ser

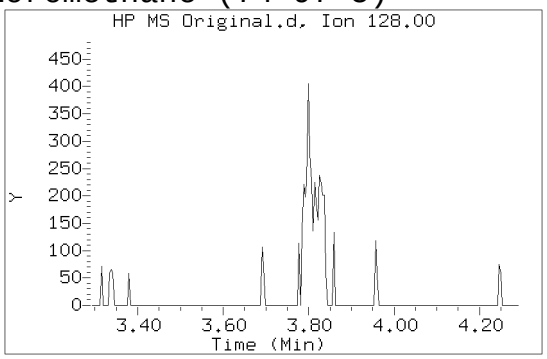


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121602.D
Inj Date : 16-DEC-2022 11:38
InstruID : voa6.i
LabSampID : VSTD000.25

## Bromochloromethane (74-97-5)

### BEFORE

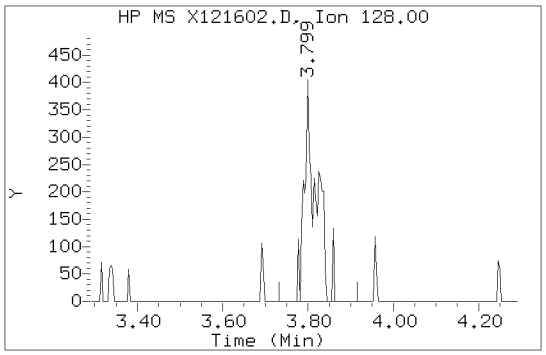
MASS
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AREA
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HEIGHT
854
16-Dec-2022
11:54
ALSHS
Server




### AFTER

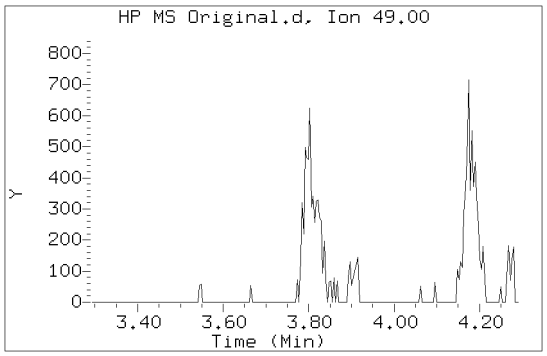
MASS
128
AREA
802
HEIGHT
405
27-Dec-2022
16:07
ALSHS
Ser

Reason Code:



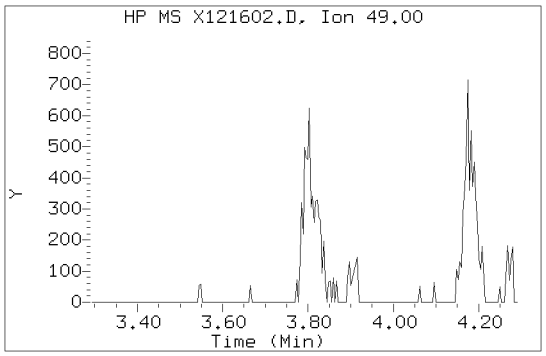

### BEFORE

MASS
61
AREA
1975
HEIGHT
828
16-Dec-2022
11:54
ALSHS
Server



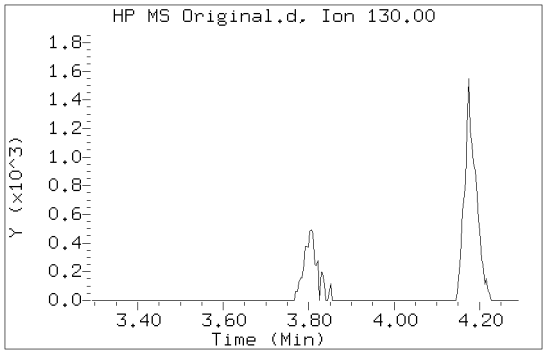

### AFTER

MASS
49
AREA
0
HEIGHT
0
27-Dec-2022
16:07
ALSHS
Ser



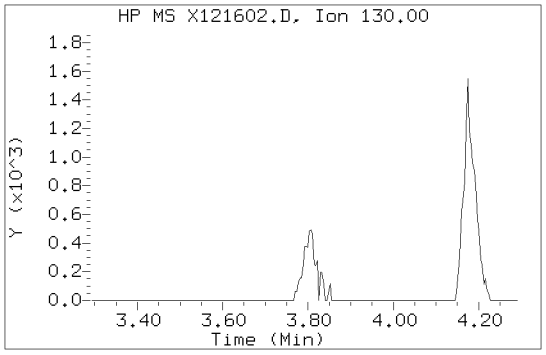

### BEFORE

MASS
98
AREA
1027
HEIGHT
608
16-Dec-2022
11:54
ALSHS
Server




### AFTER

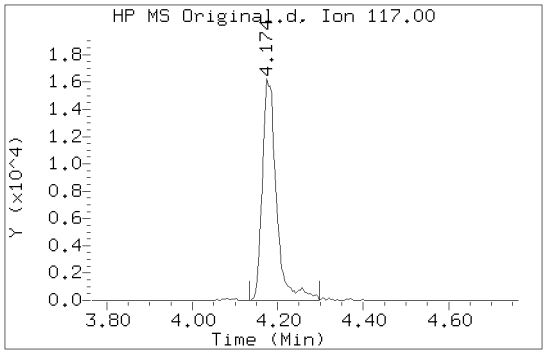
MASS
130
AREA
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HEIGHT
0
27-Dec-2022
16:07
ALSHS
Ser




## Carbon Tetrachloride (56-23-5)

### BEFORE

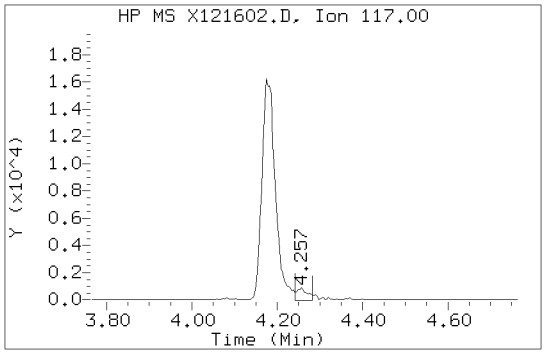
MASS
97
AREA
1700
HEIGHT
1016
16-Dec-2022
11:54
ALSHS
Server




### AFTER

MASS
117
AREA
1685
HEIGHT
944
27-Dec-2022
16:07
ALSHS
Ser

Reason Code:



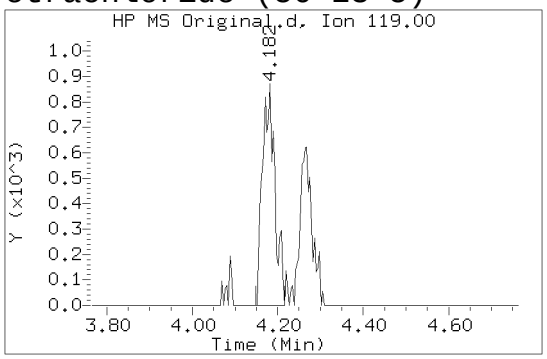
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Inj Date : 16-DEC-2022 11:38
InstruID : voa6.i
LabSampID : VSTD000.25

## Carbon Tetrachloride (56-23-5)

Reason Code:

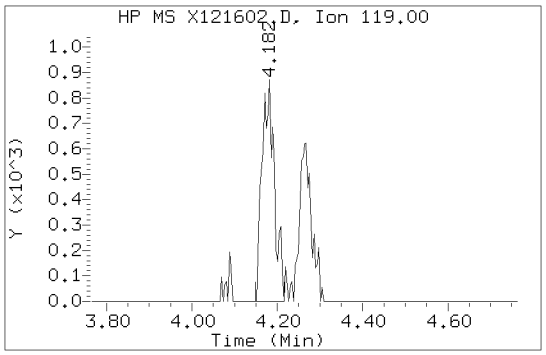
BEFORE

MASS
99
AREA
207130
HEIGHT
91368
16-Dec-2022
11:54
ALSHS
Server




AFTER

MASS
119
AREA
1748
HEIGHT
872
27-Dec-2022
16:07
ALSHS
Ser

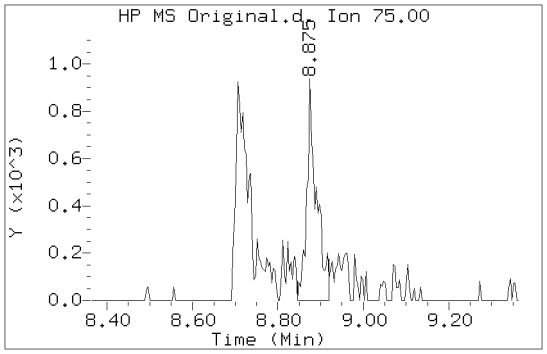



## 1,2,3-Trichloropropane (96-18-4)

Reason Code:

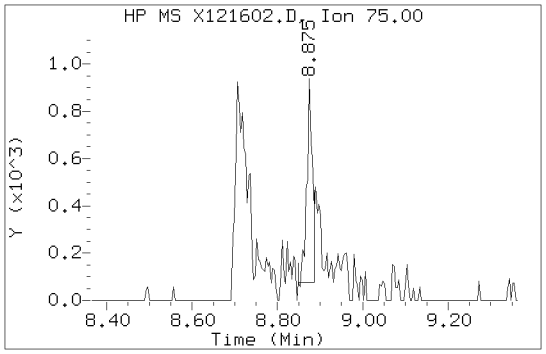
BEFORE

MASS
152
AREA
348702
HEIGHT
242350
16-Dec-2022
11:54
ALSHS
Server



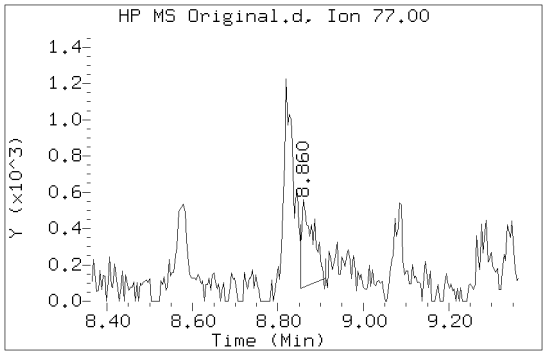

AFTER

MASS
75
AREA
766
HEIGHT
862
27-Dec-2022
16:07
ALSHS
Ser



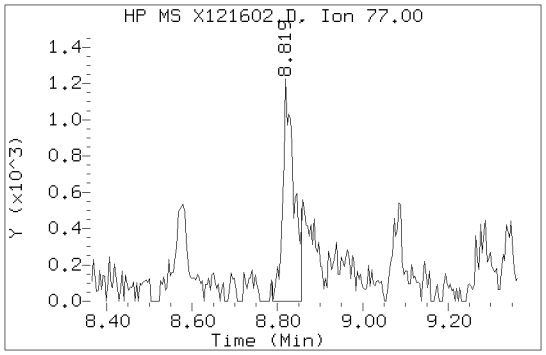

BEFORE

MASS
115
AREA
184413
HEIGHT
133835
16-Dec-2022
11:54
ALSHS
Server




AFTER

MASS
77
AREA
2223
HEIGHT
1225
27-Dec-2022
16:07
ALSHS
Ser

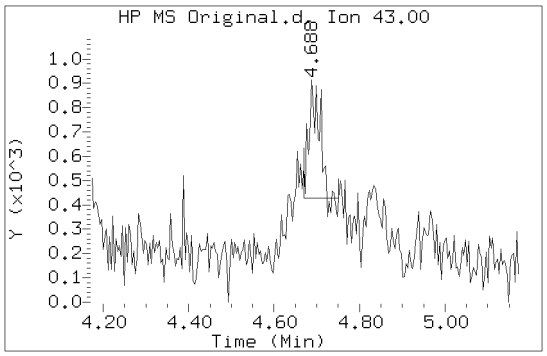



## Isobutyl Alcohol (78-83-1)

Reason Code:

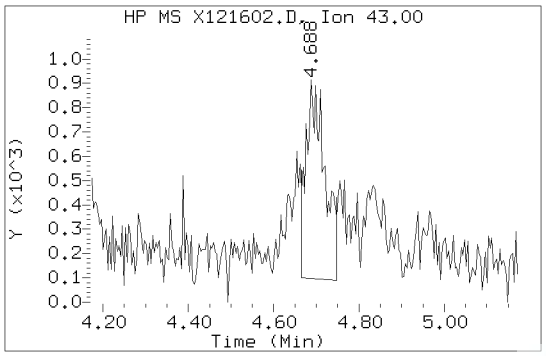
BEFORE

MASS
75
AREA
1475
HEIGHT
938
16-Dec-2022
11:54
ALSHS
Server




AFTER

MASS
43
AREA
2537
HEIGHT
816
27-Dec-2022
16:07
ALSHS
Ser

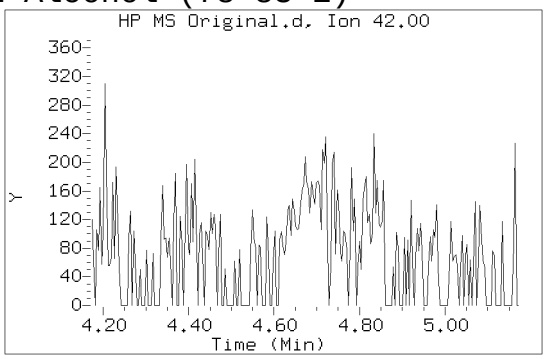


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121602.D
Inj Date : 16-DEC-2022 11:38
InstruID : voa6.i
LabSampID : VSTD000.25

## Isobutyl Alcohol (78-83-1)

**BEFORE**

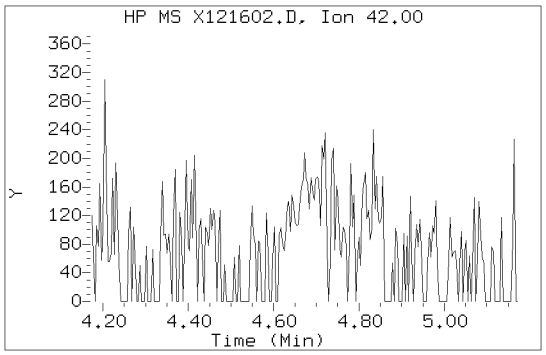
MASS
77
AREA
888
HEIGHT
483
16-Dec-2022
11:54
ALSHS
Server




Reason Code:

**AFTER**

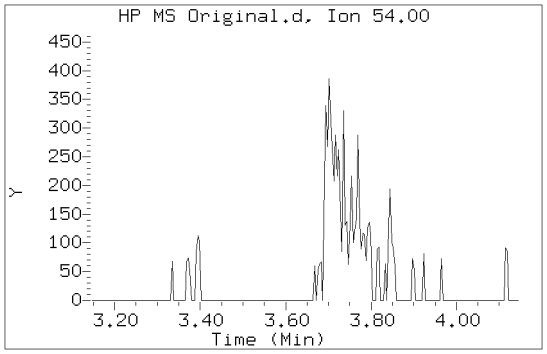
MASS
42
AREA
0
HEIGHT
0
27-Dec-2022
16:07
ALSHS
Ser




## Propionitrile (107-12-0)

**BEFORE**

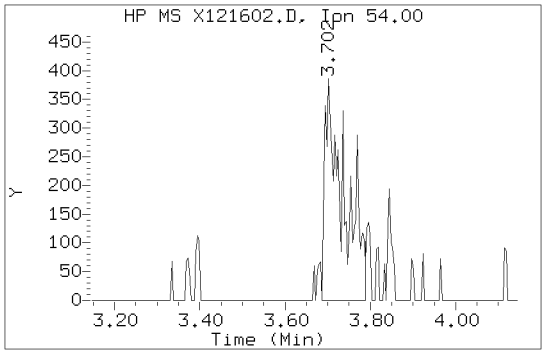
MASS
91
AREA
3881
HEIGHT
1822
16-Dec-2022
11:54
ALSHS
Server




Reason Code:

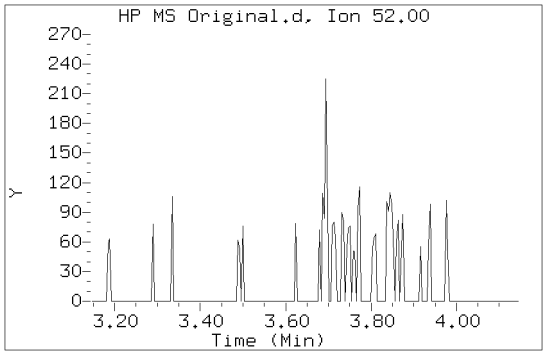
**AFTER**

MASS
54
AREA
1165
HEIGHT
386
27-Dec-2022
16:07
ALSHS
Ser



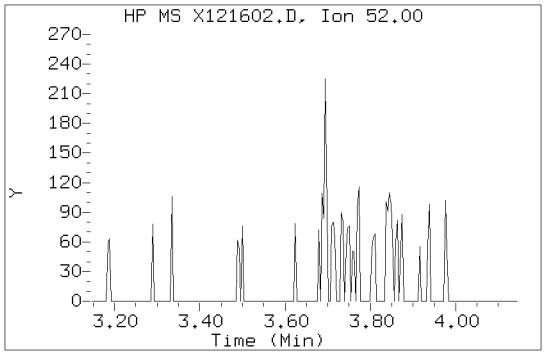

**BEFORE**

MASS
126
AREA
1511
HEIGHT
914
16-Dec-2022
11:54
ALSHS
Server




**AFTER**

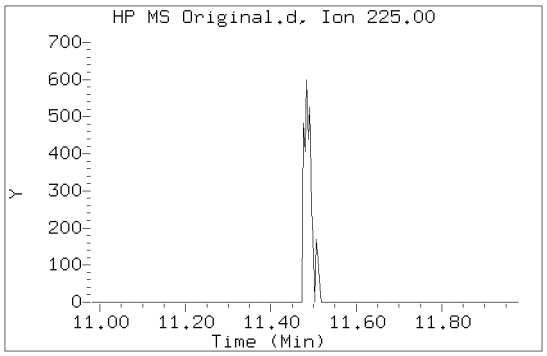
MASS
52
AREA
0
HEIGHT
0
27-Dec-2022
16:07
ALSHS
Ser




## Hexachlorobutadiene (87-68-3)

**BEFORE**

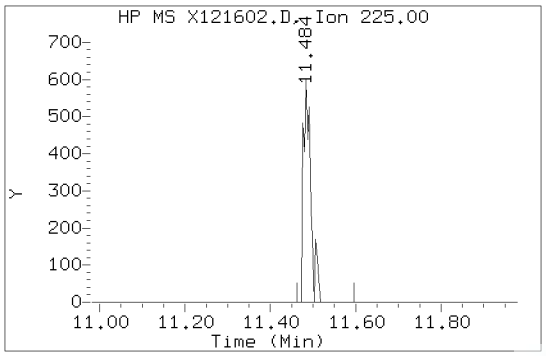
MASS
155
AREA
0
HEIGHT
0
16-Dec-2022
11:54
ALSHS
Server




Reason Code:

**AFTER**

MASS
225
AREA
726
HEIGHT
599
27-Dec-2022
16:07
ALSHS
Ser

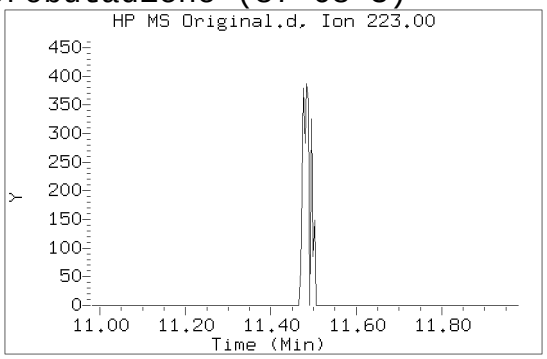


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121602.D
Inj Date : 16-DEC-2022 11:38
InstruID : voa6.i
LabSampID : VSTD000.25

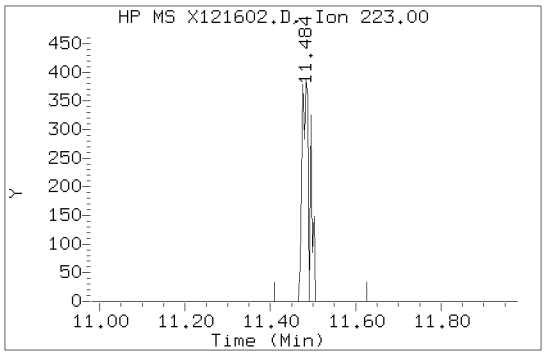
## Hexachlorobutadiene (87-68-3)

Reason Code:

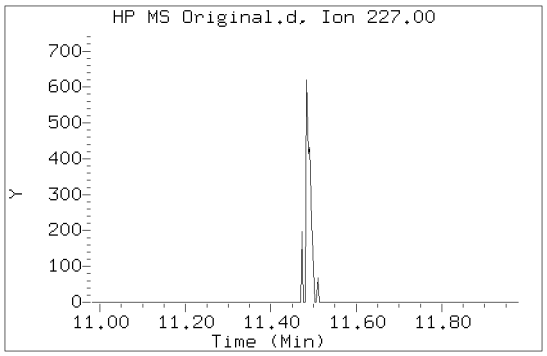
BEFORE
MASS
157
AREA
0
HEIGHT
0
16-Dec-2022
11:54
ALSHS
Server



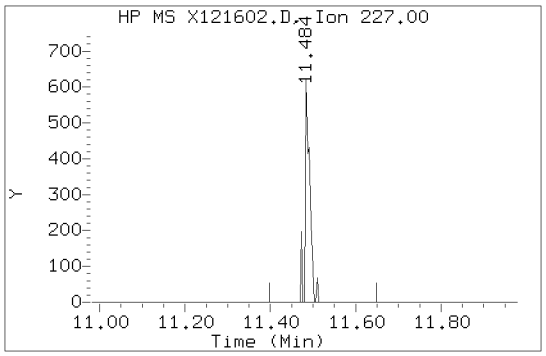

AFTER
MASS
223
AREA
502
HEIGHT
387
27-Dec-2022
16:07
ALSHS
Ser




BEFORE
MASS
75
AREA
0
HEIGHT
0
16-Dec-2022
11:54
ALSHS
Server



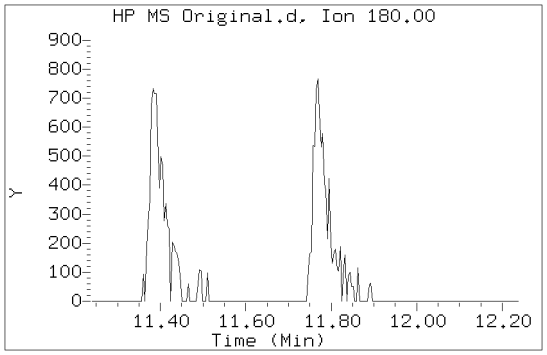

AFTER
MASS
227
AREA
469
HEIGHT
620
27-Dec-2022
16:07
ALSHS
Ser



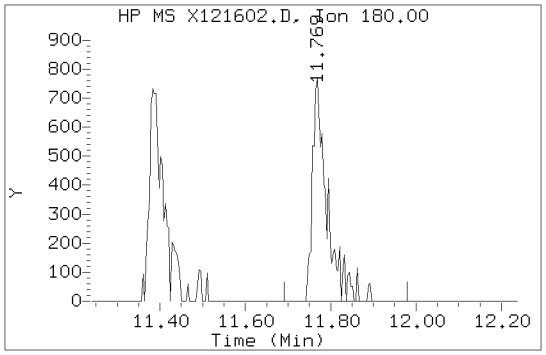

## 1,2,3-Trichlorobenzene (87-61-6)

Reason Code:

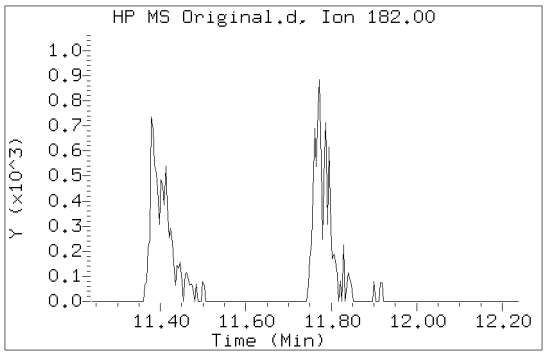
BEFORE
MASS
225
AREA
0
HEIGHT
0
16-Dec-2022
11:54
ALSHS
Server



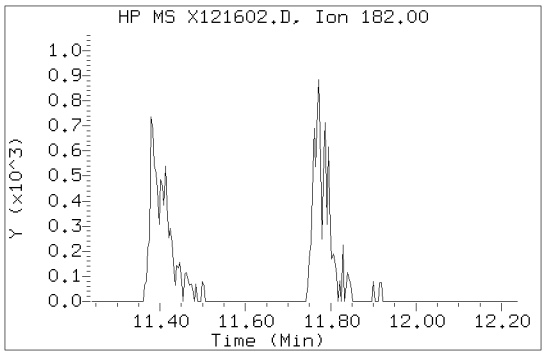

AFTER
MASS
180
AREA
1816
HEIGHT
766
27-Dec-2022
16:07
ALSHS
Ser




BEFORE
MASS
223
AREA
0
HEIGHT
0
16-Dec-2022
11:54
ALSHS
Server




AFTER
MASS
182
AREA
0
HEIGHT
0
27-Dec-2022
16:07
ALSHS
Ser

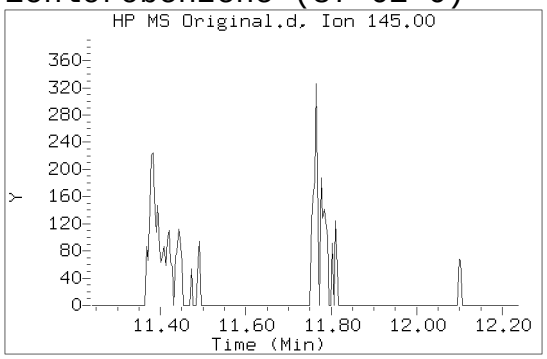


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121602.D
Inj Date : 16-DEC-2022 11:38
InstruID : voa6.i
LabSampID : VSTD000.25

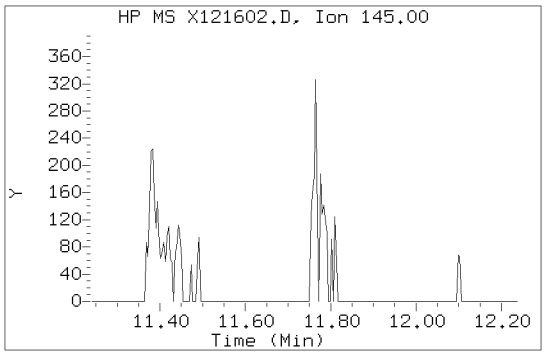
## 1,2,3-Trichlorobenzene (87-61-6)

Reason Code:

BEFORE
MASS
227
AREA
0
HEIGHT
0
16-Dec-2022
11:54
ALSHS
Server



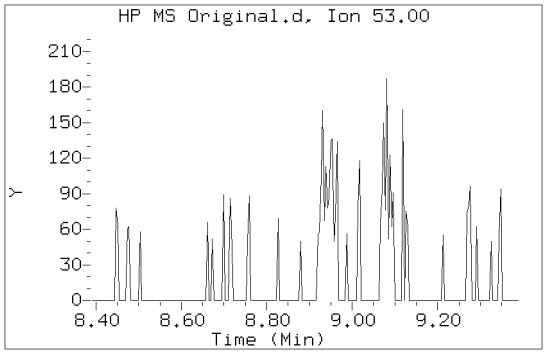

AFTER
MASS
145
AREA
0
HEIGHT
0
27-Dec-2022
16:07
ALSHS
Ser



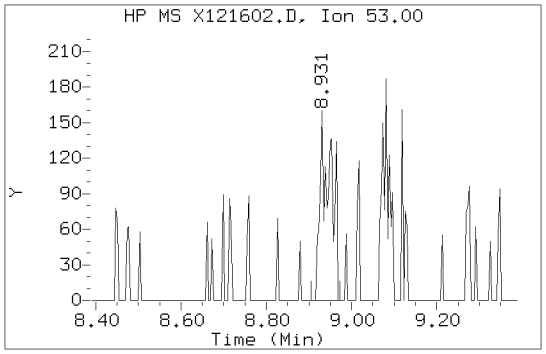

## trans-1,4-Dichloro-2-butene (110-57-6)

Reason Code:

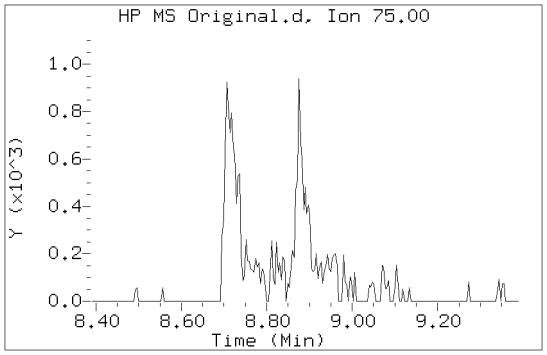
BEFORE
MASS
53
AREA
0
HEIGHT
0
16-Dec-2022
11:54
ALSHS
Server



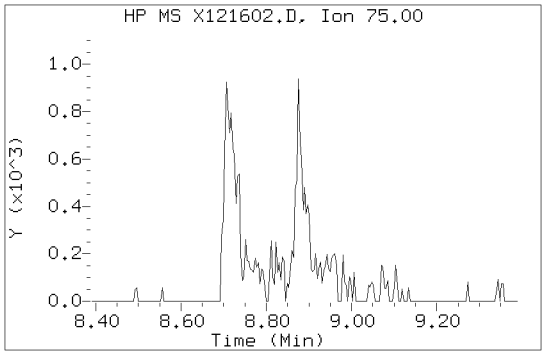

AFTER
MASS
53
AREA
280
HEIGHT
160
27-Dec-2022
16:07
ALSHS
Ser




BEFORE
MASS
88
AREA
0
HEIGHT
0
16-Dec-2022
11:54
ALSHS
Server



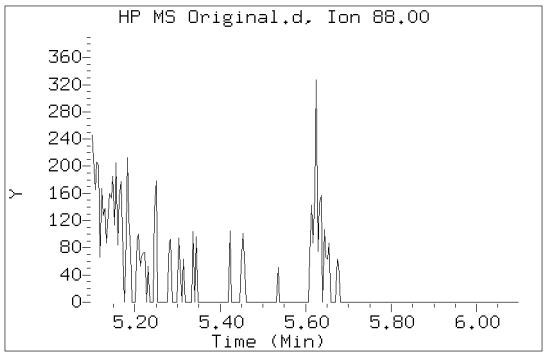

AFTER
MASS
75
AREA
0
HEIGHT
0
27-Dec-2022
16:07
ALSHS
Ser



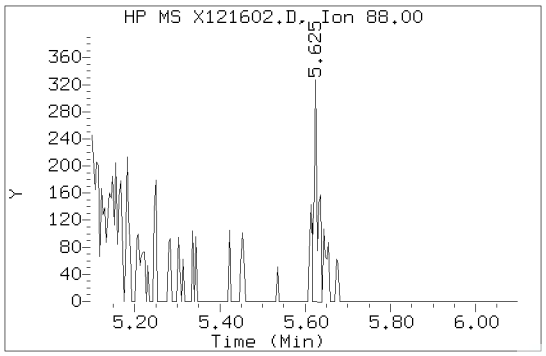

## 1,4-Dioxane ()

Reason Code:

BEFORE
MASS
57
AREA
0
HEIGHT
0
16-Dec-2022
11:54
ALSHS
Server




AFTER
MASS
88
AREA
214
HEIGHT
327
27-Dec-2022
16:07
ALSHS
Ser



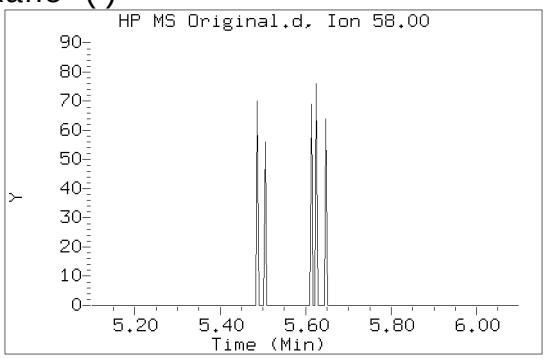
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121602.D
Inj Date : 16-DEC-2022 11:38
InstruID : voa6.i
LabSampID : VSTD000.25

## 1,4-Dioxane ()

Reason Code:

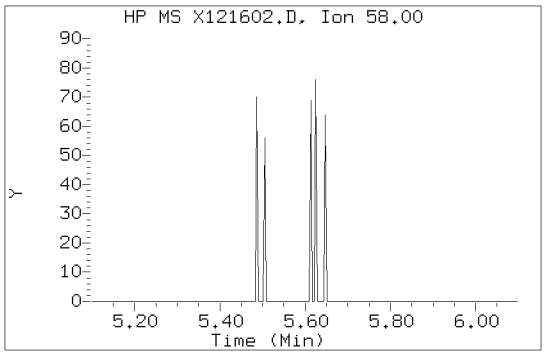
**BEFORE**

MASS
41
AREA
0
HEIGHT
0
16-Dec-2022
11:54
ALSHS
Server




**AFTER**

MASS
58
AREA
0
HEIGHT
0
27-Dec-2022
16:07
ALSHS
Ser

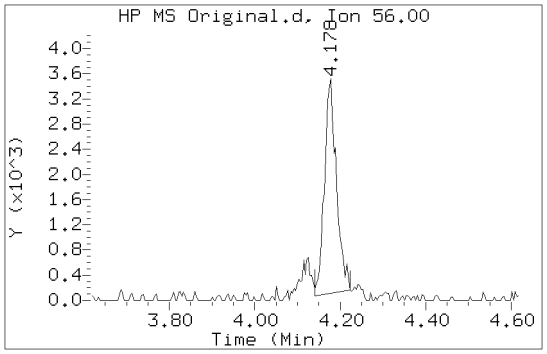



## Cyclohexane (110-82-7)

Reason Code:

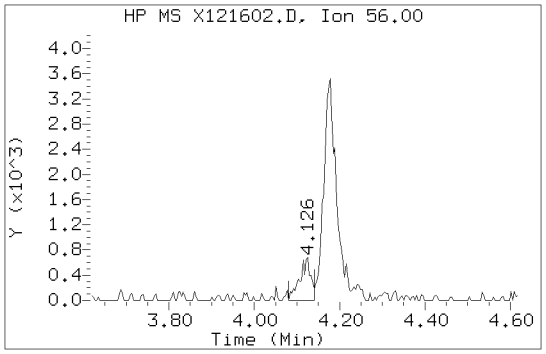
**BEFORE**

MASS
42
AREA
0
HEIGHT
0
16-Dec-2022
11:54
ALSHS
Server



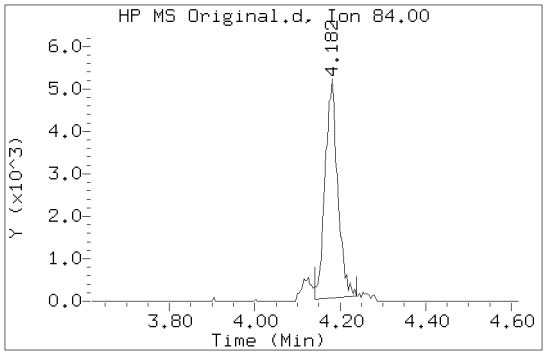

**AFTER**

MASS
56
AREA
1235
HEIGHT
682
27-Dec-2022
16:07
ALSHS
Ser



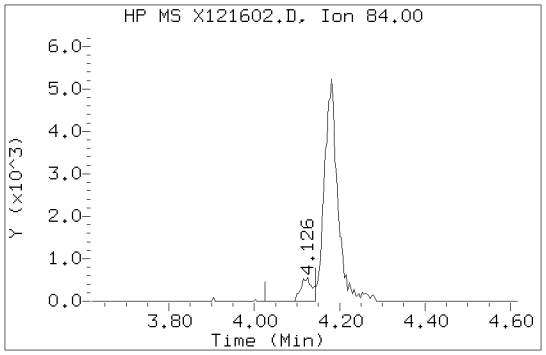

**BEFORE**

MASS
71
AREA
0
HEIGHT
0
16-Dec-2022
11:54
ALSHS
Server




**AFTER**

MASS
84
AREA
1062
HEIGHT
557
27-Dec-2022
16:07
ALSHS
Ser

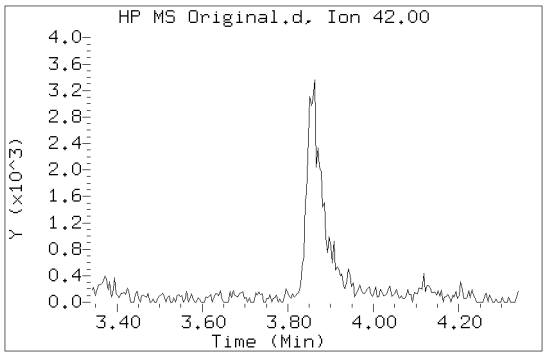



## Tetrahydrofuran (109-99-9)

Reason Code:

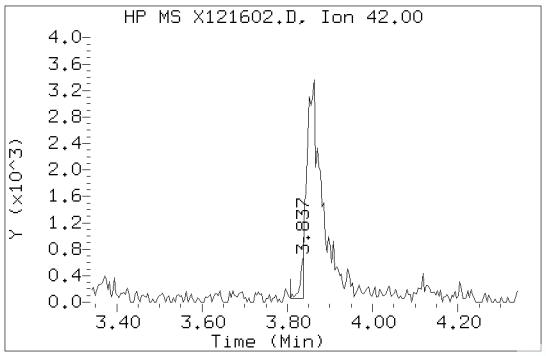
**BEFORE**

MASS
101
AREA
0
HEIGHT
0
16-Dec-2022
11:54
ALSHS
Server




**AFTER**

MASS
42
AREA
358
HEIGHT
628
27-Dec-2022
16:07
ALSHS
Ser

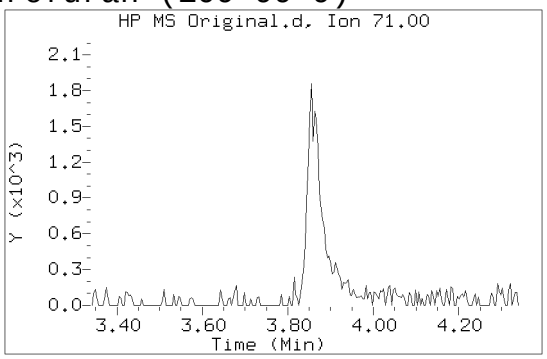


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121602.D
Inj Date : 16-DEC-2022 11:38
InstruID : voa6.i
LabSampID : VSTD000.25

## Tetrahydrofuran (109-99-9)

### BEFORE

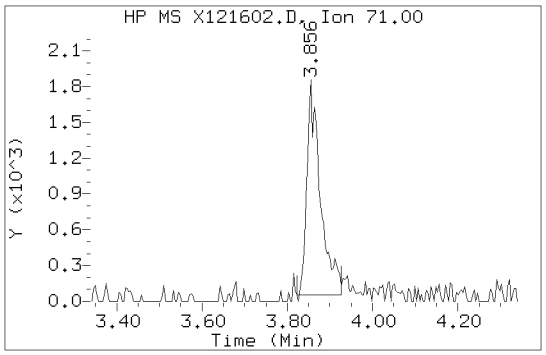
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16-Dec-2022
11:54
ALSHS
Server




Reason Code:

### AFTER

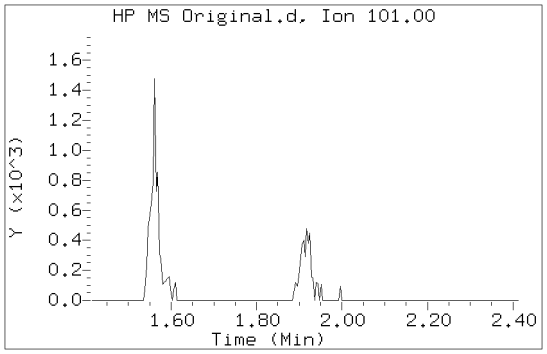
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27-Dec-2022
16:07
ALSHS
Ser




## Freon TF (76-13-1)

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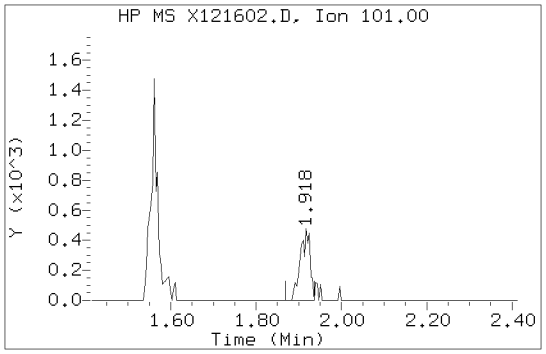
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Server




Reason Code:

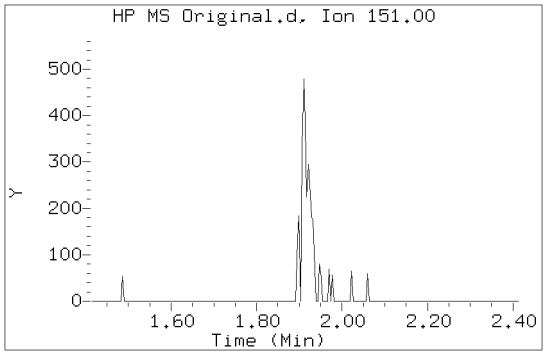
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16:07
ALSHS
Ser



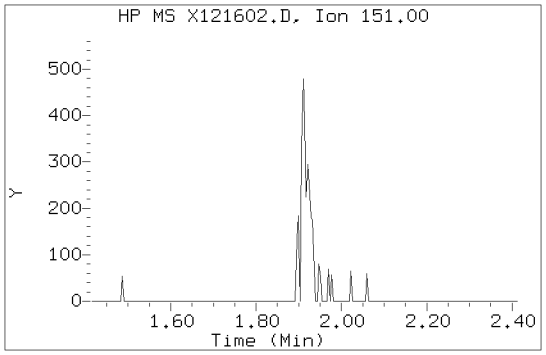

### BEFORE

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16-Dec-2022
11:54
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Server




### AFTER

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HEIGHT
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27-Dec-2022
16:07
ALSHS
Ser



Data File: \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D  Page 1
Report Date: 27-Dec-2022 16:07

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Lab Smp Id: VSTD000.5  Client Smp ID: VSTD000.5
Inj Date  : 16-DEC-2022 12:20
Operator  : PC  Inst ID: voa6.i
Smp Info  : VSTD000.5;VSTD000.5;1;2;
Misc Info : V6;WATER;0;1;
Comment   :
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Meth Date : 27-Dec-2022 16:07 voa6.i  Quant Type: ISTD
Cal Date  : 16-DEC-2022 11:38  Cal File: X121602.D
Als bottle: 4  Calibration Sample, Level: 2
Dil Factor: 1.00000
Integrator: HP RTE  Compound Sublist: 08260V6.sub
Target Version:  4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

| Name | Value | Description |
|---|---|---|
| DF | 1.000 | Dilution Factor |
| Uf | 5.000 | ng unit correction factor |
| Vo | 5.000 | sample purged |
| Cpnd Variable | | Local Compound Variable |

| | Compounds | QUANT SIG MASS | RT | EXP RT | REL RT | RESPONSE | AMOUNTS CAL-AMT ( ug/l) | ON-COL ( ug/l) |
|---|---|---|---|---|---|---|---|---|
| * 1 | Pentafluorobenzene | 168 | 4.178 | 4.178 | (1.000) | 461469 | 50.0000 | |
| 135 | 1,4-Dioxane | 88 | 5.625 | 5.625 | (1.346) | 462 | 10.0000 | 10.95(M) |
| 140 | 1,3-Butadiene | 54 | 1.164 | 1.164 | (0.279) | 1793 | 0.50000 | 0.56(M) |
| 25 | Methacrylonitrile | 41 | 3.848 | 3.848 | (0.921) | 2066 | 0.50000 | 0.63(M) |
| 12 | Isobutyl Alcohol | 43 | 4.695 | 4.695 | (1.124) | 5178 | 10.0000 | 9.97(M) |
| 13 | Acetonitrile | 39 | 2.210 | 2.210 | (0.529) | 2204 | 5.00000 | 5.24(M) |
| 14 | Allyl Chloride | 41 | 2.206 | 2.206 | (0.528) | 4574 | 0.50000 | 0.57(M) |
| 4 | Propionitrile | 54 | 3.686 | 3.686 | (0.882) | 2777 | 5.00000 | 5.89(M) |
| 136 | n-Hexane | 57 | 2.772 | 2.772 | (0.664) | 1909 | 0.50000 | 0.57(M) |
| 72 | trans-1,4-Dichloro-2-butene | 53 | 8.931 | 8.931 | (1.165) | 792 | 0.50000 | 0.56(M) |
| 23 | Chloroprene | 53 | 1.771 | 1.771 | (0.424) | 900 | 0.50000 | 0.57(M) |
| 145 | alpha-Methylstyrene | 118 | 9.272 | 9.272 | (0.960) | 4701 | 0.50000 | 0.60 |
| 200 | Dimethyl Disulfide | 94 | 6.202 | 6.202 | (0.809) | 5153 | 0.50000 | 0.59(M) |
| 139 | Diethyl ether | 59 | 1.760 | 1.760 | (0.421) | 1864 | 0.50000 | 0.60 |
| 130 | Ethyl Acetate | 43 | 3.679 | 3.679 | (0.881) | 2065 | 0.50000 | 0.57(M) |
| 40 | Methyl Methacrylate | 41 | 5.628 | 5.628 | (1.347) | 1788 | 0.50000 | 0.56(M) |
| 49 | Ethyl Methacrylate | 69 | 6.727 | 6.727 | (1.355) | 1935 | 0.50000 | 0.59(M) |
| 132 | n-Butanol | 56 | 5.291 | 5.291 | (1.266) | 622 | 10.0000 | 50.83(M) |
| 142 | Tetrahydrofuran | 42 | 3.840 | 3.840 | (0.919) | 900 | 1.00000 | (M) |
| 150 | Allyl alcohol | 57 | 2.772 | 2.772 | (0.664) | 3089 | 10.0000 | 17.23 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 166 1,2,3-Trimethylbenzene | 105 | 9.733 | 9.733 (1.007) | 9626 | 0.50000 | 0.57(M) |
| 131 Methyl Acrylate | 55 | 3.743 | 3.743 (0.896) | 1765 | 0.50000 | 0.56(M) |

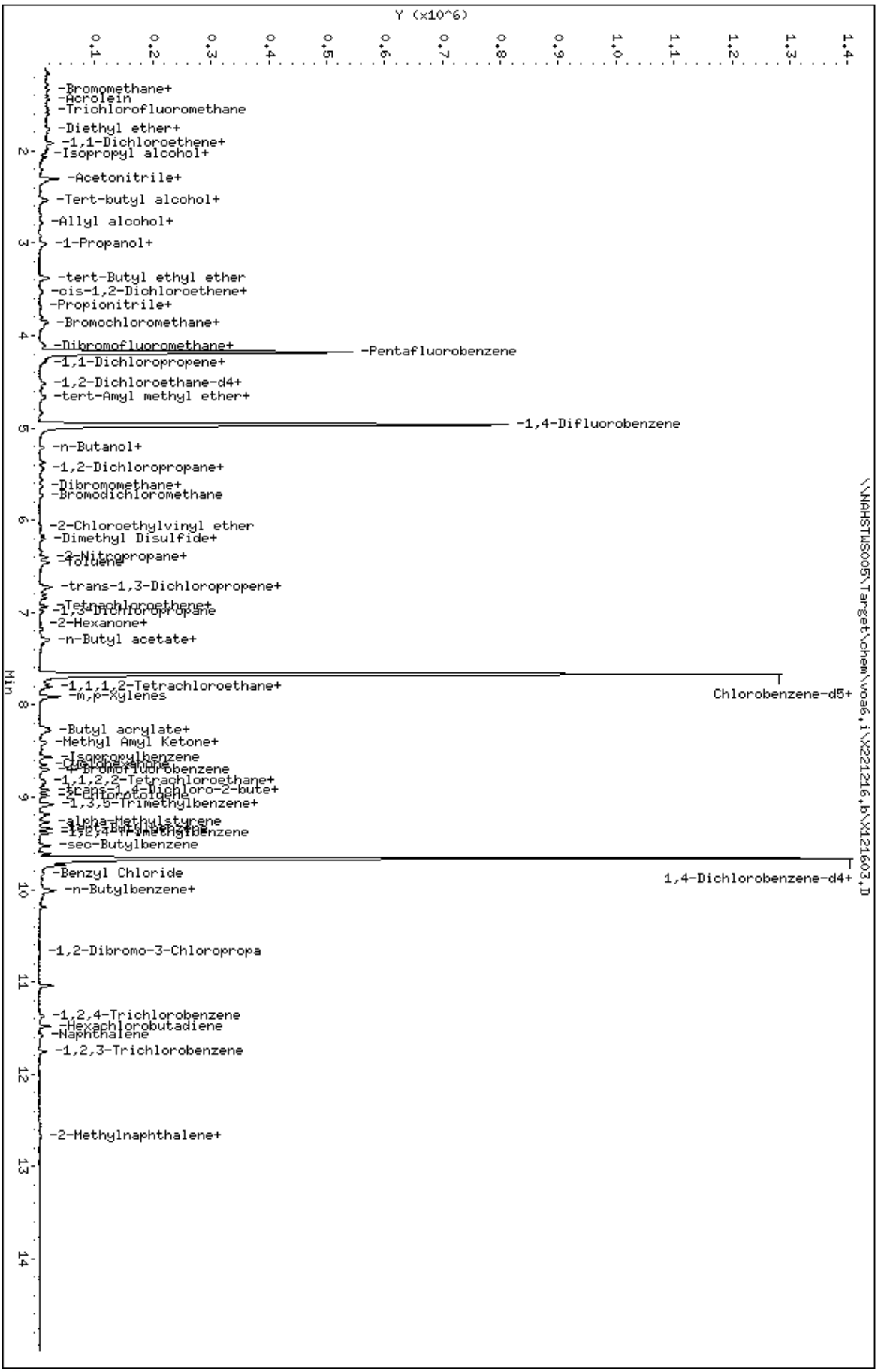
| | | | QUANT SIG | | | | | AMOUNTS | |
|---|---|---|---|---|---|---|---|---|---|
| | | Compounds | MASS | RT | EXP RT | REL RT | RESPONSE | CAL-AMT ( ug/l) | ON-COL ( ug/l) |
| | 162 | Butyl acrylate | 55 | 8.271 | 8.271 | (1.079) | 4718 | 0.50000 | 0.55(M) |
| | 2 | Dichlorodifluoromethane | 85 | 0.972 | 0.972 | (0.233) | 1990 | 0.50000 | 1.00(M) |
| | 3 | Chloromethane | 50 | 1.077 | 1.077 | (0.258) | 2466 | 0.50000 | 2.77(M) |
| | 5 | Vinyl Chloride | 62 | 1.141 | 1.141 | (0.273) | 2412 | 0.50000 | 0.59(M) |
| | 6 | Bromomethane | 94 | 1.336 | 1.336 | (0.320) | 1893 | 0.50000 | 2.36(M) |
| | 7 | Chloroethane | 64 | 1.407 | 1.407 | (0.337) | 1653 | 0.50000 | 0.58(M) |
| | 8 | Trichlorofluoromethane | 101 | 1.561 | 1.561 | (0.374) | 3286 | 0.50000 | 0.58(M) |
| | 9 | Acrolein | 56 | 1.441 | 1.441 | (0.345) | 440 | 1.00000 | 4.17(M) |
| | 10 | Acetone | 43 | 1.977 | 1.977 | (0.473) | 2669 | 1.00000 | 2.02(M) |
| | 11 | 1,1-Dichloroethene | 96 | 1.913 | 1.913 | (0.458) | 2037 | 0.50000 | 0.58(M) |
| | 15 | Iodomethane | 142 | 2.026 | 2.026 | (0.485) | 2397 | 1.00000 | 3.84(TM) |
| | 16 | Acrylonitrile | 53 | 2.566 | 2.566 | (0.614) | 1118 | 1.00000 | 0.94(M) |
| | 17 | Methylene Chloride | 84 | 2.296 | 2.296 | (0.550) | 2938 | 0.50000 | 0.61(M) |
| | 18 | Methyl tert-butyl ether | 73 | 2.536 | 2.536 | (0.607) | 5841 | 0.50000 | 0.50(M) |
| | 19 | Carbon Disulfide | 76 | 2.067 | 2.067 | (0.495) | 9921 | 1.00000 | 1.08(M) |
| | 20 | trans-1,2-Dichloroethene | 96 | 2.543 | 2.543 | (0.609) | 2218 | 0.50000 | 0.56(M) |
| | 21 | Vinyl Acetate | 43 | 3.023 | 3.023 | (0.724) | 10138 | 1.00000 | 1.00(M) |
| | 22 | 1,1-Dichloroethane | 63 | 2.926 | 2.926 | (0.700) | 3874 | 0.50000 | 0.56(M) |
| | 24 | 2-Butanone | 43 | 3.649 | 3.649 | (0.873) | 1292 | 1.00000 | 3.93(M) |
| | 26 | 2,2-Dichloropropane | 77 | 3.514 | 3.514 | (0.841) | 3238 | 0.50000 | 0.55(M) |
| | 27 | cis-1,2-Dichloroethene | 96 | 3.544 | 3.544 | (0.848) | 2852 | 0.50000 | 0.59 |
| | 28 | Chloroform | 83 | 3.908 | 3.908 | (0.935) | 4040 | 0.50000 | 0.52(M) |
| | 29 | Bromochloromethane | 128 | 3.799 | 3.799 | (0.909) | 1481 | 0.50000 | 0.56 |
| $ | 30 | Dibromofluoromethane | 113 | 4.110 | 4.110 | (0.984) | 2321 | 0.50000 | 0.35 |
| | 31 | 1,1,1-Trichloroethane | 97 | 4.084 | 4.084 | (0.978) | 3512 | 0.50000 | 0.57(M) |
| | 32 | 1,1-Dichloropropene | 75 | 4.290 | 4.290 | (0.864) | 2468 | 0.50000 | 0.50(M) |
| | 33 | 1,2-Dichloroethane | 62 | 4.567 | 4.567 | (0.920) | 3129 | 0.50000 | 0.55(M) |
| | 34 | Carbon Tetrachloride | 117 | 4.264 | 4.264 | (0.859) | 2763 | 0.50000 | 0.52(MH) |
| $ | 35 | 1,2-Dichloroethane-d4 | 65 | 4.481 | 4.481 | (1.073) | 2849 | 0.50000 | 0.87(T) |
| * | 36 | 1,4-Difluorobenzene | 114 | 4.965 | 4.965 | (1.000) | 687671 | 50.0000 | |
| | 37 | Benzene | 78 | 4.519 | 4.519 | (0.910) | 9243 | 0.50000 | 0.56 |
| | 38 | Trichloroethene | 130 | 5.216 | 5.216 | (1.051) | 2583 | 0.50000 | 0.55(M) |
| | 39 | Bromodichloromethane | 83 | 5.730 | 5.730 | (1.154) | 3650 | 0.50000 | 0.59(M) |
| | 41 | 2-Chloroethylvinyl ether | 63 | 6.071 | 6.071 | (1.223) | 1861 | 1.00000 | 1.06(M) |
| | 42 | 1,2-Dichloropropane | 63 | 5.441 | 5.441 | (1.096) | 2449 | 0.50000 | 0.56(M) |
| | 44 | Dibromomethane | 93 | 5.557 | 5.557 | (1.119) | 1725 | 0.50000 | 0.58 |
| | 45 | 4-Methyl-2-Pentanone | 43 | 6.337 | 6.337 | (0.826) | 3741 | 1.00000 | 1.08(M) |
| | 46 | cis-1,3-Dichloropropene | 75 | 6.168 | 6.168 | (1.242) | 3695 | 0.50000 | 0.51(M) |
| * | 47 | Chlorobenzene-d5 | 117 | 7.668 | 7.668 | (1.000) | 645291 | 50.0000 | |
| $ | 48 | Toluene-d8 | 98 | 6.401 | 6.401 | (0.835) | 9525 | 0.50000 | 0.59 |
| | 50 | Toluene | 91 | 6.460 | 6.460 | (0.843) | 10374 | 0.50000 | 0.58(M) |
| | 51 | trans-1,3-Dichloropropene | 75 | 6.697 | 6.697 | (1.349) | 3042 | 0.50000 | 0.50 |
| | 52 | 2-Hexanone | 43 | 7.117 | 7.117 | (0.928) | 2580 | 1.00000 | 1.09 |
| | 53 | 1,1,2-Trichloroethane | 83 | 6.839 | 6.839 | (0.892) | 2092 | 0.50000 | 0.58(M) |
| | 54 | 1,3-Dichloropropane | 76 | 6.993 | 6.993 | (0.912) | 4005 | 0.50000 | 0.56(M) |
| | 55 | Dibromochloromethane | 129 | 7.180 | 7.180 | (0.936) | 2827 | 0.50000 | 0.54 |
| | 56 | Tetrachloroethene | 164 | 6.933 | 6.933 | (0.904) | 2131 | 0.50000 | 0.57(M) |
| | 57 | 1,2-Dibromoethane | 107 | 7.270 | 7.270 | (0.948) | 2340 | 0.50000 | 0.52(M) |
| | 58 | 1-Chlorohexane | 55 | 7.705 | 7.705 | (1.552) | 1829 | 0.50000 | 0.55(MH) |
| | 59 | Chlorobenzene | 112 | 7.694 | 7.694 | (1.003) | 7747 | 0.50000 | 0.61 |
| | 60 | 1,1,1,2-Tetrachloroethane | 131 | 7.784 | 7.784 | (1.015) | 2741 | 0.50000 | 0.58(M) |
| | 61 | Ethylbenzene | 106 | 7.806 | 7.806 | (1.018) | 3064 | 0.50000 | 0.51(M) |

| | | | | | | |
|---|---|---|---|---|---|---|
| 62 m,p-Xylenes | 106 | 7.911 | 7.911 (1.032) | 9016 | 1.00000 | 1.17(M) |
| 63 o-Xylene | 106 | 8.252 | 8.252 (1.076) | 4412 | 0.50000 | 0.58(M) |

| | | | QUANT SIG | | | | | AMOUNTS | |
|---|---|---|---|---|---|---|---|---|---|
| | | Compounds | MASS | RT | EXP RT | REL RT | RESPONSE | CAL-AMT ( ug/l) | ON-COL ( ug/l) |
| | 64 | Styrene | 104 | 8.286 | 8.286 | (1.081) | 6634 | 0.50000 | 0.52(M) |
| | 66 | Bromoform | 173 | 8.421 | 8.421 | (1.098) | 2013 | 0.50000 | 0.56(TM) |
| | 67 | Isopropylbenzene | 105 | 8.567 | 8.567 | (1.117) | 8757 | 0.50000 | 0.50(M) |
| | 68 | 1,1,2,2-Tetrachloroethane | 83 | 8.845 | 8.845 | (0.915) | 3194 | 0.50000 | 0.57(M) |
| $ | 69 | 4-Bromofluorobenzene | 95 | 8.706 | 8.706 | (1.135) | 3870 | 0.50000 | 0.71(M) |
| * | 70 | 1,4-Dichlorobenzene-d4 | 152 | 9.662 | 9.662 | (1.000) | 347824 | 50.0000 | |
| | 71 | 1,2,3-Trichloropropane | 75 | 8.871 | 8.871 | (0.918) | 2019 | 0.50000 | 0.52(M) |
| | 73 | n-Propylbenzene | 91 | 8.923 | 8.923 | (0.924) | 11163 | 0.50000 | 0.57(M) |
| | 74 | Bromobenzene | 156 | 8.818 | 8.818 | (0.913) | 3147 | 0.50000 | 0.55(M) |
| | 75 | 1,3,5-Trimethylbenzene | 105 | 9.073 | 9.073 | (0.939) | 7182 | 0.50000 | 0.50(M) |
| | 76 | 2-Chlorotoluene | 91 | 8.983 | 8.983 | (0.930) | 6718 | 0.50000 | 0.53(M) |
| | 77 | 4-Chlorotoluene | 91 | 9.088 | 9.088 | (0.941) | 7644 | 0.50000 | 0.53(M) |
| | 78 | tert-Butylbenzene | 119 | 9.339 | 9.339 | (0.967) | 6389 | 0.50000 | 0.54(M) |
| | 79 | 1,2,4-Trimethylbenzene | 105 | 9.384 | 9.384 | (0.971) | 8496 | 0.50000 | 0.56(M) |
| | 81 | sec-Butylbenzene | 105 | 9.523 | 9.523 | (0.986) | 7938 | 0.50000 | 0.51(M) |
| | 82 | p-Isopropyltoluene | 119 | 9.651 | 9.651 | (0.999) | 7343 | 0.50000 | 0.52(M) |
| | 83 | 1,3-Dichlorobenzene | 146 | 9.613 | 9.613 | (0.995) | 4677 | 0.50000 | 0.49(M) |
| | 84 | 1,4-Dichlorobenzene | 146 | 9.681 | 9.681 | (1.002) | 5674 | 0.50000 | 0.54(M) |
| | 86 | Benzyl Chloride | 91 | 9.831 | 9.831 | (1.282) | 3642 | 0.50000 | 3.03 |
| | 87 | n-Butylbenzene | 91 | 10.014 | 10.014 | (1.036) | 5149 | 0.50000 | 2.14(M) |
| | 88 | 1,2-Dichlorobenzene | 146 | 10.010 | 10.010 | (1.036) | 5504 | 0.50000 | 0.56(M) |
| | 89 | 1,2-Dibromo-3-Chloropropane | 155 | 10.678 | 10.678 | (1.105) | 441 | 0.50000 | 0.58(M) |
| | 90 | 1,2,4-Trichlorobenzene | 180 | 11.364 | 11.364 | (1.176) | 3187 | 0.50000 | 0.51(M) |
| | 91 | Hexachlorobutadiene | 225 | 11.480 | 11.480 | (1.188) | 1477 | 0.50000 | 0.49(M) |
| | 92 | Naphthalene | 128 | 11.581 | 11.581 | (1.199) | 7025 | 0.50000 | 0.50 |
| | 93 | 1,2,3-Trichlorobenzene | 180 | 11.765 | 11.765 | (1.218) | 3572 | 0.50000 | 0.60(M) |
| M | 94 | 1,2-Dichloroethylene (total) | 96 | | | | 5070 | 1.00000 | |
| M | 95 | Xylenes (total) | 106 | | | | 13428 | 1.50000 | |
| | 141 | Cyclohexane | 56 | 4.114 | 4.114 | (0.985) | 2803 | 0.50000 | 1.84(M) |
| | 138 | Freon TF | 101 | 1.917 | 1.917 | (0.459) | 1851 | 0.50000 | 0.54(M) |
| | 147 | Methylcyclohexane | 55 | 5.415 | 5.415 | (1.091) | 4781 | 0.50000 | 0.56(M) |
| | 146 | Methyl Acetate | 43 | 2.240 | 2.240 | (0.536) | 1269 | 0.50000 | 0.61(M) |

## QC Flag Legend

T - Target compound detected outside RT window.
M - Compound response manually integrated.
H - Operator selected an alternate compound hit.




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Sample Info: VSTD000,5;VSTD000,5;1;2;
Purge Volume: 5,0
Column phase: DB624

Instrument: voa6,i
Operator: PC
Column diameter: 0,18

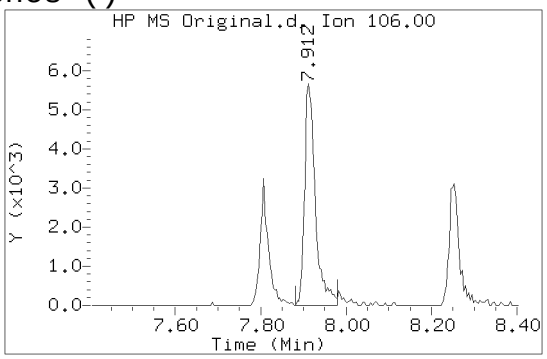
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Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

## m,p-Xylenes ()

Reason Code:

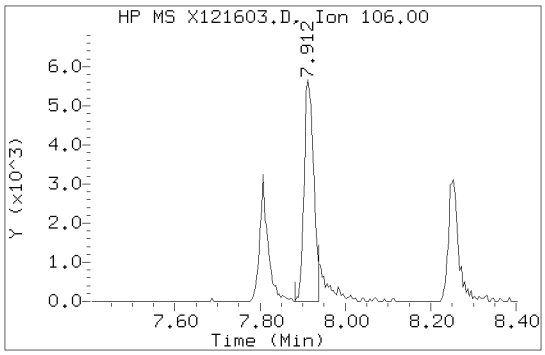
**BEFORE**

MASS
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AREA
10070
HEIGHT
5666
27-Dec-2022
16:03
linh
pham



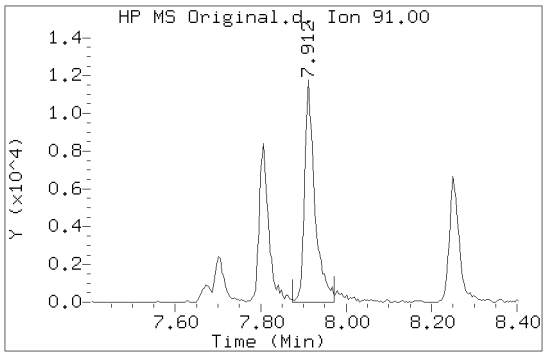

**AFTER**

MASS
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9016
HEIGHT
5666
27-Dec-2022
16:07
linh
pham



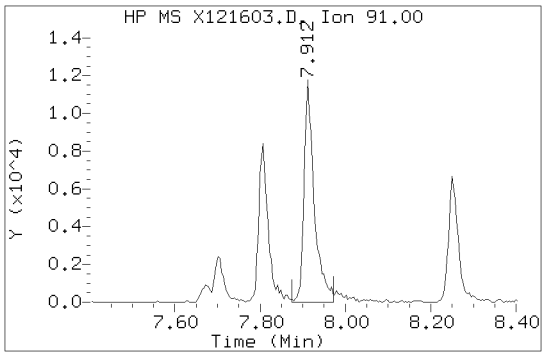

**BEFORE**

MASS
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AREA
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HEIGHT
11768
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
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AREA
19887
HEIGHT
11768
27-Dec-2022
16:07
linh
pham

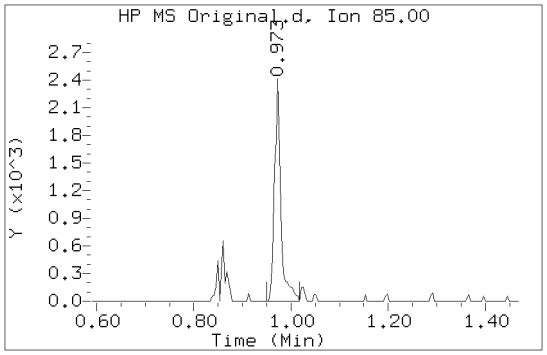



## Dichlorodifluoromethane (75-71-8)

Reason Code:

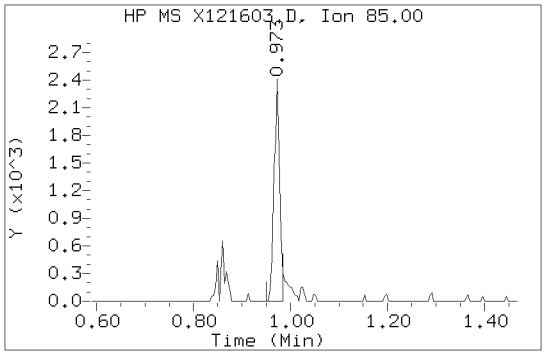
**BEFORE**

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AREA
2242
HEIGHT
2413
27-Dec-2022
16:03
linh
pham



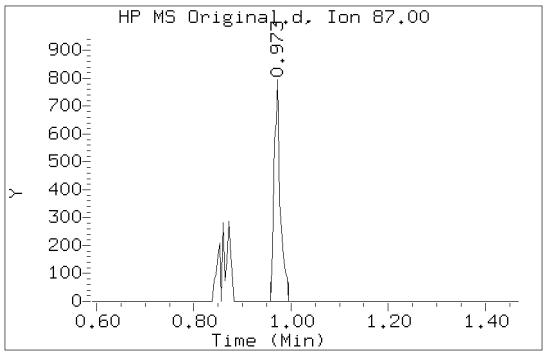

**AFTER**

MASS
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AREA
1990
HEIGHT
2413
27-Dec-2022
16:07
linh
pham



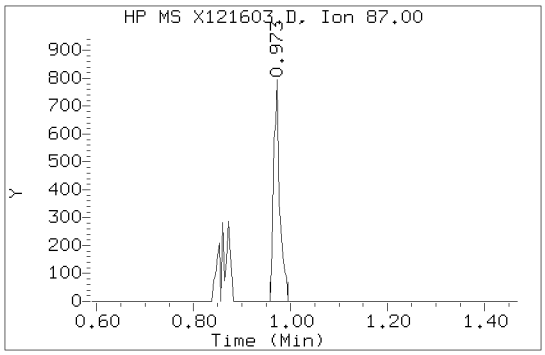

**BEFORE**

MASS
87
AREA
713
HEIGHT
795
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
87
AREA
713
HEIGHT
795
27-Dec-2022
16:07
linh
pham

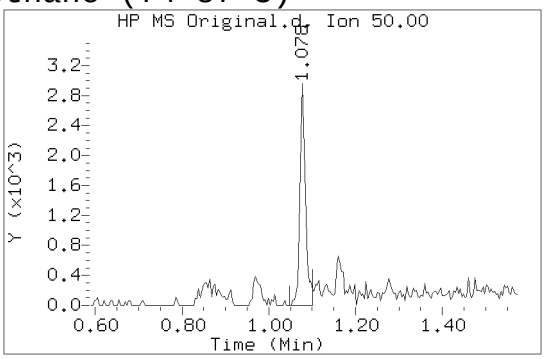


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

## Chloromethane (74-87-3)

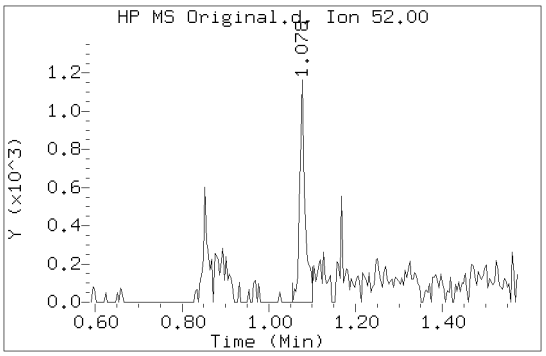
### BEFORE

MASS
50
AREA
2589
HEIGHT
2959
27-Dec-2022
16:03
linh
pham




### BEFORE

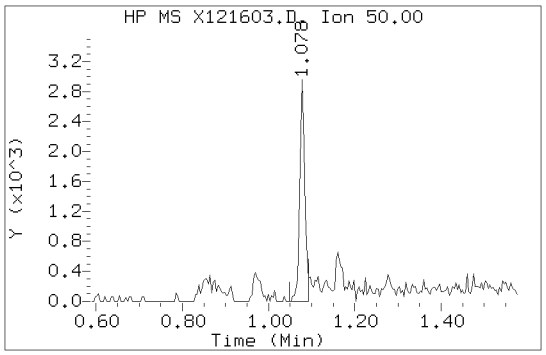
MASS
52
AREA
985
HEIGHT
1164
27-Dec-2022
16:03
linh
pham




### Reason Code:

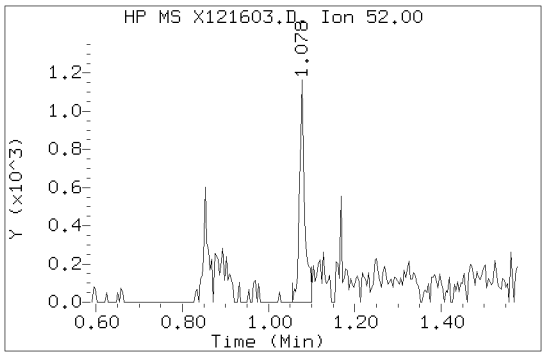
### AFTER

MASS
50
AREA
2466
HEIGHT
2959
27-Dec-2022
16:07
linh
pham




### AFTER

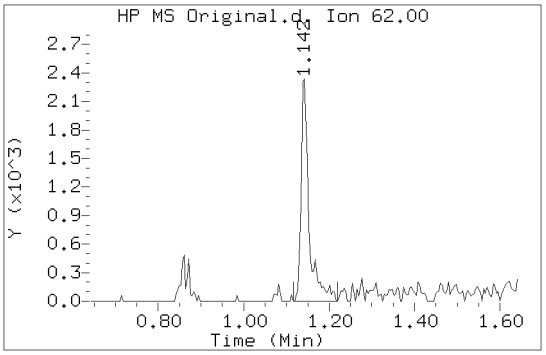
MASS
52
AREA
985
HEIGHT
1164
27-Dec-2022
16:07
linh
pham




## Vinyl Chloride (75-01-4)

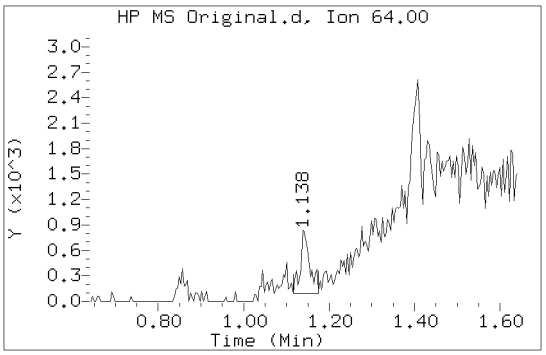
### BEFORE

MASS
62
AREA
3132
HEIGHT
2337
27-Dec-2022
16:03
linh
pham




### BEFORE

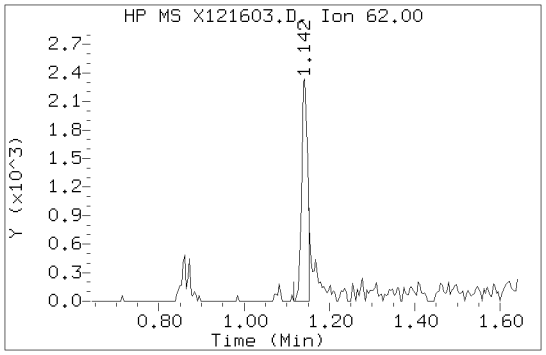
MASS
64
AREA
1174
HEIGHT
750
27-Dec-2022
16:03
linh
pham




### Reason Code:

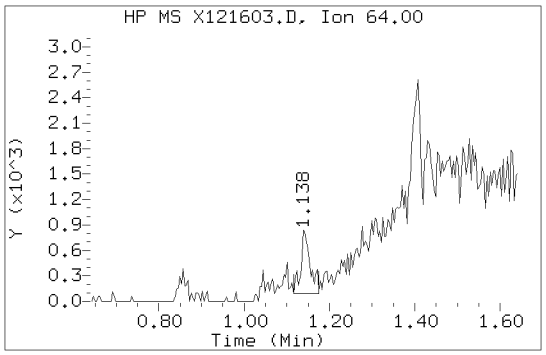
### AFTER

MASS
62
AREA
2412
HEIGHT
2337
27-Dec-2022
16:07
linh
pham




### AFTER

MASS
64
AREA
1174
HEIGHT
750
27-Dec-2022
16:07
linh
pham



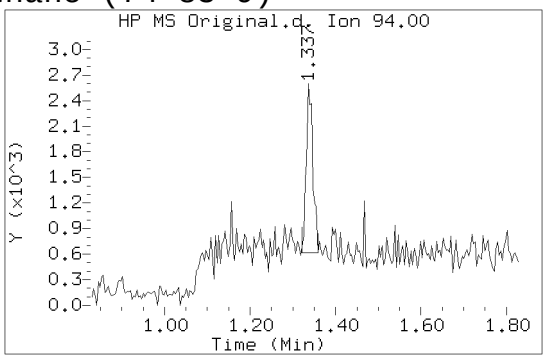
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

## Bromomethane (74-83-9)

Reason Code:

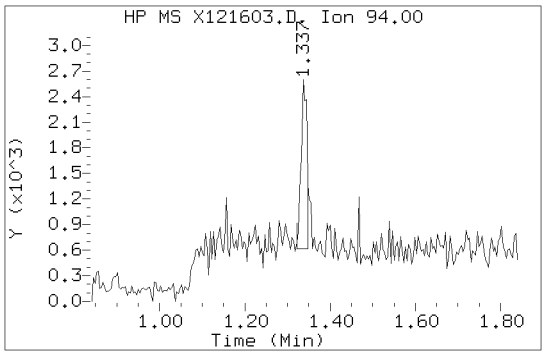
BEFORE

MASS
94
AREA
2146
HEIGHT
1983
27-Dec-2022
16:03
linh
pham



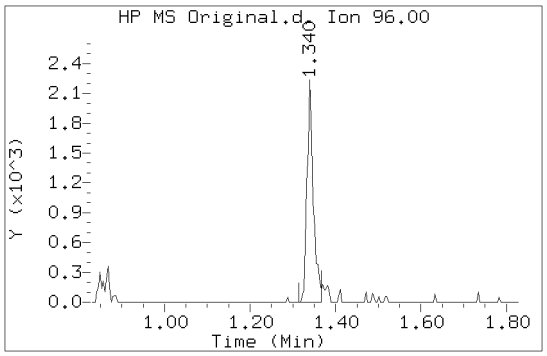

AFTER

MASS
94
AREA
1893
HEIGHT
1983
27-Dec-2022
16:07
linh
pham



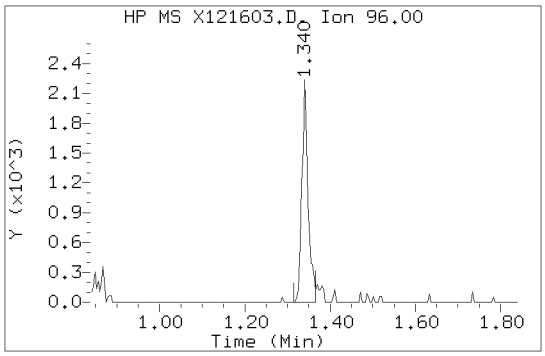

BEFORE

MASS
96
AREA
2304
HEIGHT
2236
27-Dec-2022
16:03
linh
pham




AFTER

MASS
96
AREA
2304
HEIGHT
2236
27-Dec-2022
16:07
linh
pham

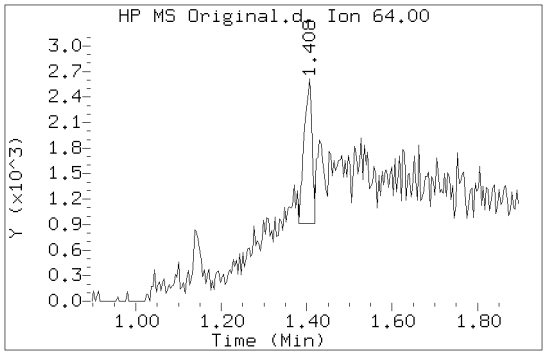



## Chloroethane (75-00-3)

Reason Code:

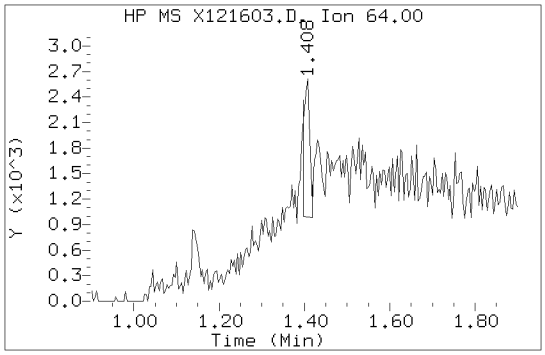
BEFORE

MASS
64
AREA
2196
HEIGHT
1702
27-Dec-2022
16:03
linh
pham



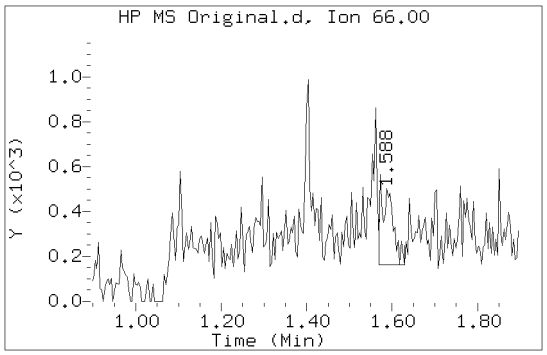

AFTER

MASS
64
AREA
1653
HEIGHT
1624
27-Dec-2022
16:07
linh
pham



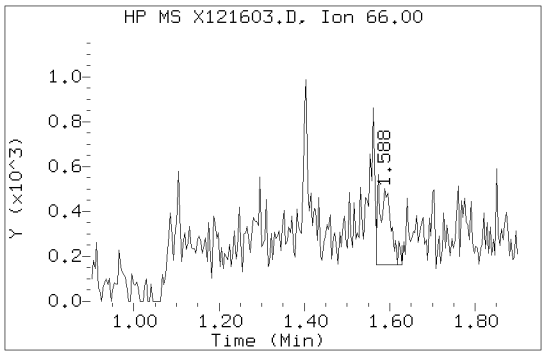

BEFORE

MASS
66
AREA
677
HEIGHT
340
27-Dec-2022
16:03
linh
pham




AFTER

MASS
66
AREA
677
HEIGHT
340
27-Dec-2022
16:07
linh
pham



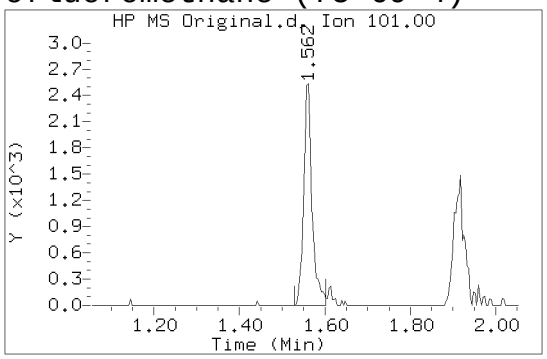
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

## Trichlorofluoromethane (75-69-4)

Reason Code:

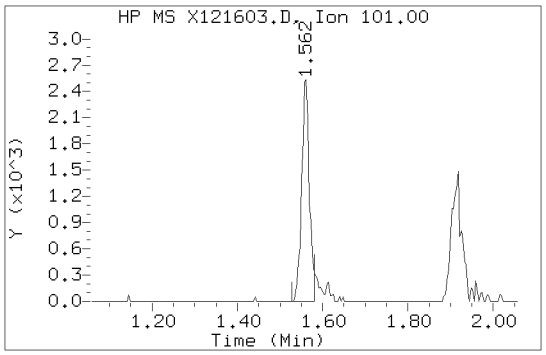
**BEFORE**

MASS
101
AREA
3530
HEIGHT
2534
27-Dec-2022
16:03
linh
pham



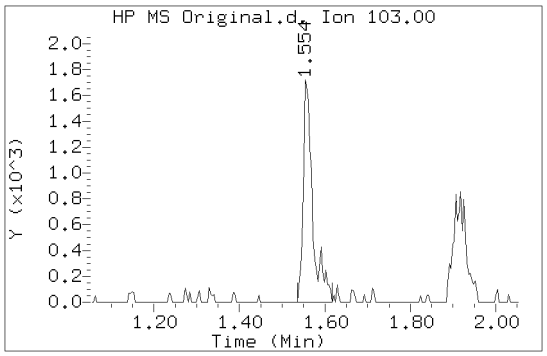

**AFTER**

MASS
101
AREA
3286
HEIGHT
2534
27-Dec-2022
16:07
linh
pham



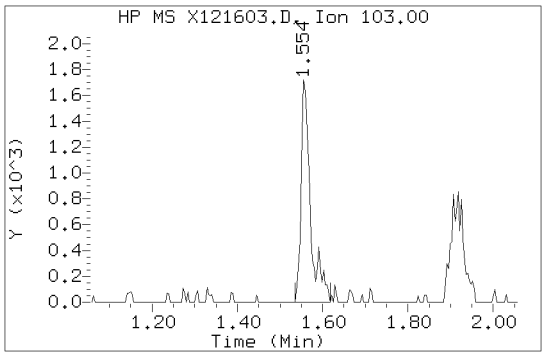

**BEFORE**

MASS
103
AREA
2708
HEIGHT
1720
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
103
AREA
2708
HEIGHT
1720
27-Dec-2022
16:07
linh
pham

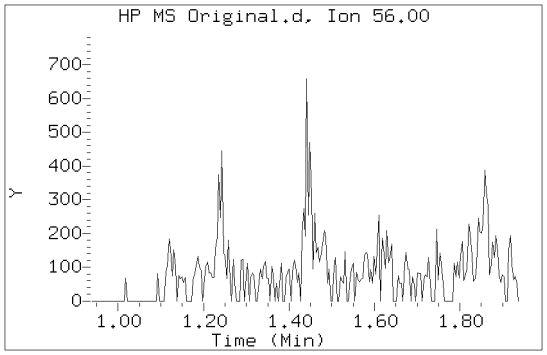



## Acrolein (107-02-8 )

Reason Code:

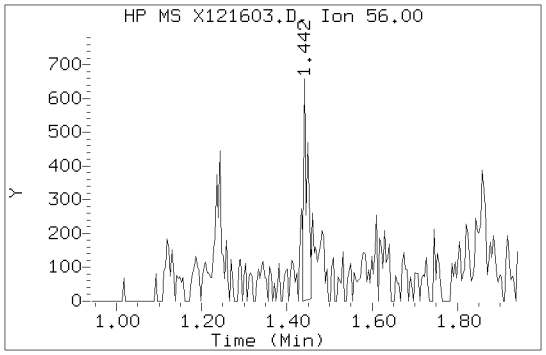
**BEFORE**

MASS
56
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



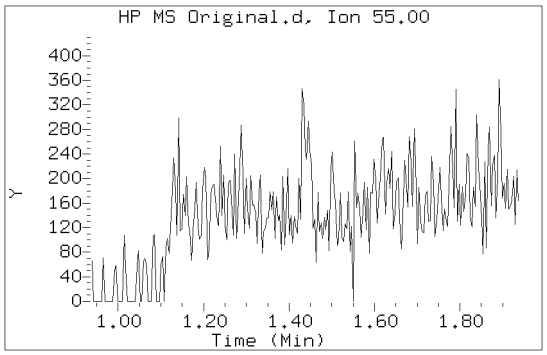

**AFTER**

MASS
56
AREA
440
HEIGHT
656
27-Dec-2022
16:07
linh
pham



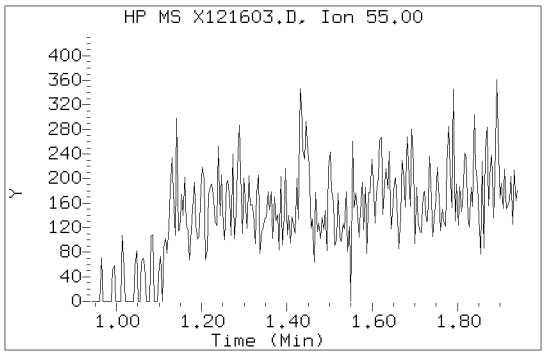

**BEFORE**

MASS
55
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
55
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham

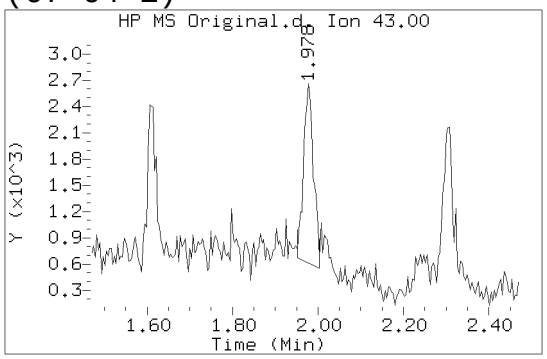


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

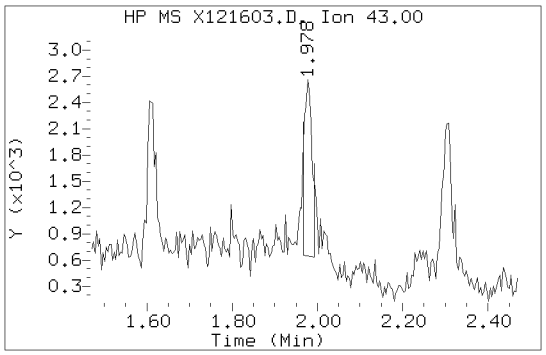
## Acetone (67-64-1)

Reason Code:

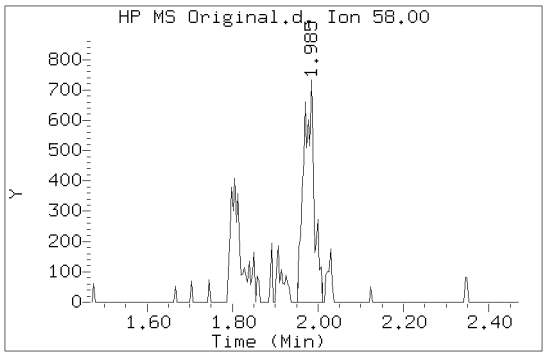
**BEFORE**
MASS
43
AREA
3388
HEIGHT
2046
27-Dec-2022
16:03
linh
pham



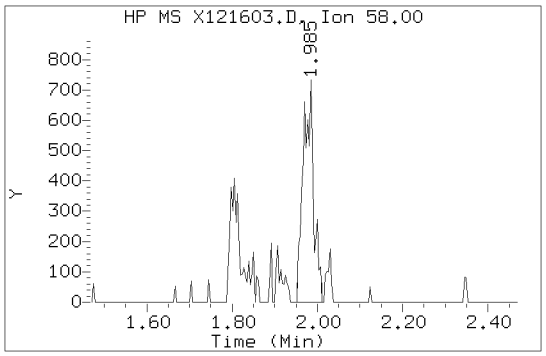

**AFTER**
MASS
43
AREA
2669
HEIGHT
2015
27-Dec-2022
16:07
linh
pham




**BEFORE**
MASS
58
AREA
1264
HEIGHT
733
27-Dec-2022
16:03
linh
pham



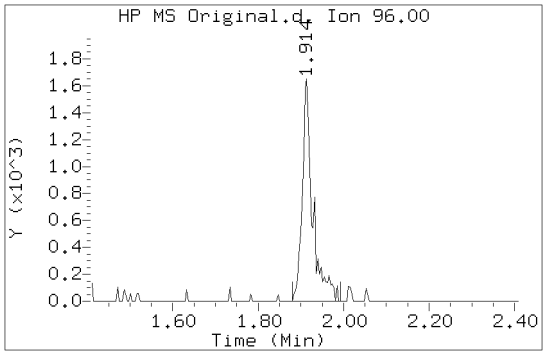

**AFTER**
MASS
58
AREA
1264
HEIGHT
733
27-Dec-2022
16:07
linh
pham



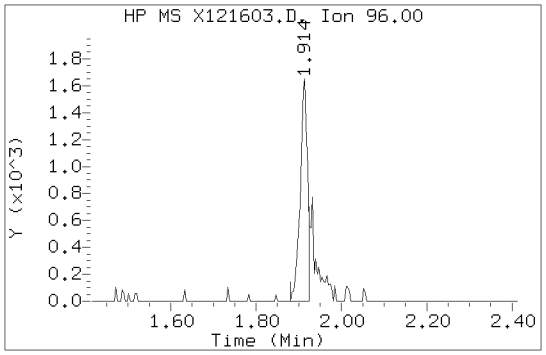

## 1,1-Dichloroethene (75-35-4)

Reason Code:

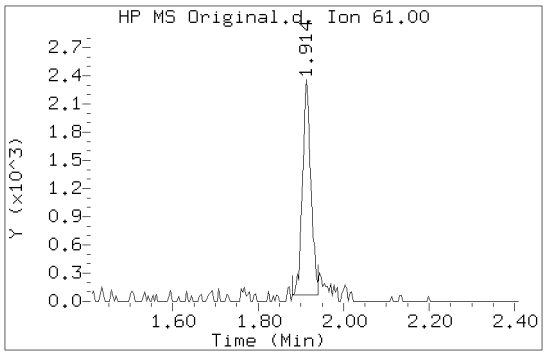
**BEFORE**
MASS
96
AREA
2836
HEIGHT
1651
27-Dec-2022
16:03
linh
pham



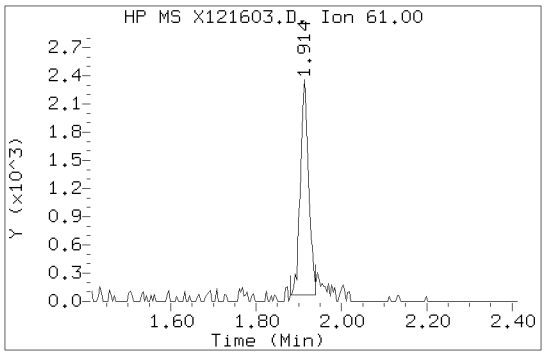

**AFTER**
MASS
96
AREA
2037
HEIGHT
1651
27-Dec-2022
16:07
linh
pham




**BEFORE**
MASS
61
AREA
3197
HEIGHT
2293
27-Dec-2022
16:03
linh
pham




**AFTER**
MASS
61
AREA
3197
HEIGHT
2293
27-Dec-2022
16:07
linh
pham



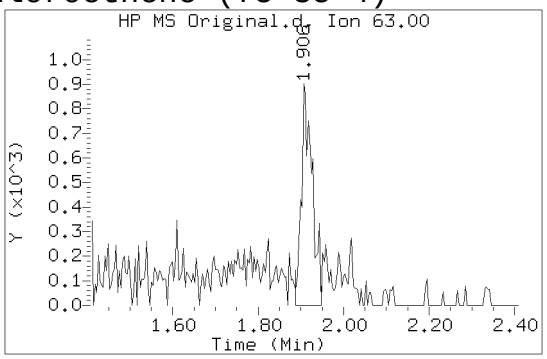
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

## 1,1-Dichloroethene (75-35-4)

Reason Code:

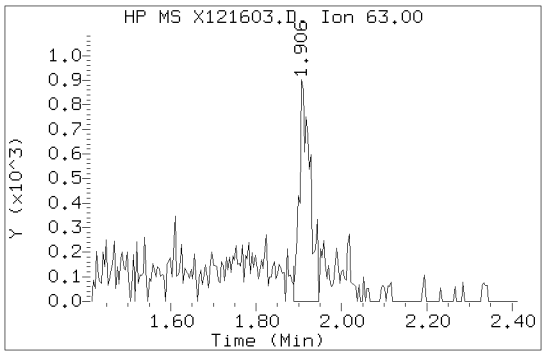
**BEFORE**

MASS
63
AREA
1607
HEIGHT
902
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
63
AREA
1607
HEIGHT
902
27-Dec-2022
16:07
linh
pham

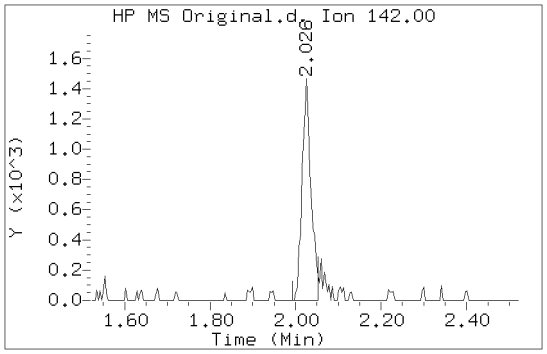



## Iodomethane (74-88-4)

Reason Code:

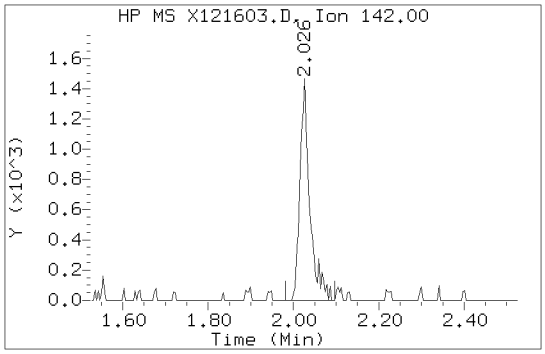
**BEFORE**

MASS
142
AREA
2166
HEIGHT
1466
27-Dec-2022
16:03
linh
pham



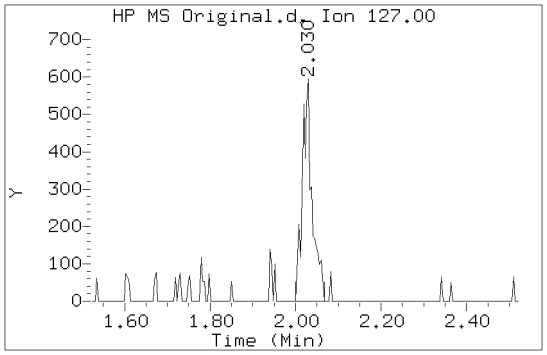

**AFTER**

MASS
142
AREA
2397
HEIGHT
1466
27-Dec-2022
16:07
linh
pham



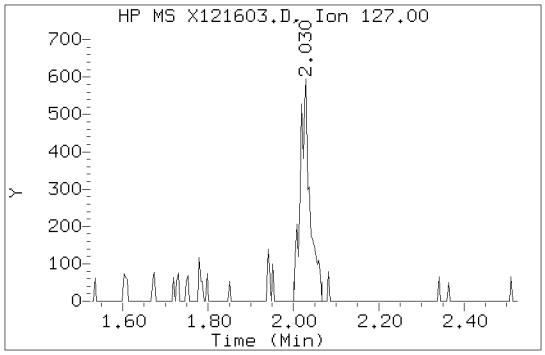

**BEFORE**

MASS
127
AREA
958
HEIGHT
595
27-Dec-2022
16:03
linh
pham



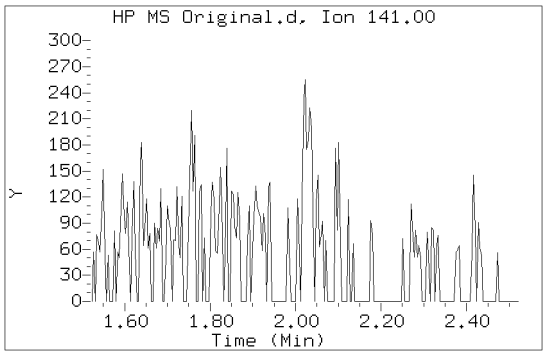

**AFTER**

MASS
127
AREA
958
HEIGHT
595
27-Dec-2022
16:07
linh
pham



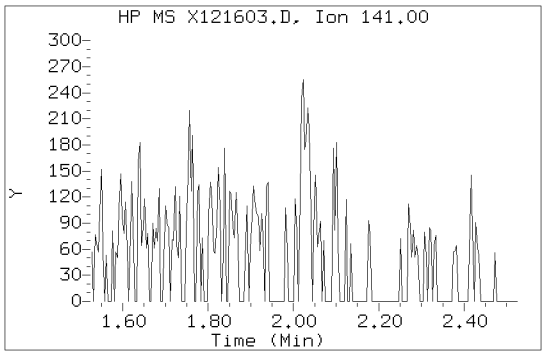

**BEFORE**

MASS
141
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
141
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham

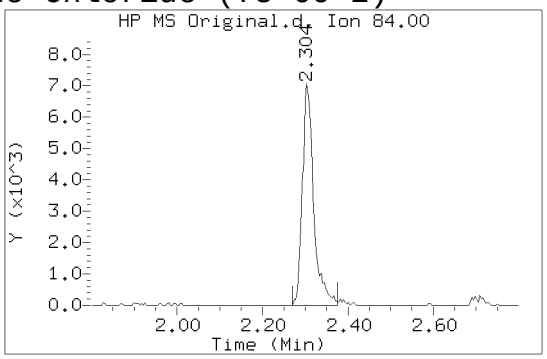


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

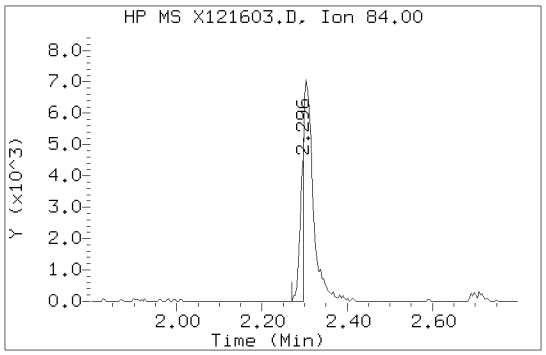
## Methylene Chloride (75-09-2)

Reason Code:

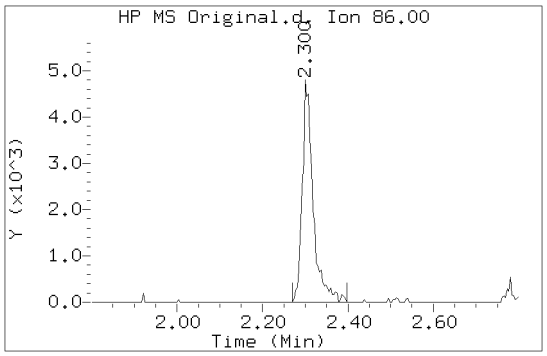
**BEFORE**
MASS
84
AREA
13307
HEIGHT
7067
27-Dec-2022
16:03
linh
pham



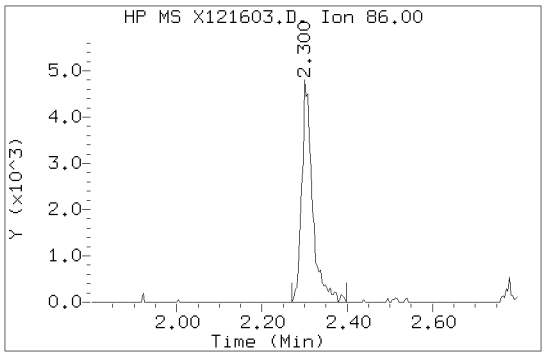

**AFTER**
MASS
84
AREA
2938
HEIGHT
4595
27-Dec-2022
16:07
linh
pham



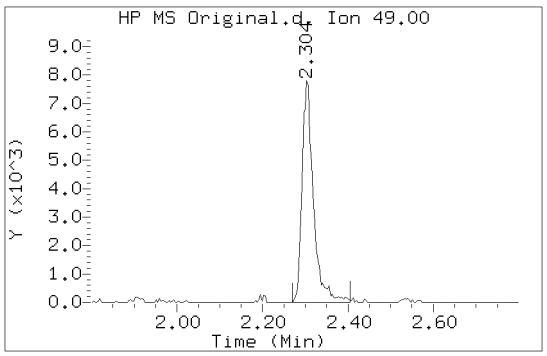

**BEFORE**
MASS
86
AREA
8692
HEIGHT
4802
27-Dec-2022
16:03
linh
pham



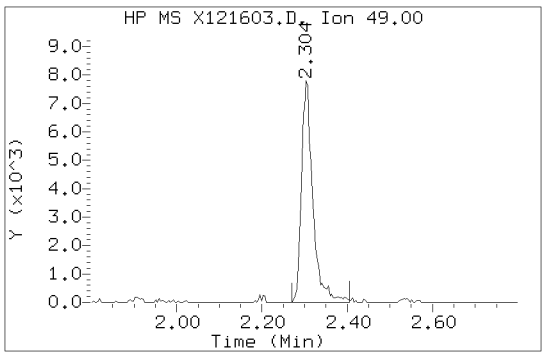

**AFTER**
MASS
86
AREA
8692
HEIGHT
4802
27-Dec-2022
16:07
linh
pham




**BEFORE**
MASS
49
AREA
14733
HEIGHT
7803
27-Dec-2022
16:03
linh
pham



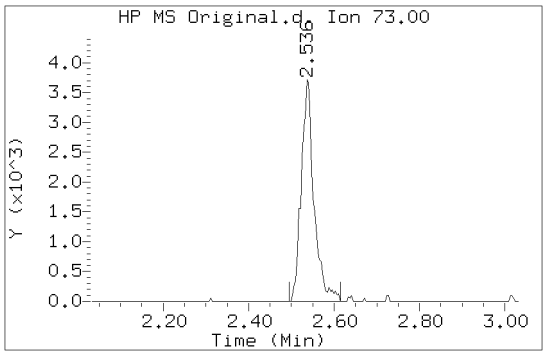

**AFTER**
MASS
49
AREA
14733
HEIGHT
7803
27-Dec-2022
16:07
linh
pham



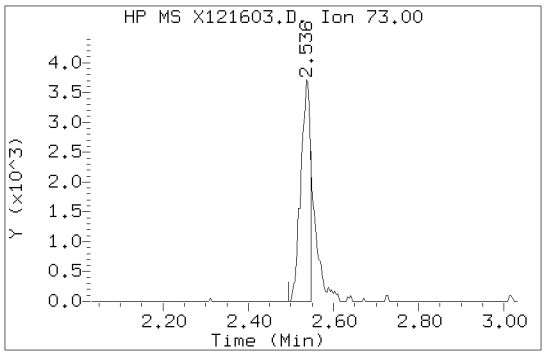

## Methyl tert-butyl ether (1634-04-4)

Reason Code:

**BEFORE**
MASS
73
AREA
7826
HEIGHT
3716
27-Dec-2022
16:03
linh
pham




**AFTER**
MASS
73
AREA
5841
HEIGHT
3716
27-Dec-2022
16:07
linh
pham

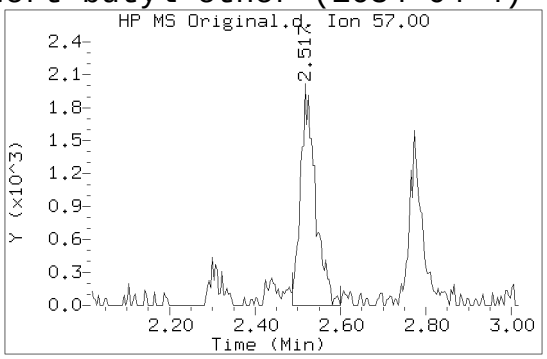


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

## Methyl tert-butyl ether (1634-04-4)

**BEFORE**

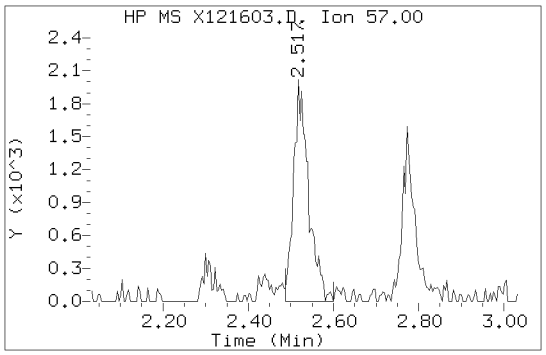
MASS
57
AREA
4915
HEIGHT
2019
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
57
AREA
4915
HEIGHT
2019
27-Dec-2022
16:07
linh
pham

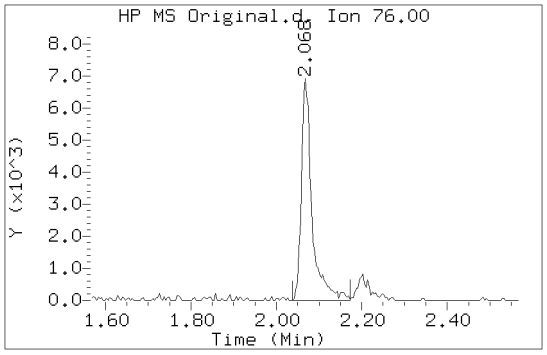
Reason Code:




## Carbon Disulfide (75-15-0)

**BEFORE**

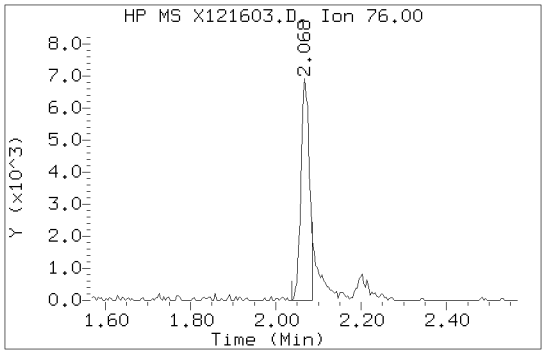
MASS
76
AREA
12313
HEIGHT
6923
27-Dec-2022
16:03
linh
pham




**AFTER**

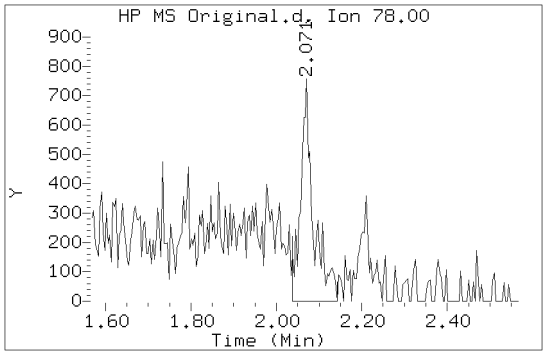
MASS
76
AREA
9921
HEIGHT
6923
27-Dec-2022
16:07
linh
pham

Reason Code:



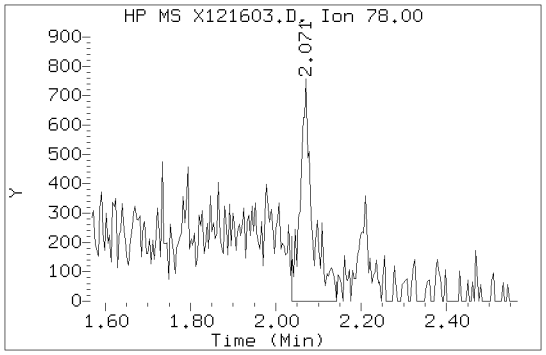

**BEFORE**

MASS
78
AREA
1586
HEIGHT
757
27-Dec-2022
16:03
linh
pham




**AFTER**

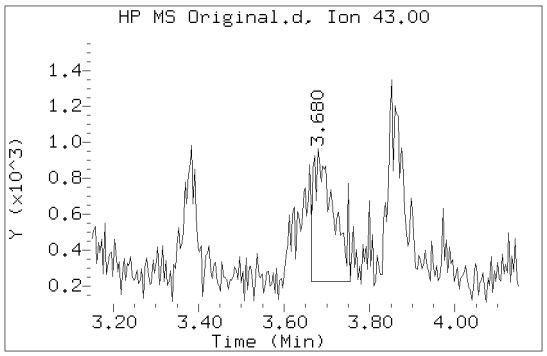
MASS
78
AREA
1586
HEIGHT
757
27-Dec-2022
16:07
linh
pham




## 2-Butanone (78-93-3)

**BEFORE**

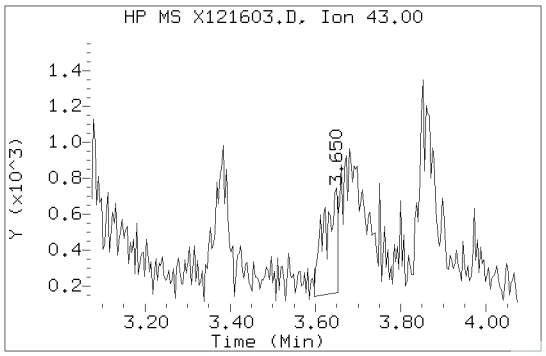
MASS
43
AREA
2415
HEIGHT
742
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
43
AREA
1292
HEIGHT
587
27-Dec-2022
16:07
linh
pham

Reason Code:



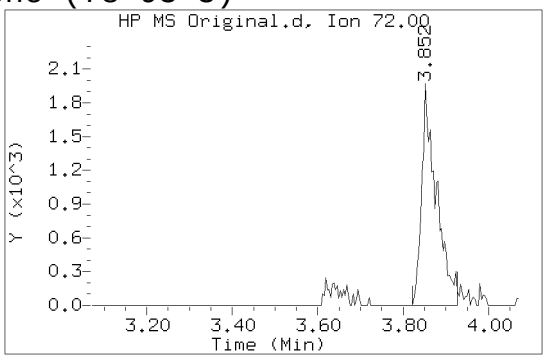
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

## 2-Butanone (78-93-3)

Reason Code:

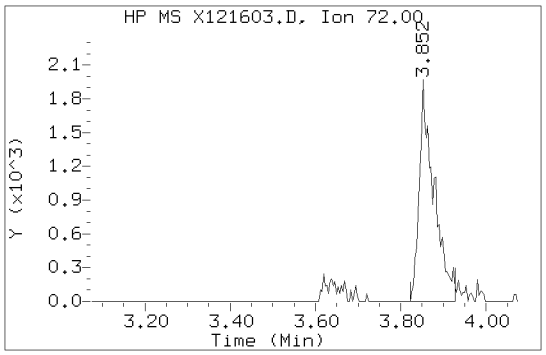
**BEFORE**

MASS
72
AREA
4698
HEIGHT
1970
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
72
AREA
4698
HEIGHT
1970
27-Dec-2022
16:07
linh
pham

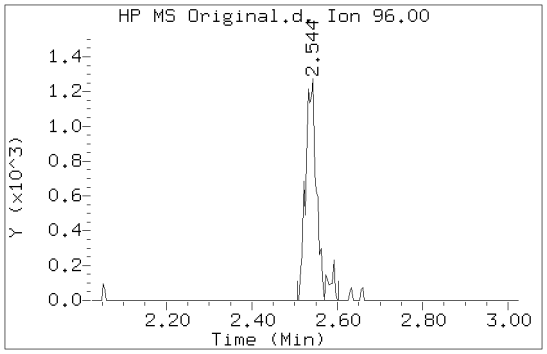



## trans-1,2-Dichloroethene (156-60-5)

Reason Code:

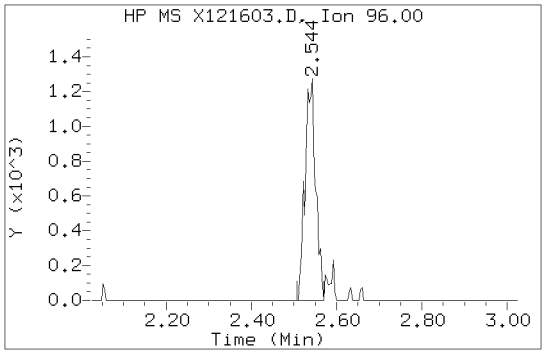
**BEFORE**

MASS
96
AREA
2404
HEIGHT
1274
27-Dec-2022
16:03
linh
pham



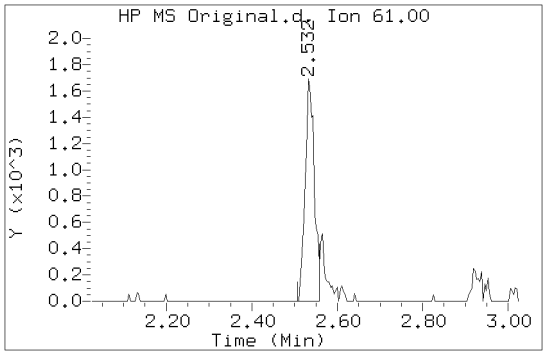

**AFTER**

MASS
96
AREA
2218
HEIGHT
1274
27-Dec-2022
16:07
linh
pham



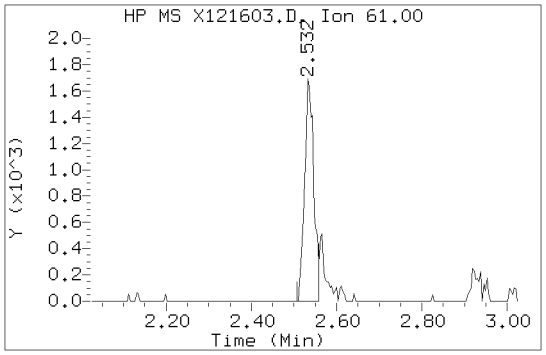

**BEFORE**

MASS
61
AREA
2571
HEIGHT
1692
27-Dec-2022
16:03
linh
pham



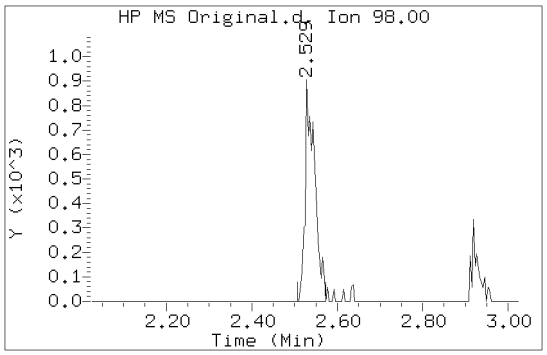

**AFTER**

MASS
61
AREA
2571
HEIGHT
1692
27-Dec-2022
16:07
linh
pham



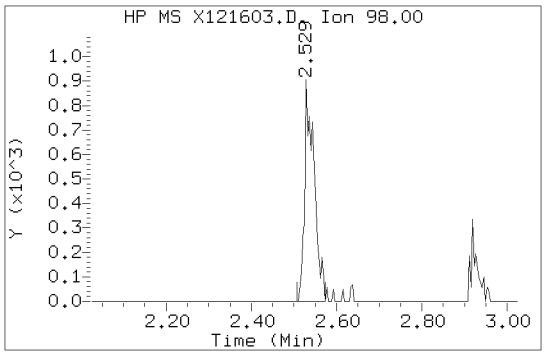

**BEFORE**

MASS
98
AREA
1412
HEIGHT
906
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
98
AREA
1412
HEIGHT
906
27-Dec-2022
16:07
linh
pham



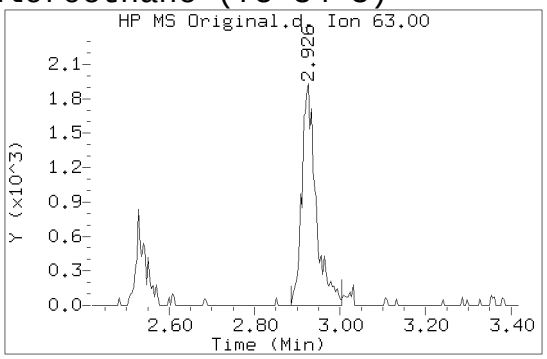
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

## 1,1-Dichloroethane (75-34-3)

Reason Code:

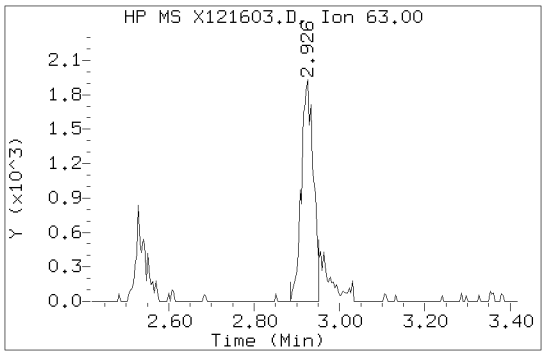
**BEFORE**

MASS
63
AREA
4504
HEIGHT
1931
27-Dec-2022
16:03
linh
pham



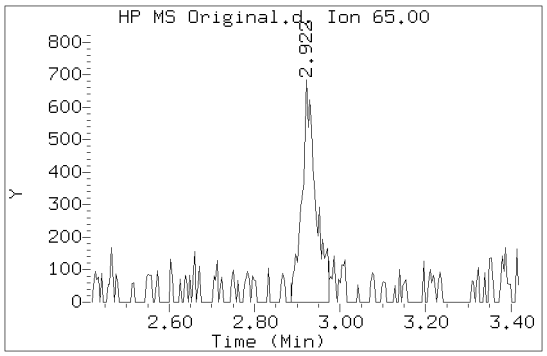

**AFTER**

MASS
63
AREA
3874
HEIGHT
1931
27-Dec-2022
16:07
linh
pham



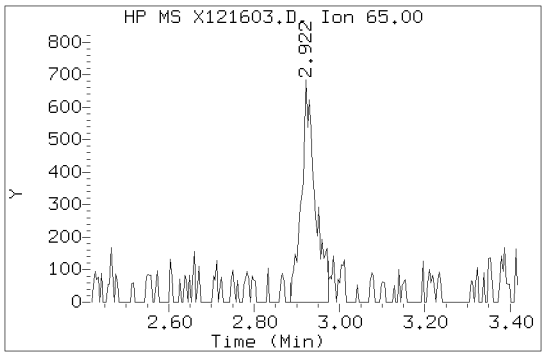

**BEFORE**

MASS
65
AREA
1548
HEIGHT
684
27-Dec-2022
16:03
linh
pham



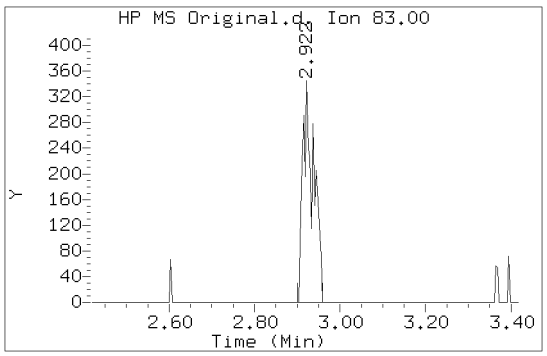

**AFTER**

MASS
65
AREA
1548
HEIGHT
684
27-Dec-2022
16:07
linh
pham



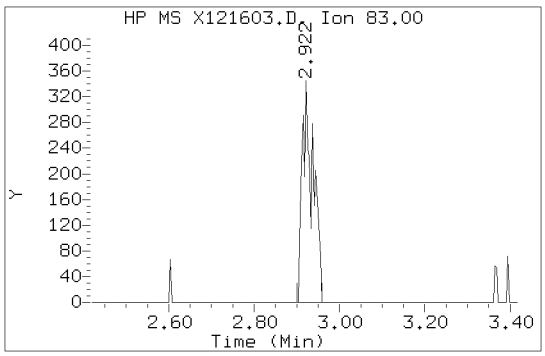

**BEFORE**

MASS
83
AREA
618
HEIGHT
345
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
83
AREA
618
HEIGHT
345
27-Dec-2022
16:07
linh
pham

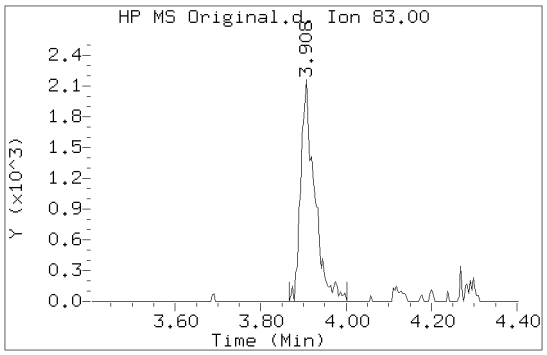



## Chloroform (67-66-3)

Reason Code:

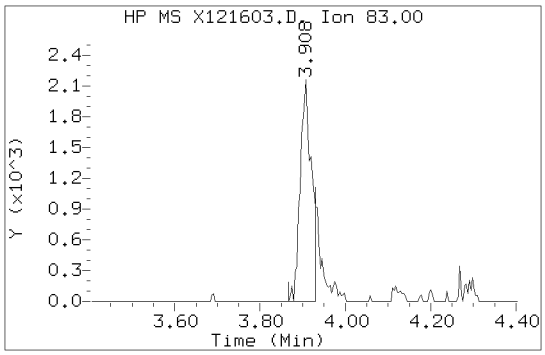
**BEFORE**

MASS
83
AREA
4949
HEIGHT
2160
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
83
AREA
4040
HEIGHT
2160
27-Dec-2022
16:07
linh
pham



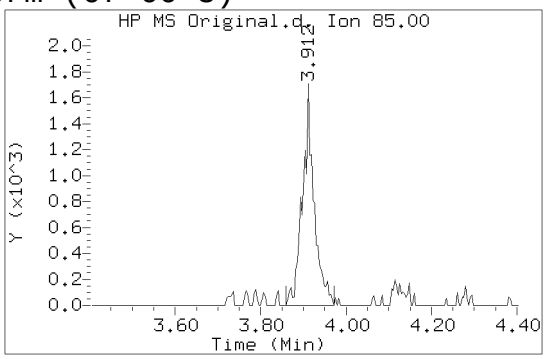
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

## Chloroform (67-66-3)

Reason Code:

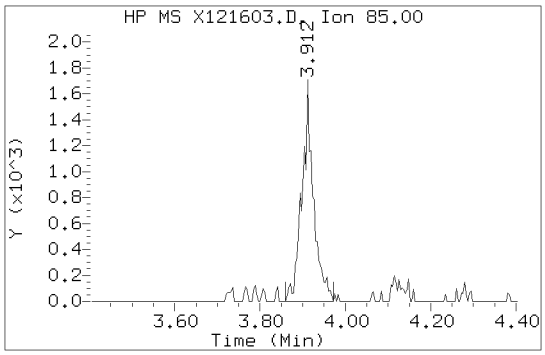
**BEFORE**

MASS
85
AREA
3222
HEIGHT
1709
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
85
AREA
3222
HEIGHT
1709
27-Dec-2022
16:07
linh
pham

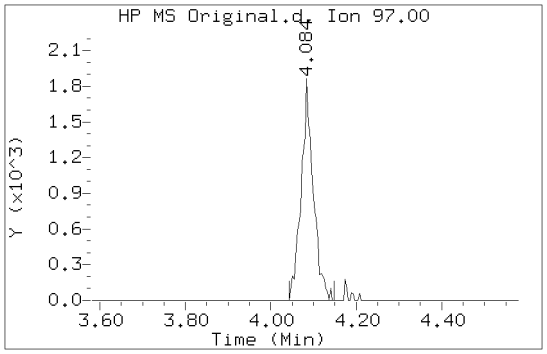



## 1,1,1-Trichloroethane (71-55-6)

Reason Code:

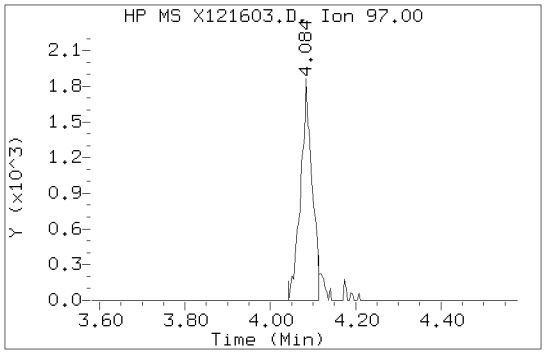
**BEFORE**

MASS
97
AREA
3710
HEIGHT
1863
27-Dec-2022
16:03
linh
pham



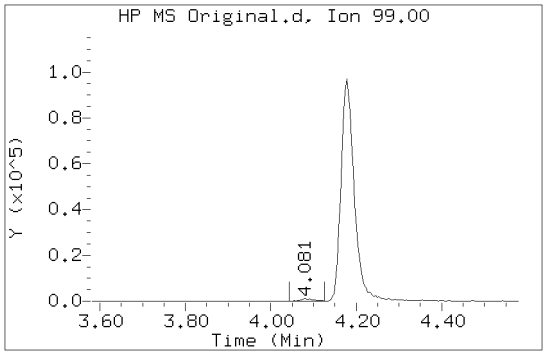

**AFTER**

MASS
97
AREA
3512
HEIGHT
1863
27-Dec-2022
16:07
linh
pham



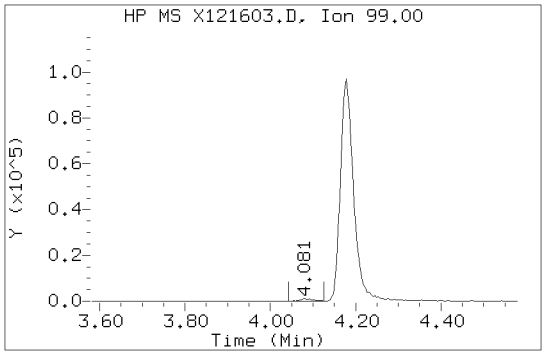

**BEFORE**

MASS
99
AREA
2299
HEIGHT
1029
27-Dec-2022
16:03
linh
pham



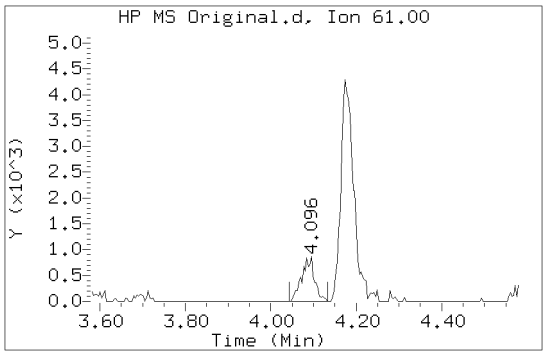

**AFTER**

MASS
99
AREA
2299
HEIGHT
1029
27-Dec-2022
16:07
linh
pham



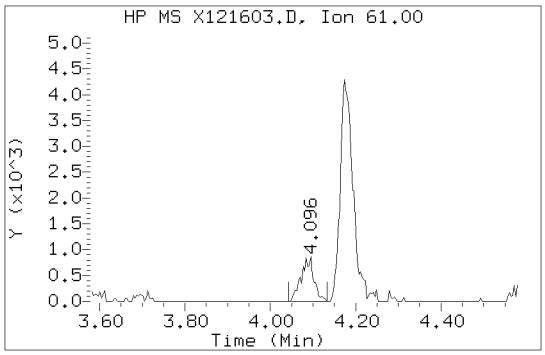

**BEFORE**

MASS
61
AREA
1801
HEIGHT
872
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
61
AREA
1801
HEIGHT
872
27-Dec-2022
16:07
linh
pham



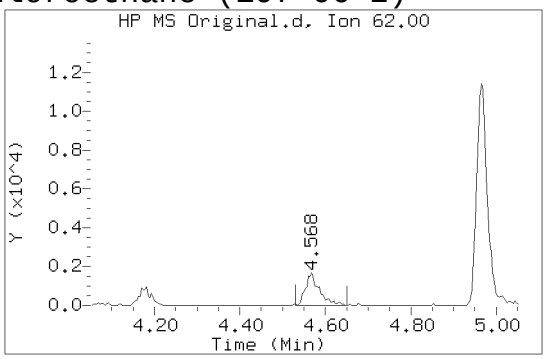
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

## 1,2-Dichloroethane (107-06-2)

Reason Code:

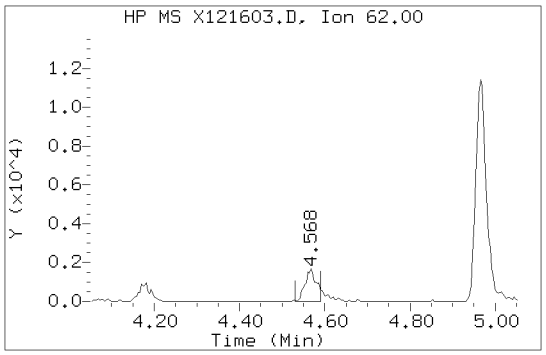
**BEFORE**

MASS
62
AREA
3822
HEIGHT
1678
27-Dec-2022
16:03
linh
pham



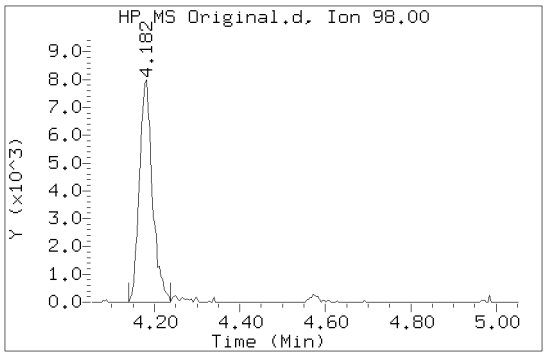

**AFTER**

MASS
62
AREA
3129
HEIGHT
1678
27-Dec-2022
16:07
linh
pham



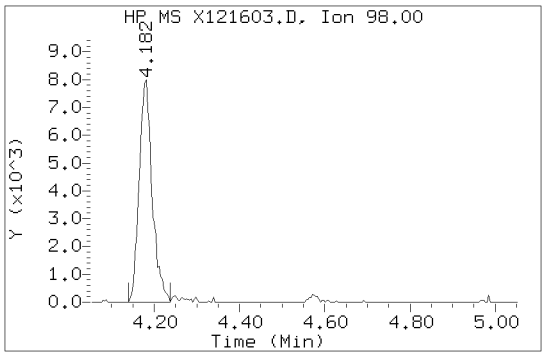

**BEFORE**

MASS
98
AREA
16918
HEIGHT
7987
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
98
AREA
16918
HEIGHT
7987
27-Dec-2022
16:07
linh
pham

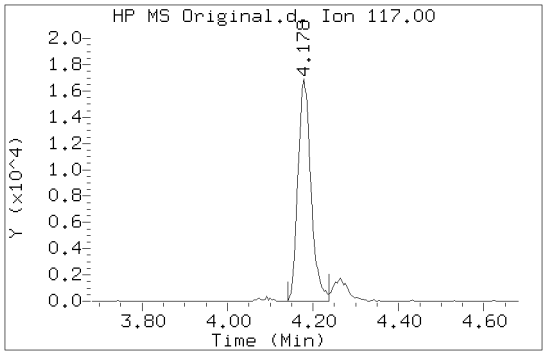



## Carbon Tetrachloride (56-23-5)

Reason Code:

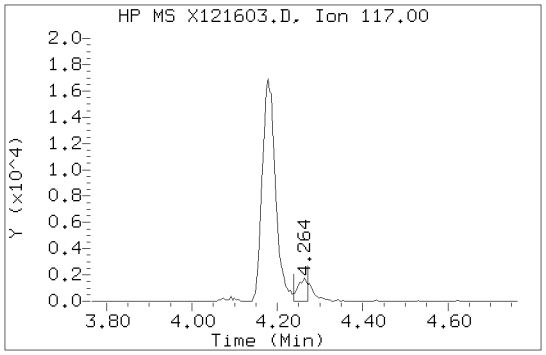
**BEFORE**

MASS
117
AREA
36559
HEIGHT
16920
27-Dec-2022
16:03
linh
pham



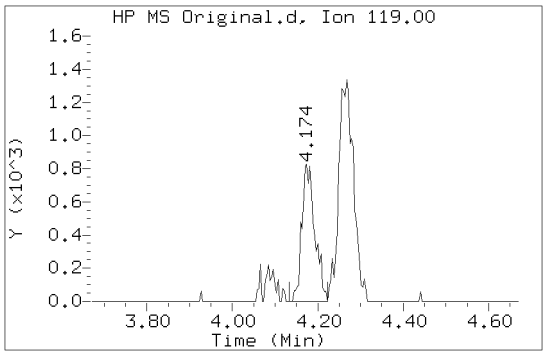

**AFTER**

MASS
117
AREA
2763
HEIGHT
1744
27-Dec-2022
16:07
linh
pham



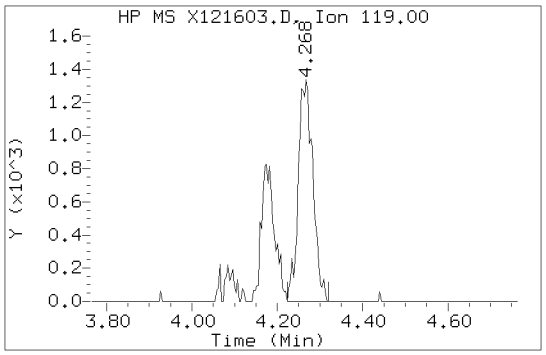

**BEFORE**

MASS
119
AREA
1780
HEIGHT
826
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
119
AREA
3227
HEIGHT
1337
27-Dec-2022
16:07
linh
pham

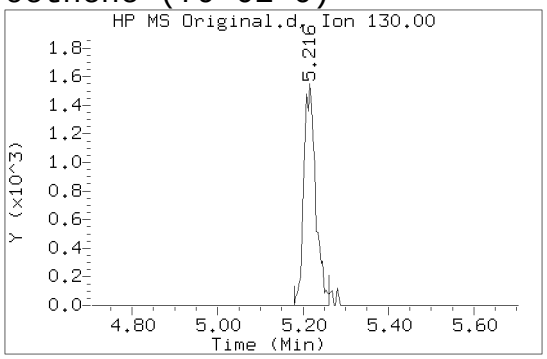


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

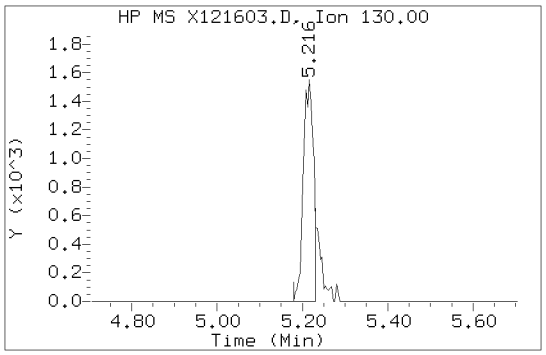
## Trichloroethene (79-01-6)

Reason Code:

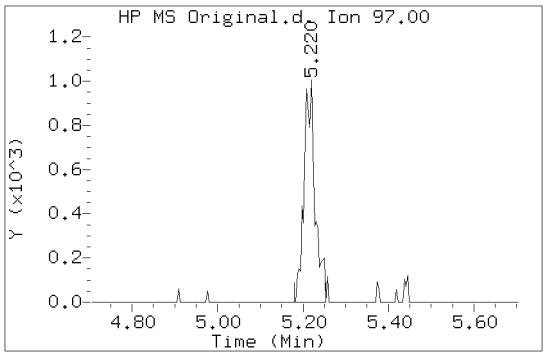
BEFORE
MASS
130
AREA
3011
HEIGHT
1551
27-Dec-2022
16:03
linh
pham



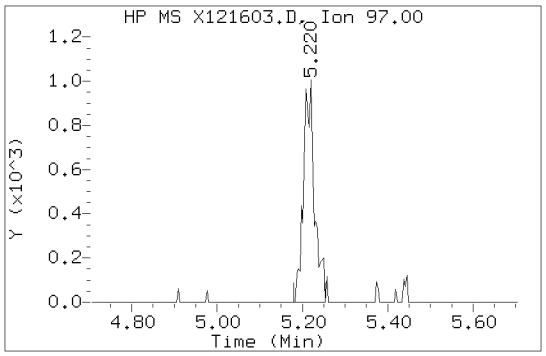

AFTER
MASS
130
AREA
2583
HEIGHT
1551
27-Dec-2022
16:07
linh
pham



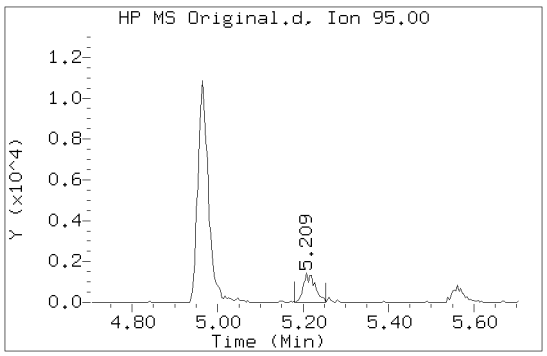

BEFORE
MASS
97
AREA
1808
HEIGHT
1006
27-Dec-2022
16:03
linh
pham



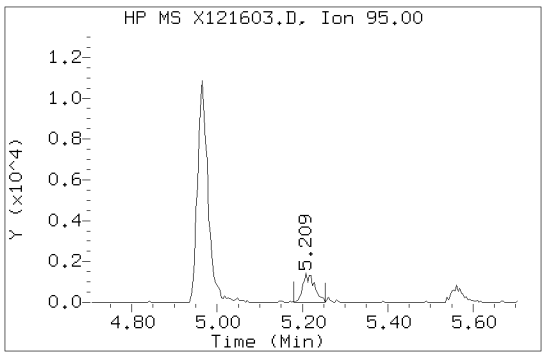

AFTER
MASS
97
AREA
1808
HEIGHT
1006
27-Dec-2022
16:07
linh
pham




BEFORE
MASS
95
AREA
2693
HEIGHT
1431
27-Dec-2022
16:03
linh
pham



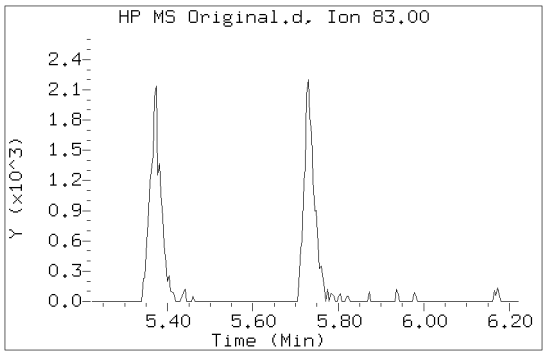

AFTER
MASS
95
AREA
2693
HEIGHT
1431
27-Dec-2022
16:07
linh
pham



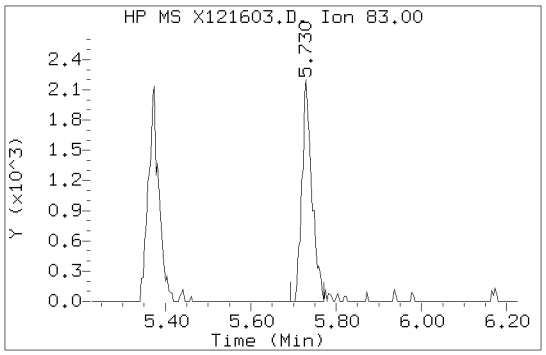

## Bromodichloromethane (75-27-4)

Reason Code:

BEFORE
MASS
83
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham




AFTER
MASS
83
AREA
3650
HEIGHT
2201
27-Dec-2022
16:07
linh
pham

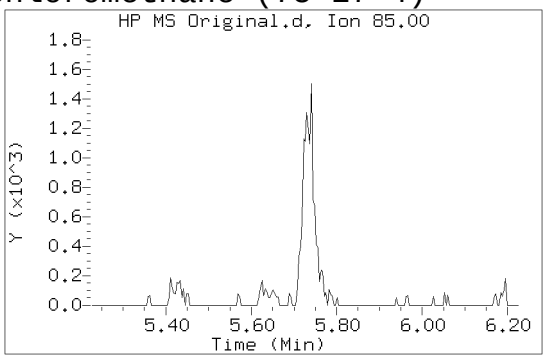


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

## Bromodichloromethane (75-27-4)

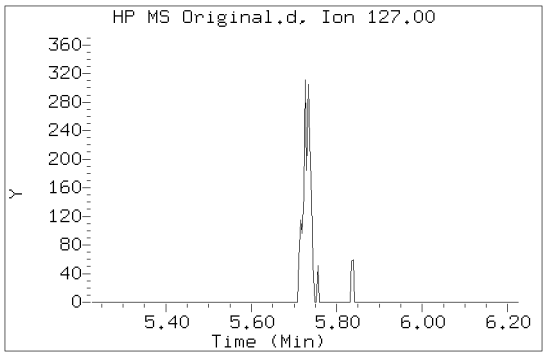
### BEFORE

MASS
85
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham




### BEFORE

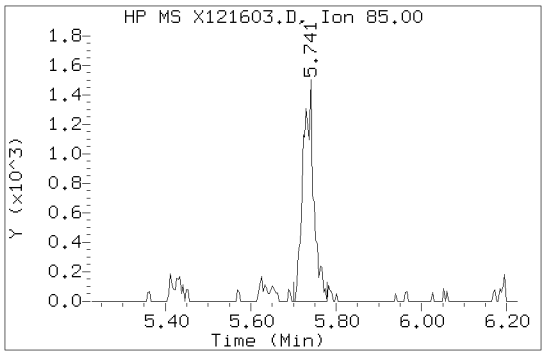
MASS
127
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham




Reason Code:

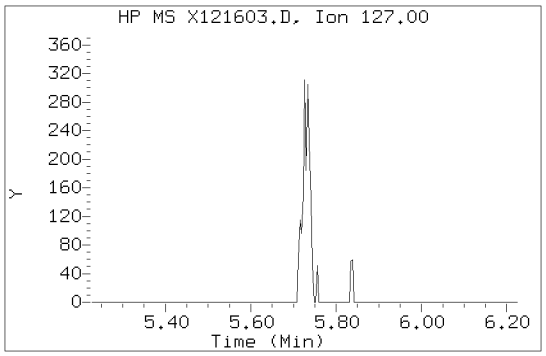
### AFTER

MASS
85
AREA
2639
HEIGHT
1503
27-Dec-2022
16:07
linh
pham




### AFTER

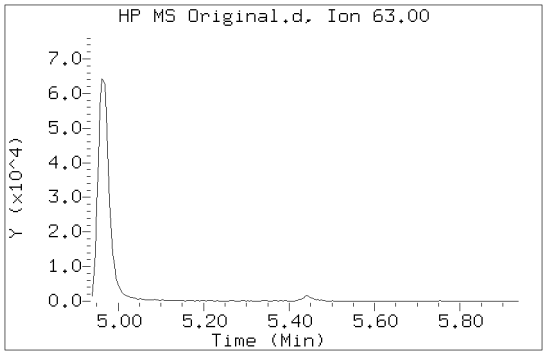
MASS
127
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham




## 1,2-Dichloropropane (78-87-5)

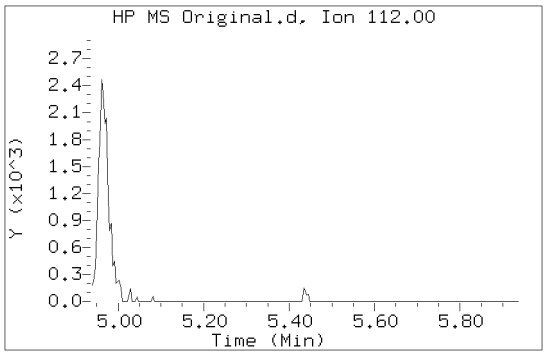
### BEFORE

MASS
63
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham




### BEFORE

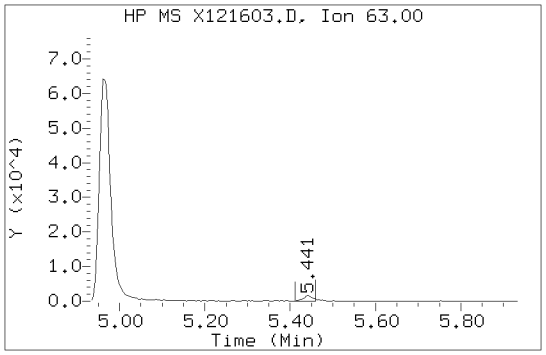
MASS
112
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham




Reason Code:

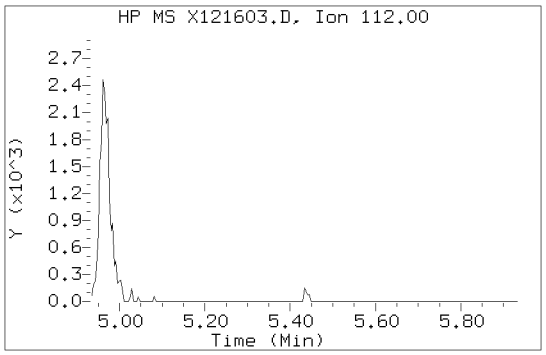
### AFTER

MASS
63
AREA
2449
HEIGHT
1587
27-Dec-2022
16:07
linh
pham




### AFTER

MASS
112
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham



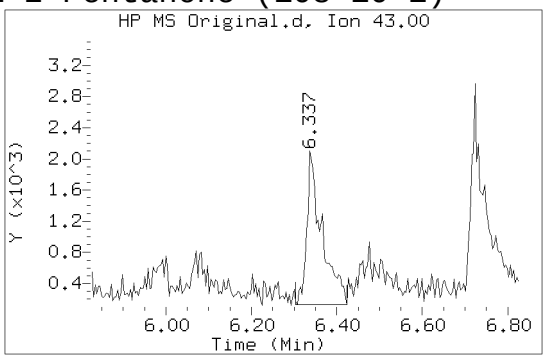
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

## 4-Methyl-2-Pentanone (108-10-1)

Reason Code:

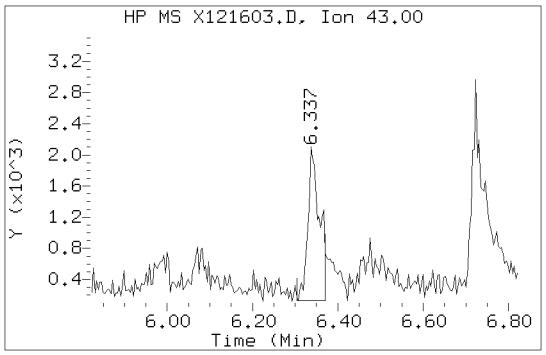
**BEFORE**

MASS
43
AREA
4873
HEIGHT
1970
27-Dec-2022
16:03
linh
pham



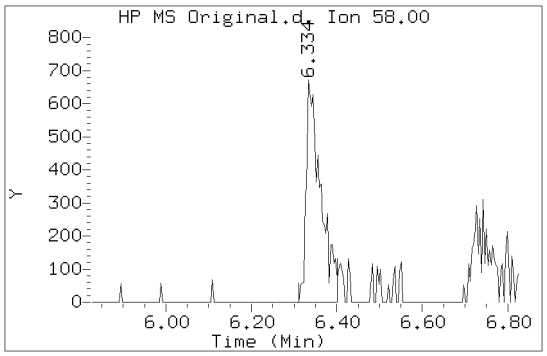

**AFTER**

MASS
43
AREA
3741
HEIGHT
1970
27-Dec-2022
16:07
linh
pham



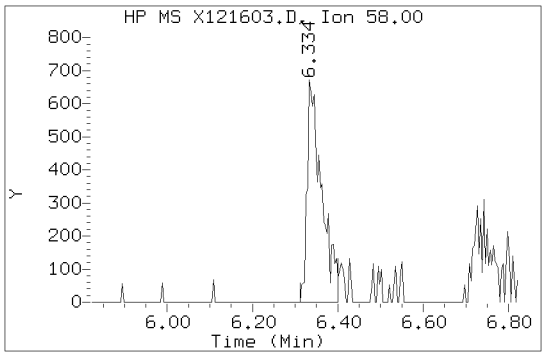

**BEFORE**

MASS
58
AREA
1585
HEIGHT
672
27-Dec-2022
16:03
linh
pham



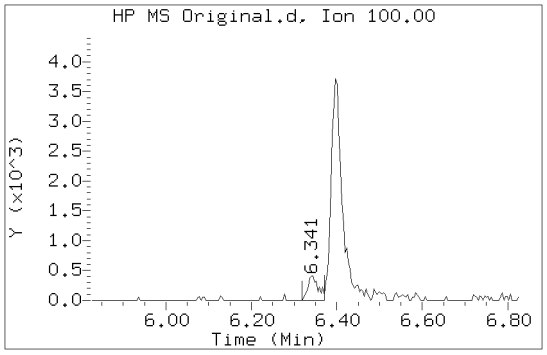

**AFTER**

MASS
58
AREA
1585
HEIGHT
672
27-Dec-2022
16:07
linh
pham



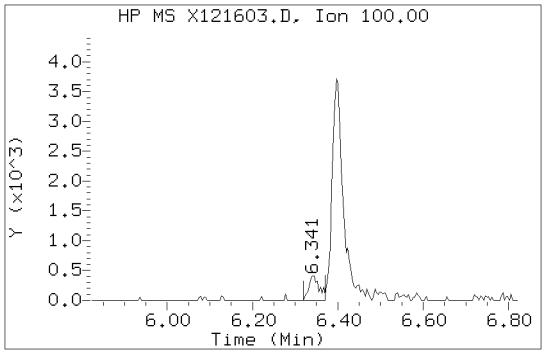

**BEFORE**

MASS
100
AREA
714
HEIGHT
412
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
100
AREA
714
HEIGHT
412
27-Dec-2022
16:07
linh
pham

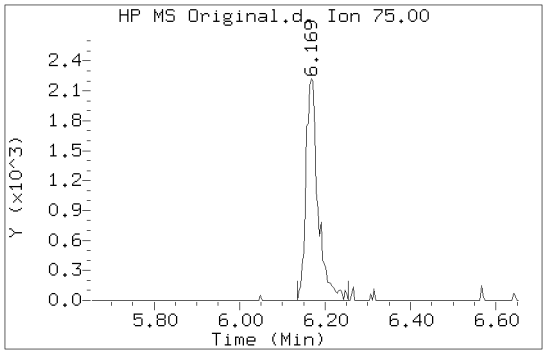



## cis-1,3-Dichloropropene (10061-01-5)

Reason Code:

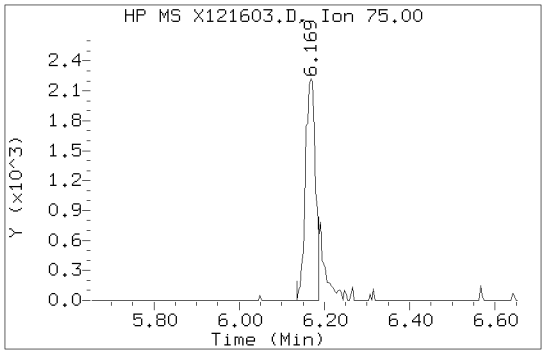
**BEFORE**

MASS
75
AREA
4432
HEIGHT
2222
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
75
AREA
3695
HEIGHT
2222
27-Dec-2022
16:07
linh
pham



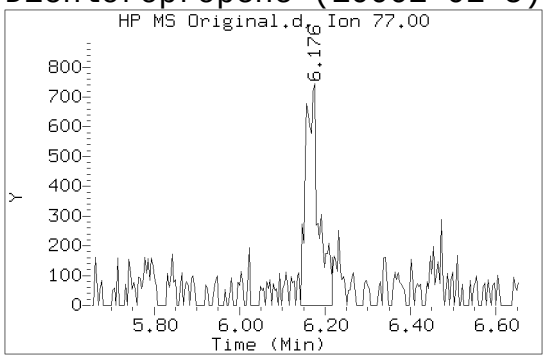
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

## cis-1,3-Dichloropropene (10061-01-5)

Reason Code:

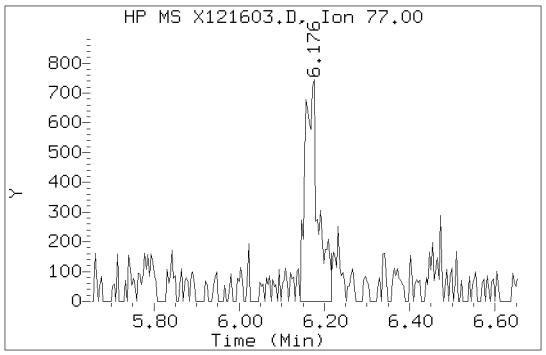
**BEFORE**

MASS
77
AREA
1607
HEIGHT
745
27-Dec-2022
16:03
linh
pham



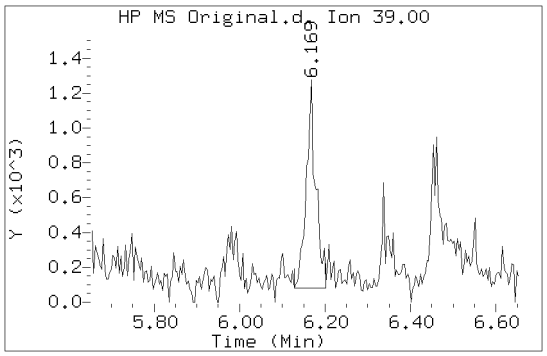

**AFTER**

MASS
77
AREA
1607
HEIGHT
745
27-Dec-2022
16:07
linh
pham



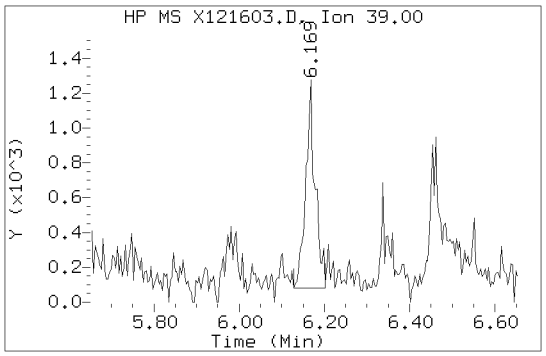

**BEFORE**

MASS
39
AREA
1836
HEIGHT
1193
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
39
AREA
1836
HEIGHT
1193
27-Dec-2022
16:07
linh
pham

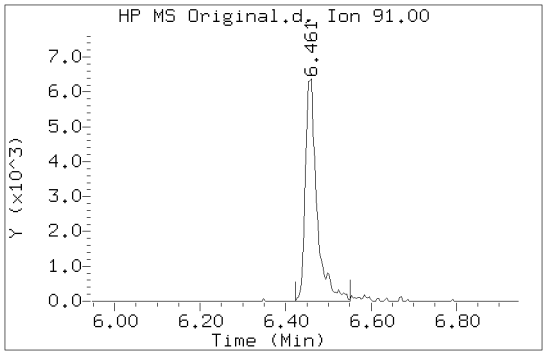



## Toluene (108-88-3)

Reason Code:

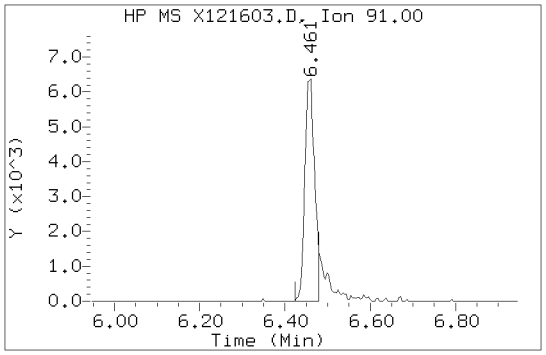
**BEFORE**

MASS
91
AREA
12225
HEIGHT
6374
27-Dec-2022
16:03
linh
pham



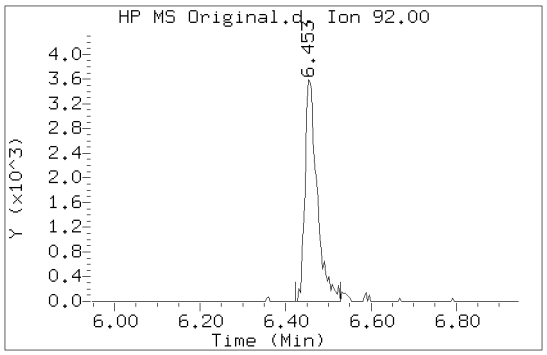

**AFTER**

MASS
91
AREA
10374
HEIGHT
6374
27-Dec-2022
16:07
linh
pham



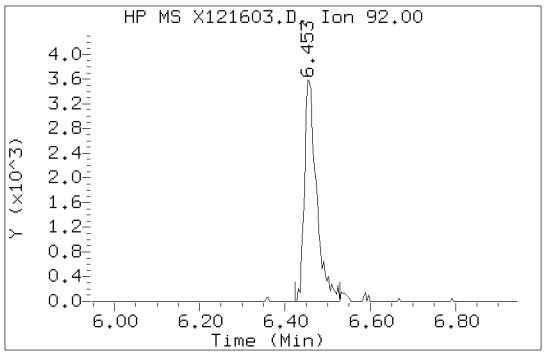

**BEFORE**

MASS
92
AREA
7180
HEIGHT
3591
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
92
AREA
7180
HEIGHT
3591
27-Dec-2022
16:07
linh
pham



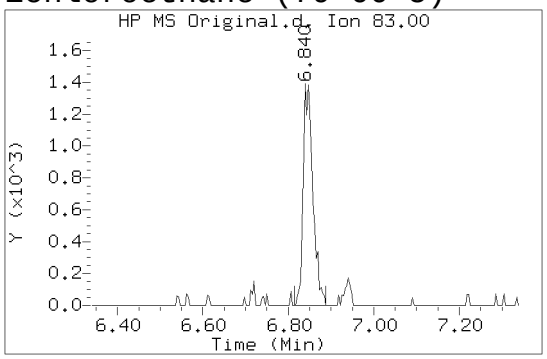
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

## 1,1,2-Trichloroethane (79-00-5)

Reason Code:

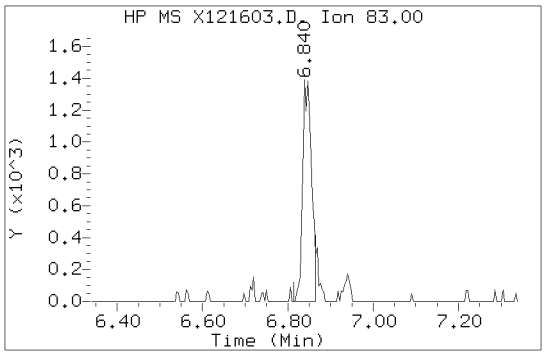
**BEFORE**

MASS
83
AREA
2247
HEIGHT
1391
27-Dec-2022
16:03
linh
pham



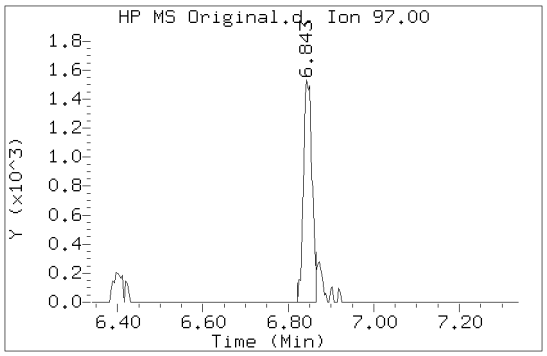

**AFTER**

MASS
83
AREA
2092
HEIGHT
1391
27-Dec-2022
16:07
linh
pham



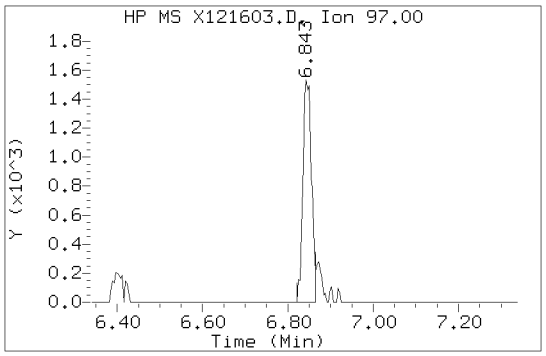

**BEFORE**

MASS
97
AREA
2224
HEIGHT
1532
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
97
AREA
2224
HEIGHT
1532
27-Dec-2022
16:07
linh
pham

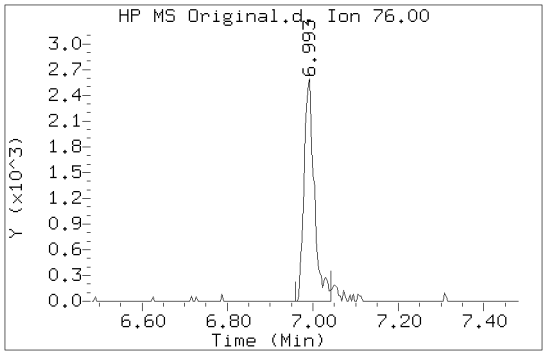



## 1,3-Dichloropropane (142-28-9)

Reason Code:

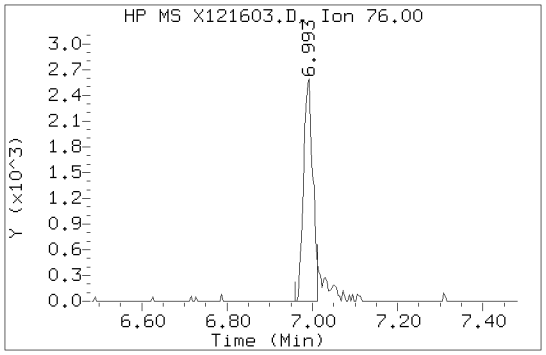
**BEFORE**

MASS
76
AREA
4415
HEIGHT
2592
27-Dec-2022
16:03
linh
pham



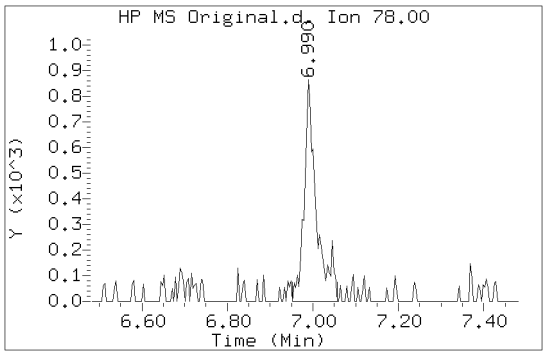

**AFTER**

MASS
76
AREA
4005
HEIGHT
2592
27-Dec-2022
16:07
linh
pham



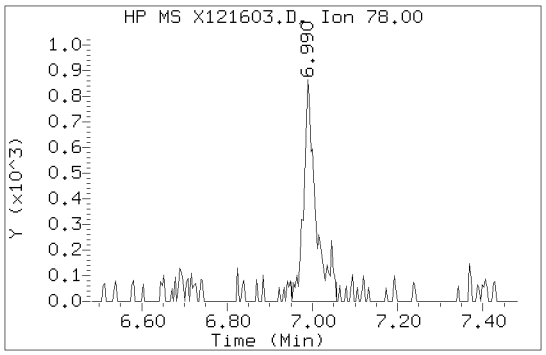

**BEFORE**

MASS
78
AREA
1727
HEIGHT
864
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
78
AREA
1727
HEIGHT
864
27-Dec-2022
16:07
linh
pham



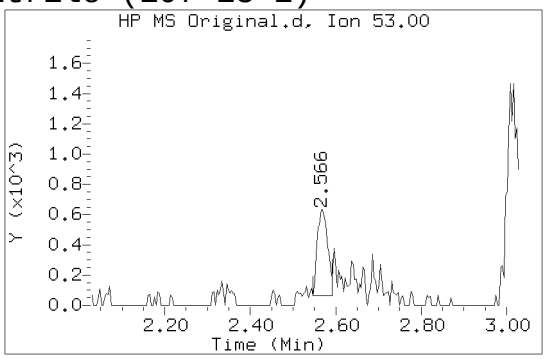
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

## Acrylonitrile (107-13-1)

Reason Code:

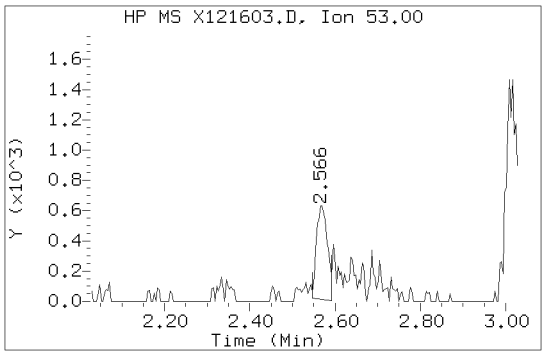
**BEFORE**

MASS
53
AREA
975
HEIGHT
571
27-Dec-2022
16:03
linh
pham



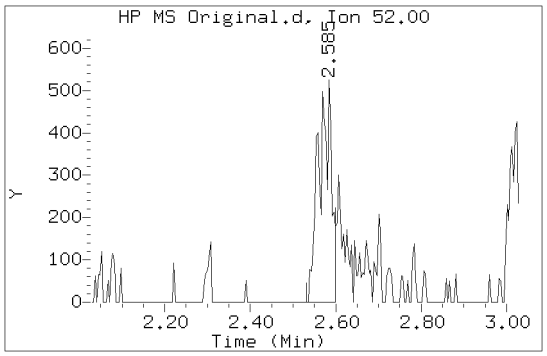

**AFTER**

MASS
53
AREA
1118
HEIGHT
618
27-Dec-2022
16:07
linh
pham



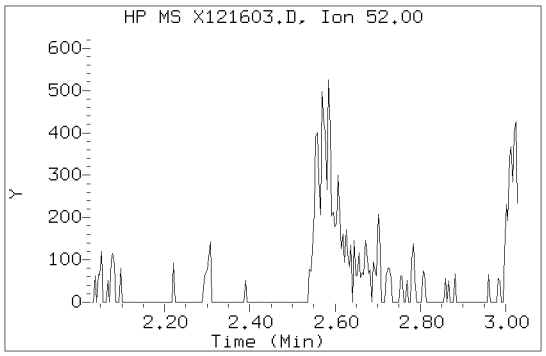

**BEFORE**

MASS
52
AREA
1100
HEIGHT
525
27-Dec-2022
16:03
linh
pham



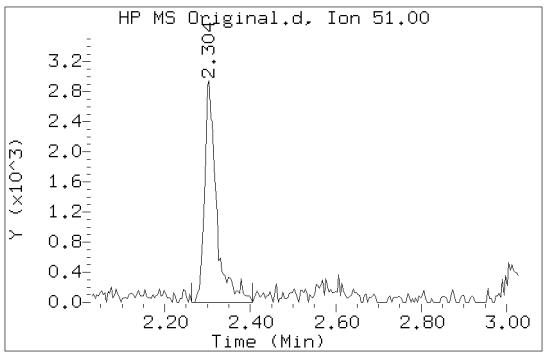

**AFTER**

MASS
52
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham



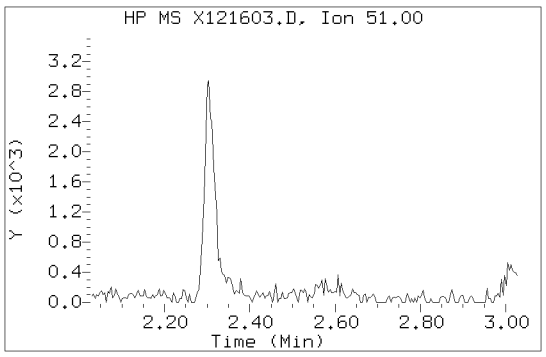

**BEFORE**

MASS
51
AREA
5708
HEIGHT
2946
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
51
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham

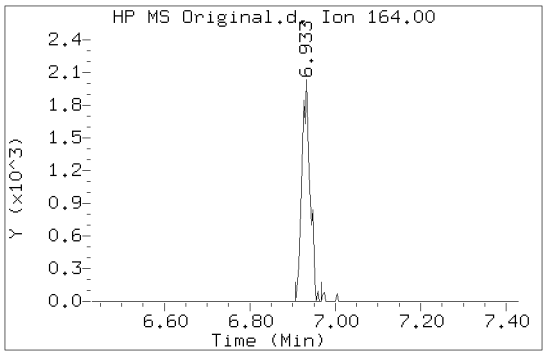



## Tetrachloroethene (127-18-4)

Reason Code:

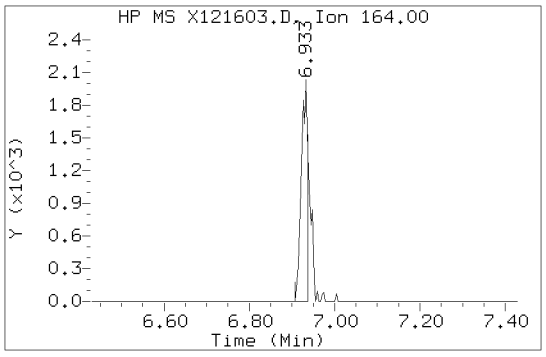
**BEFORE**

MASS
164
AREA
2777
HEIGHT
2036
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
164
AREA
2131
HEIGHT
2036
27-Dec-2022
16:07
linh
pham



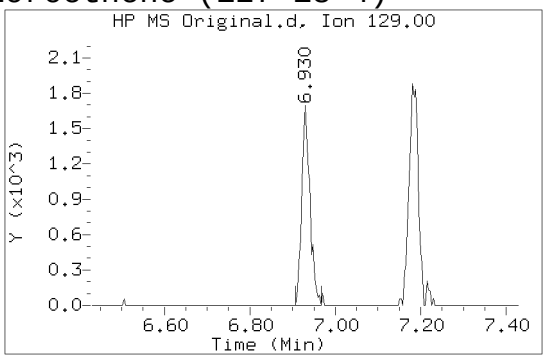
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

## Tetrachloroethene (127-18-4)

Reason Code:

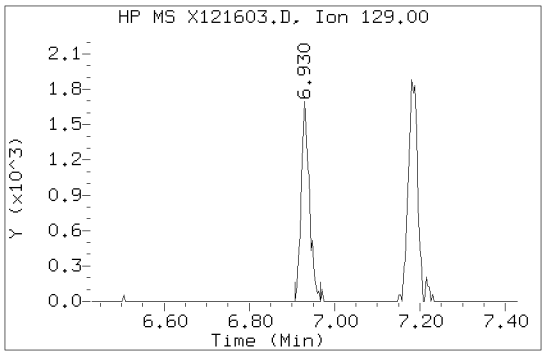
**BEFORE**

MASS
129
AREA
2342
HEIGHT
1697
27-Dec-2022
16:03
linh
pham



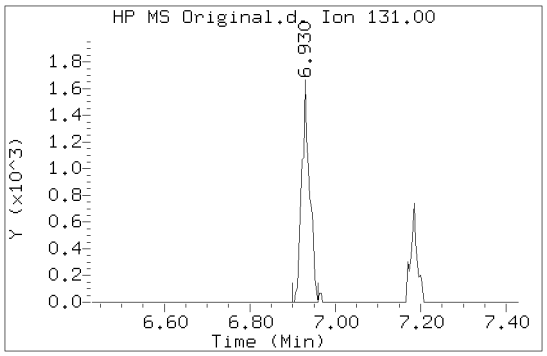

**AFTER**

MASS
129
AREA
2342
HEIGHT
1697
27-Dec-2022
16:07
linh
pham



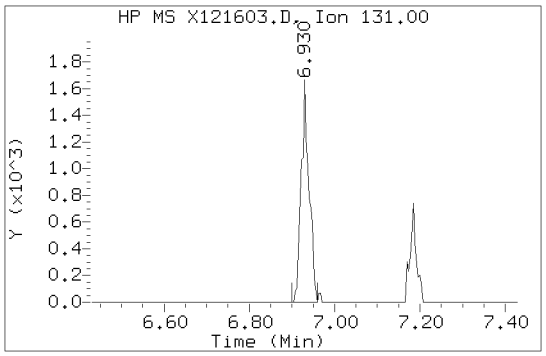

**BEFORE**

MASS
131
AREA
2193
HEIGHT
1665
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
131
AREA
2193
HEIGHT
1665
27-Dec-2022
16:07
linh
pham

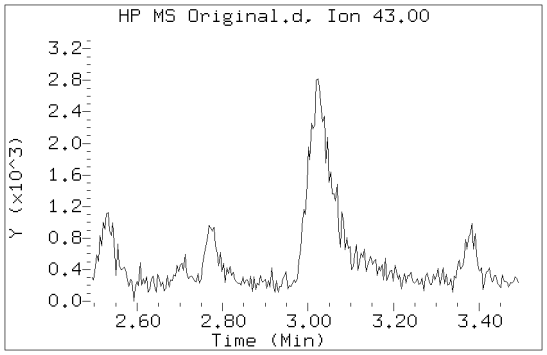



## Vinyl Acetate (108-05-4)

Reason Code:

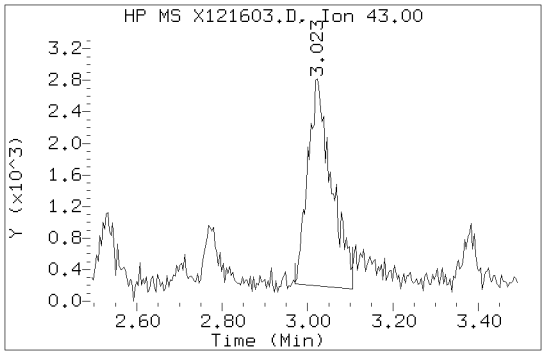
**BEFORE**

MASS
43
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



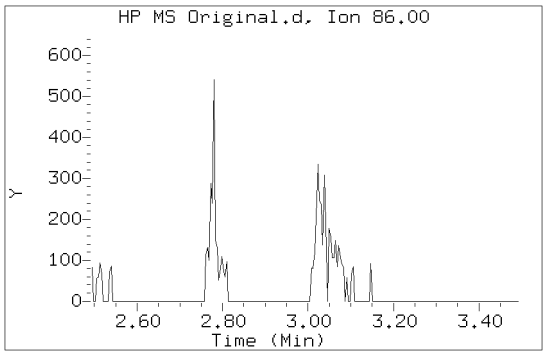

**AFTER**

MASS
43
AREA
10138
HEIGHT
2622
27-Dec-2022
16:07
linh
pham



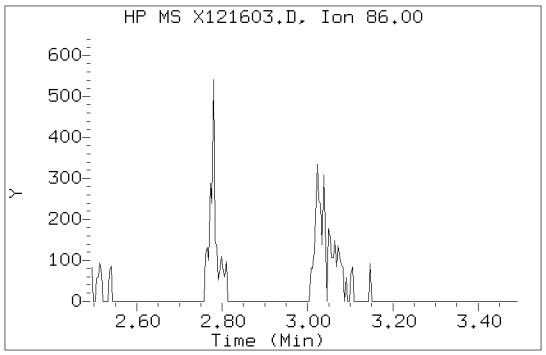

**BEFORE**

MASS
86
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
86
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham

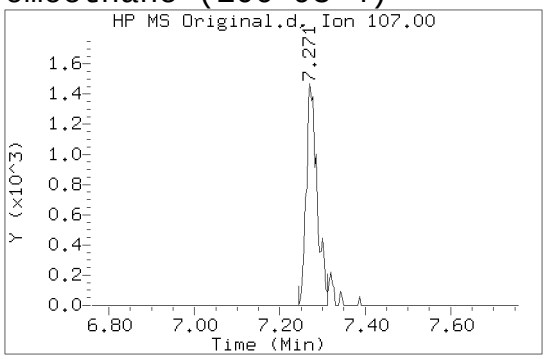


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

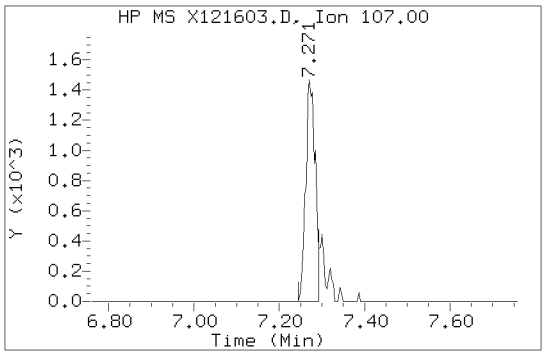
## 1,2-Dibromoethane (106-93-4)

Reason Code:

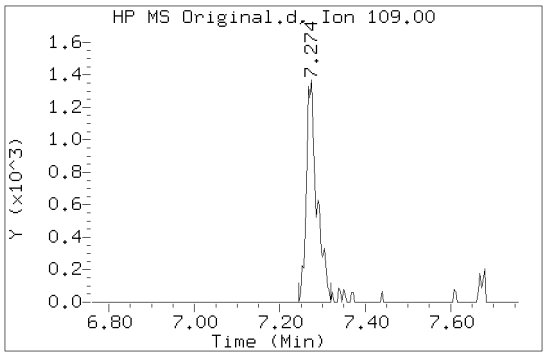
BEFORE
MASS
107
AREA
2627
HEIGHT
1469
27-Dec-2022
16:03
linh
pham



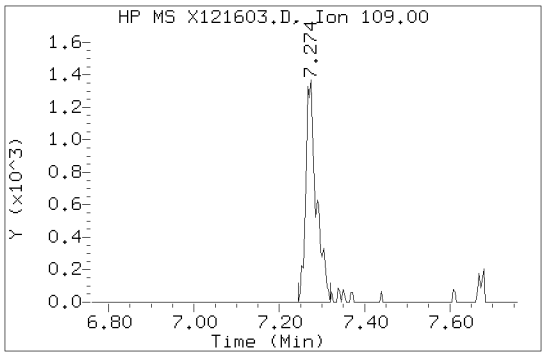

AFTER
MASS
107
AREA
2340
HEIGHT
1469
27-Dec-2022
16:07
linh
pham




BEFORE
MASS
109
AREA
2396
HEIGHT
1369
27-Dec-2022
16:03
linh
pham



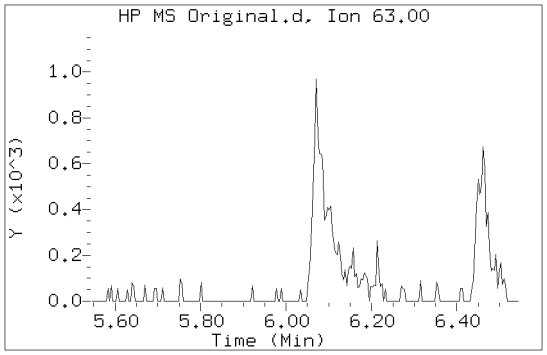

AFTER
MASS
109
AREA
2396
HEIGHT
1369
27-Dec-2022
16:07
linh
pham



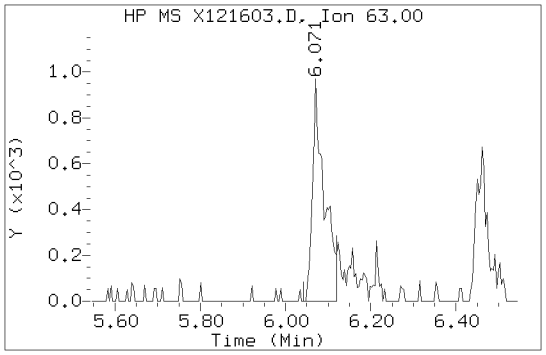

## 2-Chloroethylvinyl ether (110-75-8)

Reason Code:

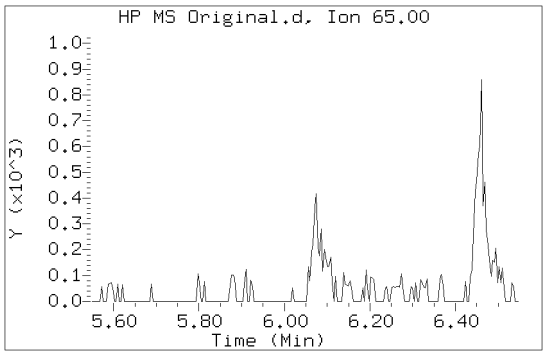
BEFORE
MASS
63
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



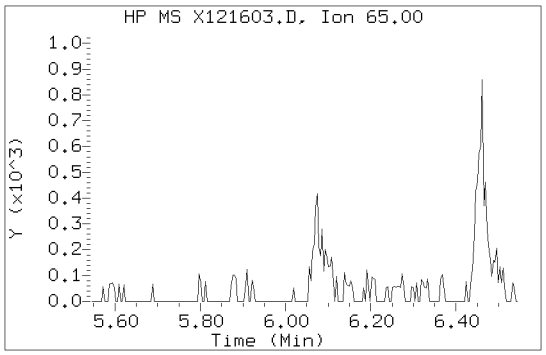

AFTER
MASS
63
AREA
1861
HEIGHT
970
27-Dec-2022
16:07
linh
pham




BEFORE
MASS
65
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham




AFTER
MASS
65
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham



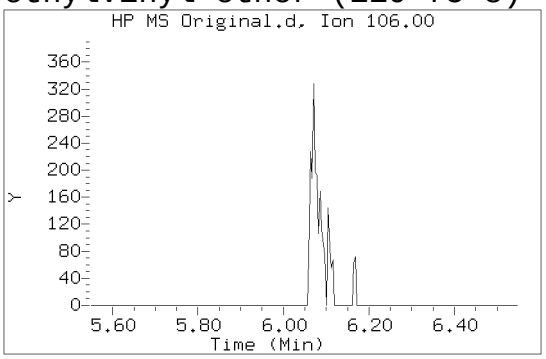
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

## 2-Chloroethylvinyl ether (110-75-8)

Reason Code:

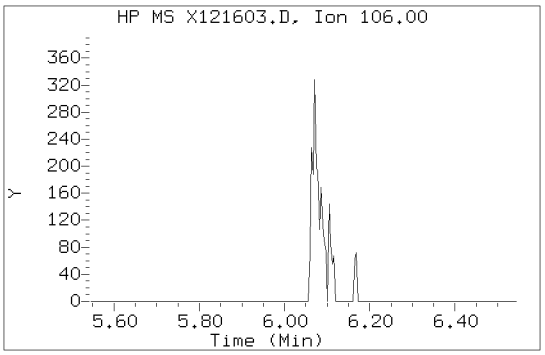
**BEFORE**

MASS
106
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
106
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham

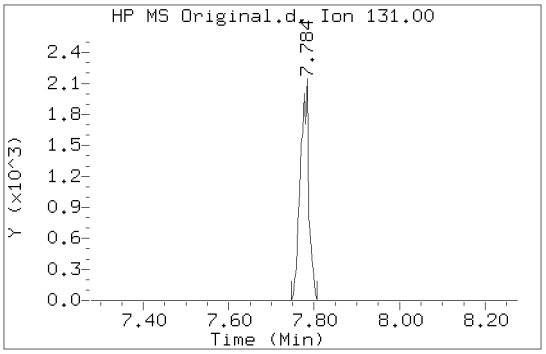



## 1,1,1,2-Tetrachloroethane (630-20-6)

Reason Code:

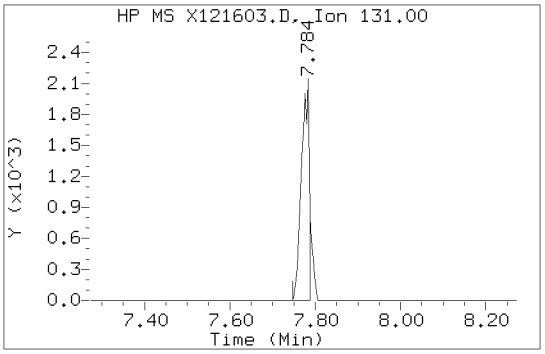
**BEFORE**

MASS
131
AREA
3036
HEIGHT
2146
27-Dec-2022
16:03
linh
pham



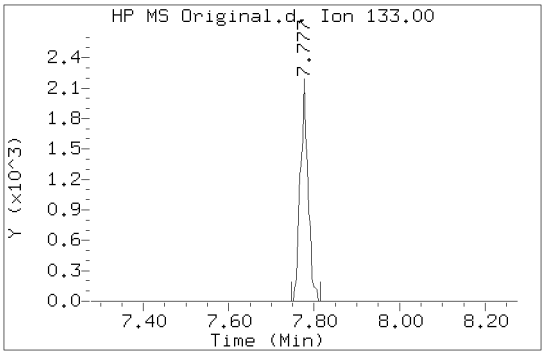

**AFTER**

MASS
131
AREA
2741
HEIGHT
2146
27-Dec-2022
16:07
linh
pham



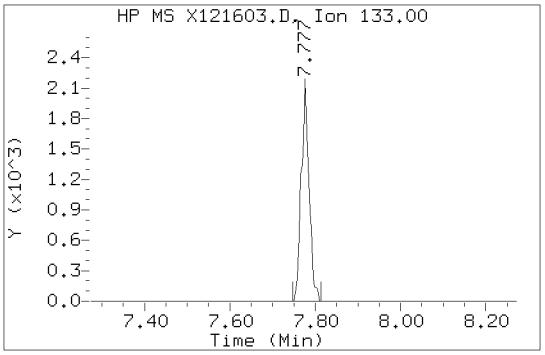

**BEFORE**

MASS
133
AREA
2829
HEIGHT
2191
27-Dec-2022
16:03
linh
pham



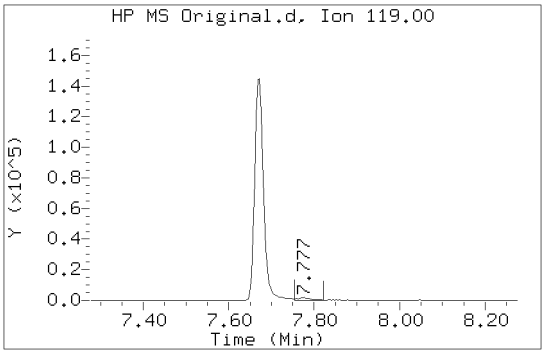

**AFTER**

MASS
133
AREA
2829
HEIGHT
2191
27-Dec-2022
16:07
linh
pham



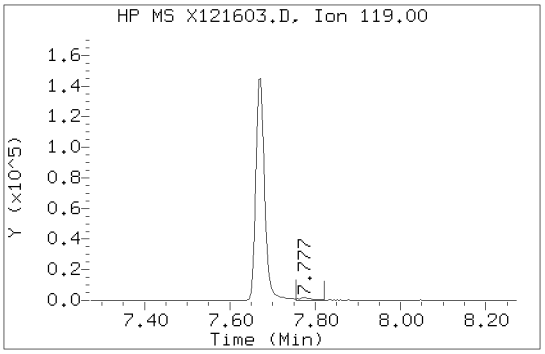

**BEFORE**

MASS
119
AREA
2971
HEIGHT
1971
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
119
AREA
2971
HEIGHT
1971
27-Dec-2022
16:07
linh
pham



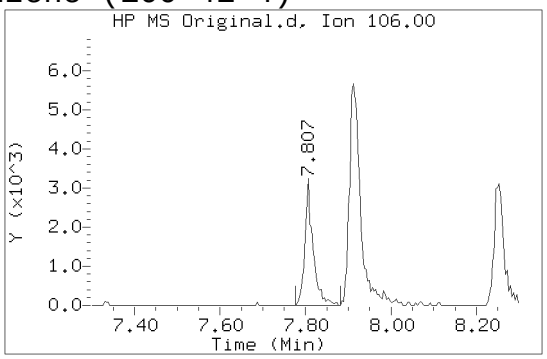
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

## Ethylbenzene (100-41-4)

Reason Code:

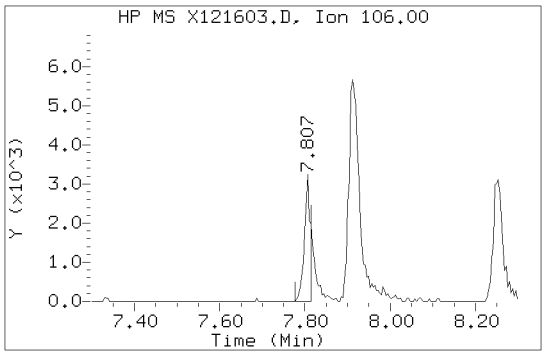
BEFORE

MASS
106
AREA
4331
HEIGHT
3242
27-Dec-2022
16:03
linh
pham



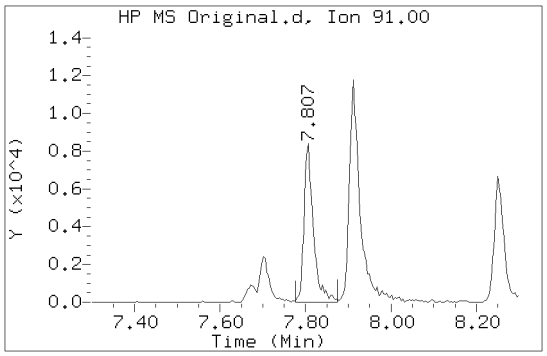

AFTER

MASS
106
AREA
3064
HEIGHT
3242
27-Dec-2022
16:07
linh
pham



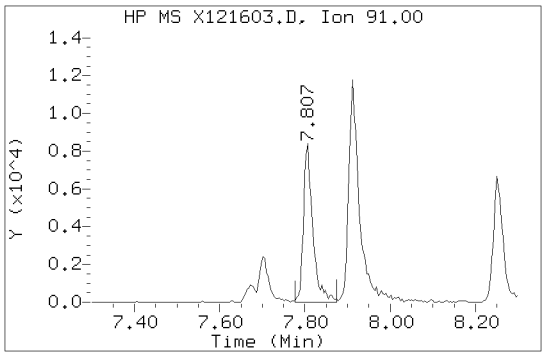

BEFORE

MASS
91
AREA
13136
HEIGHT
8410
27-Dec-2022
16:03
linh
pham




AFTER

MASS
91
AREA
13136
HEIGHT
8410
27-Dec-2022
16:07
linh
pham

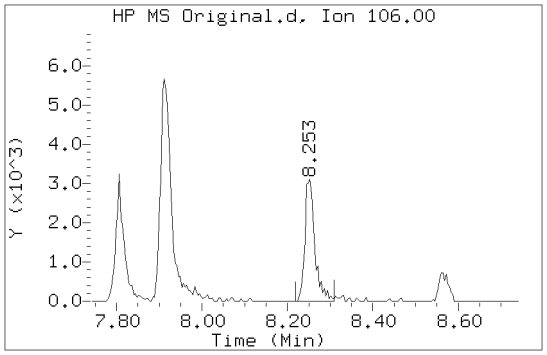



## o-Xylene (95-47-6)

Reason Code:

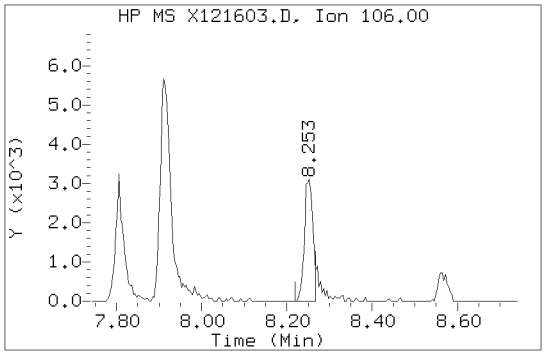
BEFORE

MASS
106
AREA
5100
HEIGHT
3111
27-Dec-2022
16:03
linh
pham



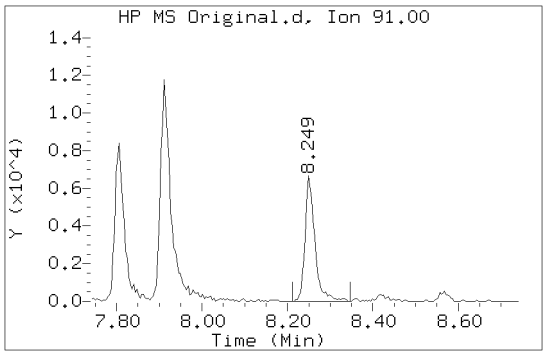

AFTER

MASS
106
AREA
4412
HEIGHT
3111
27-Dec-2022
16:07
linh
pham



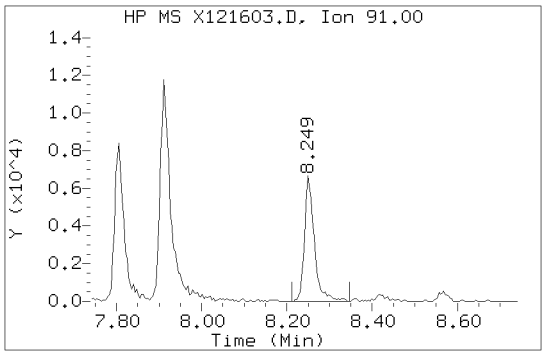

BEFORE

MASS
91
AREA
10808
HEIGHT
6665
27-Dec-2022
16:03
linh
pham




AFTER

MASS
91
AREA
10808
HEIGHT
6665
27-Dec-2022
16:07
linh
pham

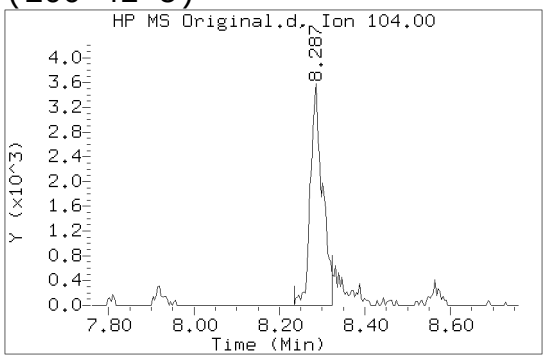


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

## Styrene (100-42-5)

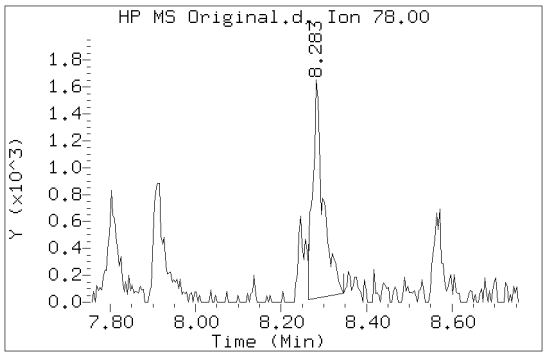
**BEFORE**

MASS
104
AREA
7074
HEIGHT
3581
27-Dec-2022
16:03
linh
pham




**BEFORE**

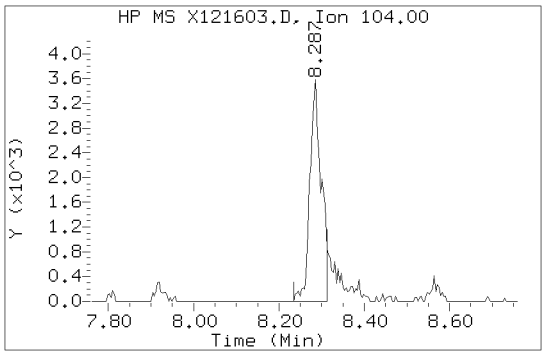
MASS
78
AREA
2827
HEIGHT
1622
27-Dec-2022
16:03
linh
pham




Reason Code:

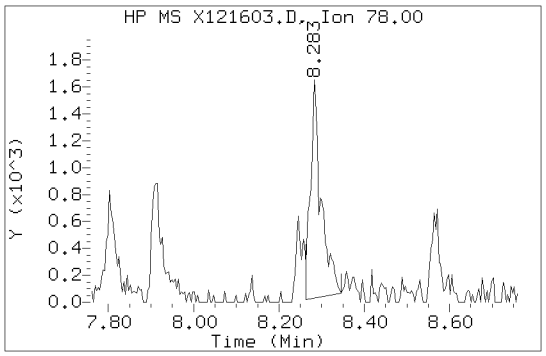
**AFTER**

MASS
104
AREA
6634
HEIGHT
3581
27-Dec-2022
16:07
linh
pham




**AFTER**

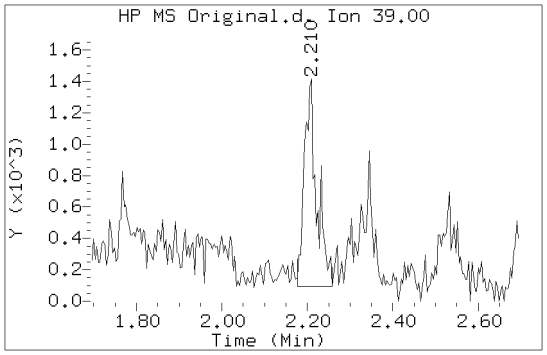
MASS
78
AREA
2827
HEIGHT
1622
27-Dec-2022
16:07
linh
pham




## Acetonitrile (75-05-8)

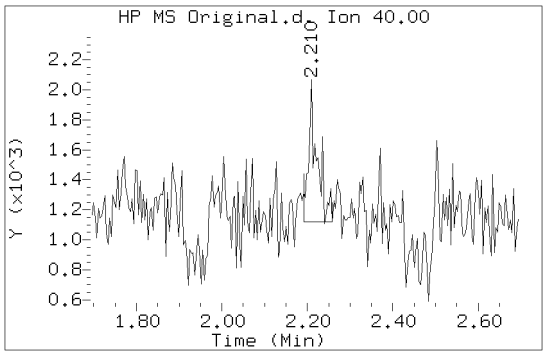
**BEFORE**

MASS
39
AREA
2674
HEIGHT
1321
27-Dec-2022
16:03
linh
pham




**BEFORE**

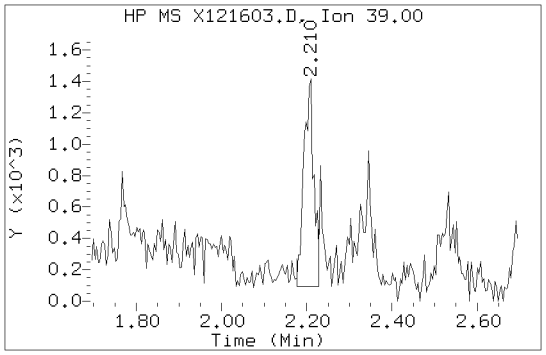
MASS
40
AREA
1296
HEIGHT
946
27-Dec-2022
16:03
linh
pham




Reason Code:

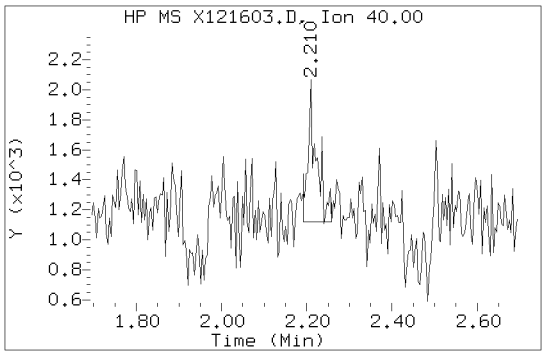
**AFTER**

MASS
39
AREA
2204
HEIGHT
1321
27-Dec-2022
16:07
linh
pham




**AFTER**

MASS
40
AREA
1296
HEIGHT
946
27-Dec-2022
16:07
linh
pham



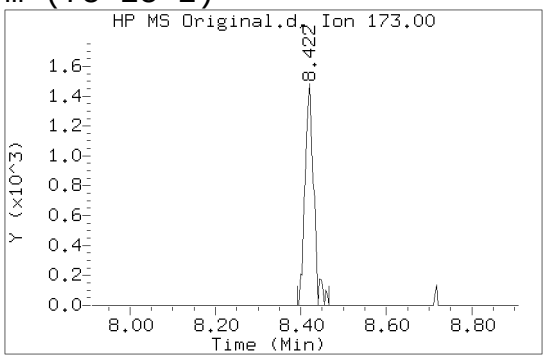
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

## Bromoform (75-25-2)

Reason Code:

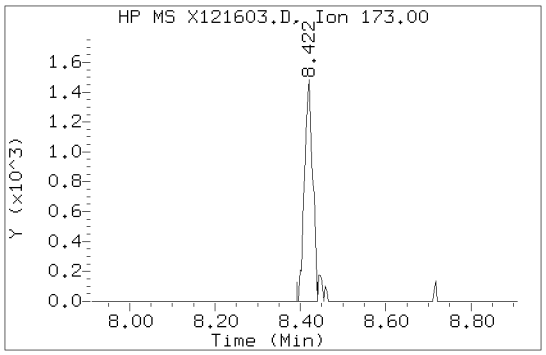
**BEFORE**

MASS
173
AREA
2158
HEIGHT
1483
27-Dec-2022
16:03
linh
pham



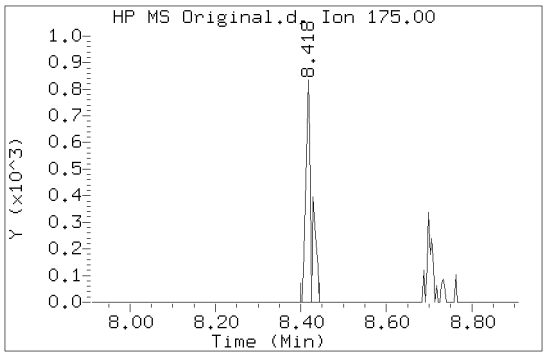

**AFTER**

MASS
173
AREA
2013
HEIGHT
1483
27-Dec-2022
16:07
linh
pham



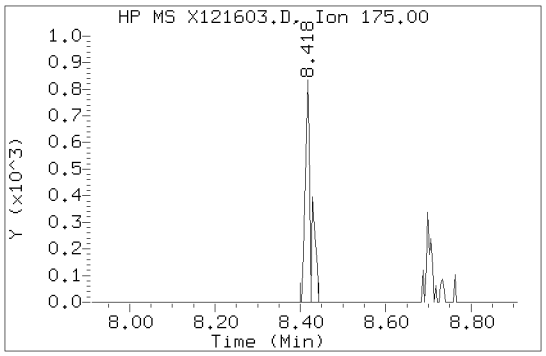

**BEFORE**

MASS
175
AREA
807
HEIGHT
835
27-Dec-2022
16:03
linh
pham



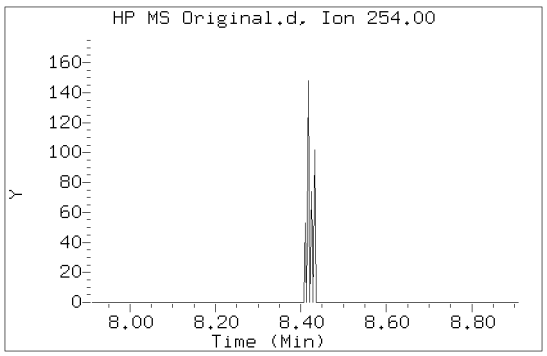

**AFTER**

MASS
175
AREA
807
HEIGHT
835
27-Dec-2022
16:07
linh
pham



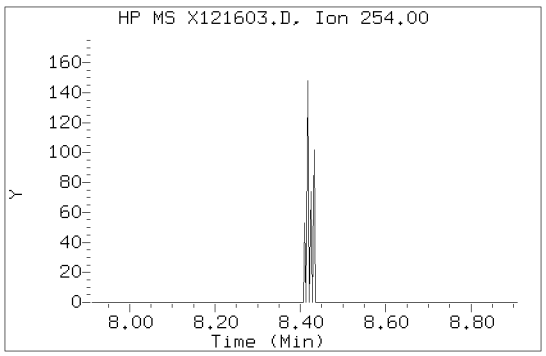

**BEFORE**

MASS
254
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
254
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham

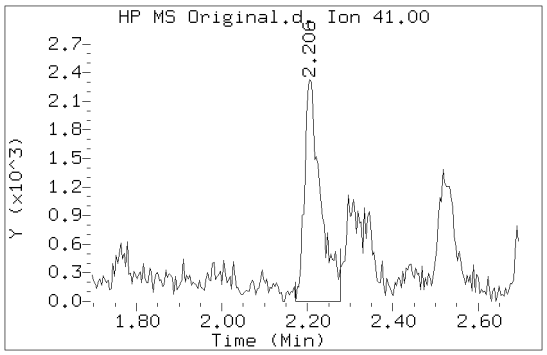



## Allyl Chloride (107-05-1)

Reason Code:

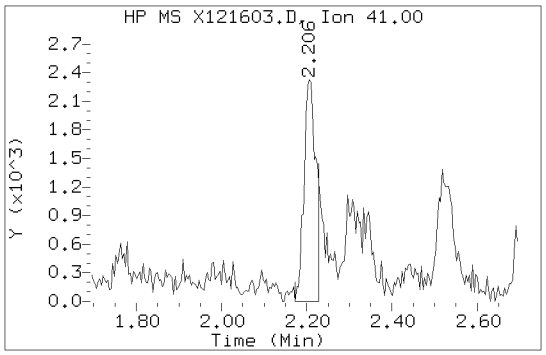
**BEFORE**

MASS
41
AREA
6169
HEIGHT
2326
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
41
AREA
4574
HEIGHT
2326
27-Dec-2022
16:07
linh
pham



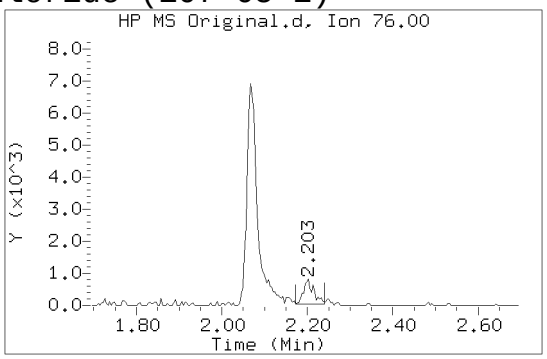
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

## Allyl Chloride (107-05-1)

Reason Code:

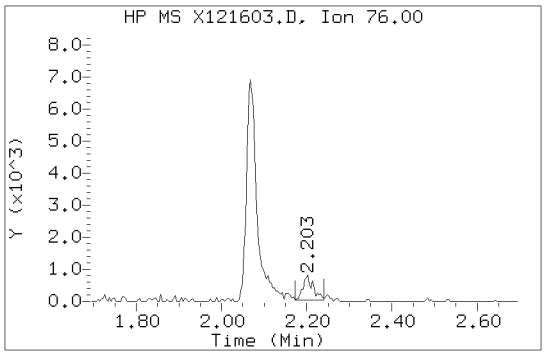
**BEFORE**

MASS
76
AREA
1254
HEIGHT
763
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
76
AREA
1254
HEIGHT
763
27-Dec-2022
16:07
linh
pham

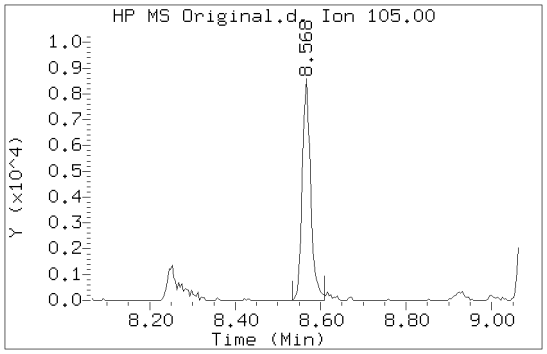



## Isopropylbenzene (98-82-8)

Reason Code:

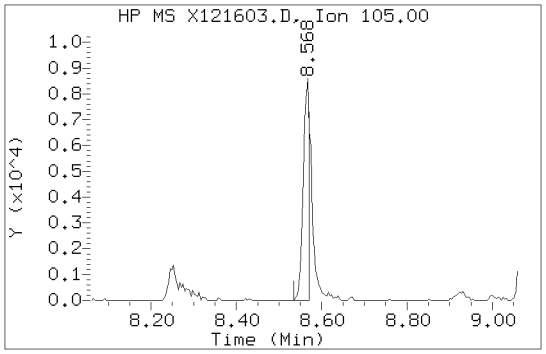
**BEFORE**

MASS
105
AREA
12091
HEIGHT
8588
27-Dec-2022
16:03
linh
pham



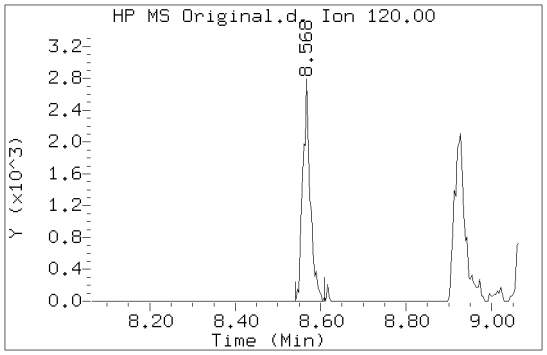

**AFTER**

MASS
105
AREA
8757
HEIGHT
8588
27-Dec-2022
16:07
linh
pham



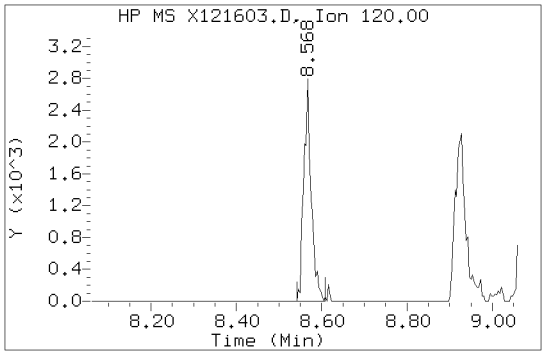

**BEFORE**

MASS
120
AREA
3462
HEIGHT
2793
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
120
AREA
3462
HEIGHT
2793
27-Dec-2022
16:07
linh
pham

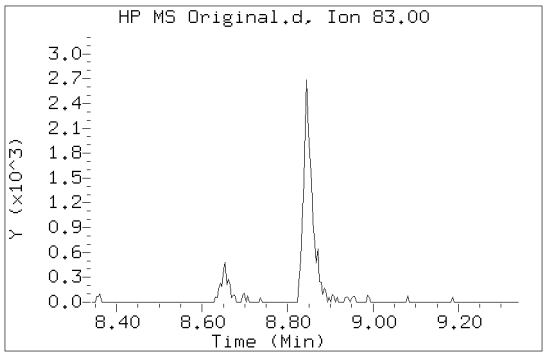



## 1,1,2,2-Tetrachloroethane (79-34-5)

Reason Code:

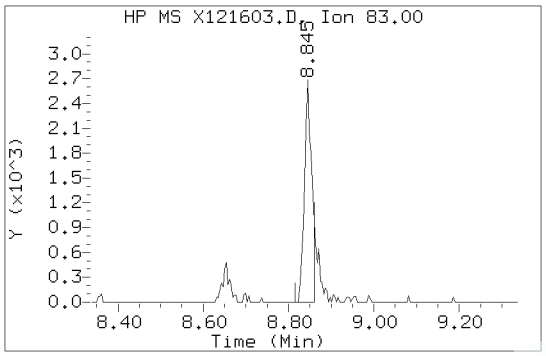
**BEFORE**

MASS
83
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
83
AREA
3194
HEIGHT
2685
27-Dec-2022
16:07
linh
pham

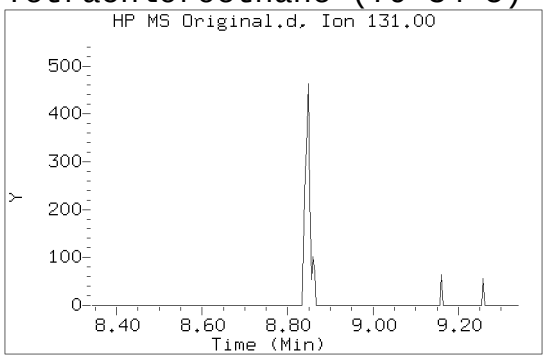


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

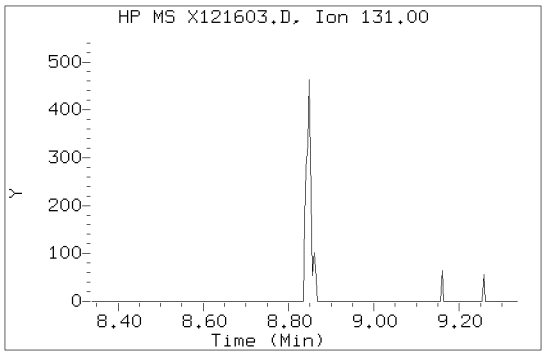
## 1,1,2,2-Tetrachloroethane (79-34-5)

Reason Code:

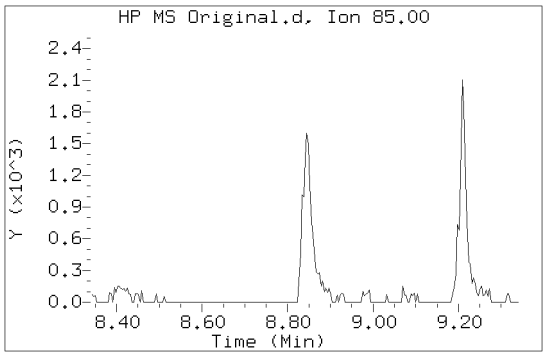
BEFORE
MASS
131
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



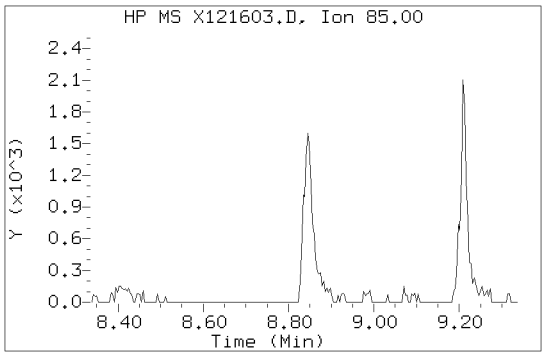

AFTER
MASS
131
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham




BEFORE
MASS
85
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



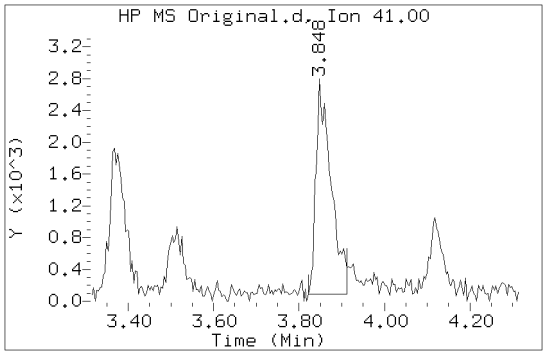

AFTER
MASS
85
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham



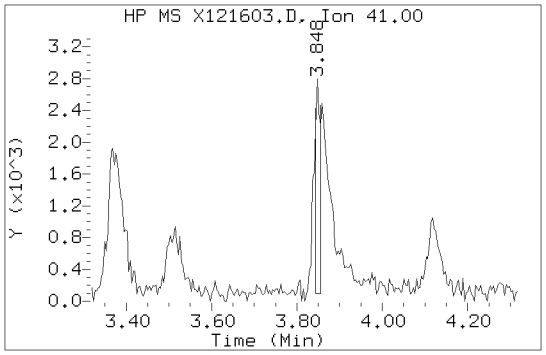

## Methacrylonitrile (126-98-7)

Reason Code:

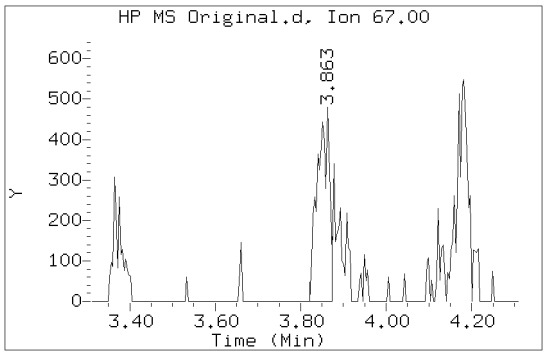
BEFORE
MASS
41
AREA
6587
HEIGHT
2708
27-Dec-2022
16:03
linh
pham



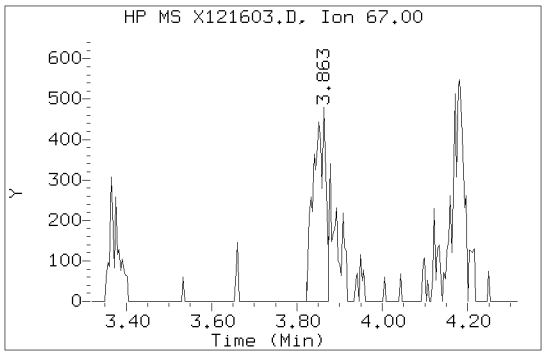

AFTER
MASS
41
AREA
2066
HEIGHT
2701
27-Dec-2022
16:07
linh
pham




BEFORE
MASS
67
AREA
937
HEIGHT
480
27-Dec-2022
16:03
linh
pham




AFTER
MASS
67
AREA
937
HEIGHT
480
27-Dec-2022
16:07
linh
pham

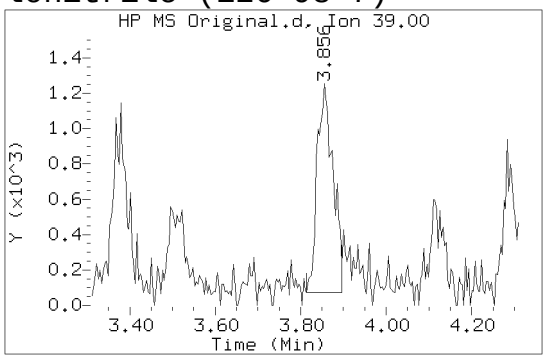


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

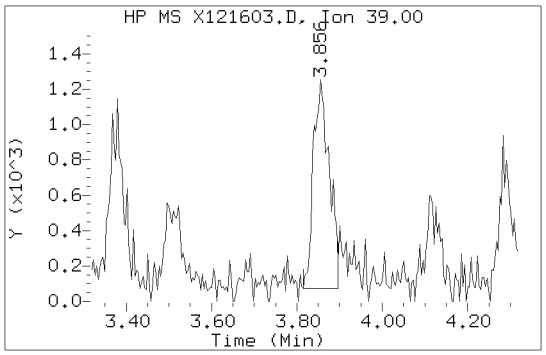
## Methacrylonitrile (126-98-7)

Reason Code:

BEFORE
MASS
39
AREA
3048
HEIGHT
1181
27-Dec-2022
16:03
linh
pham



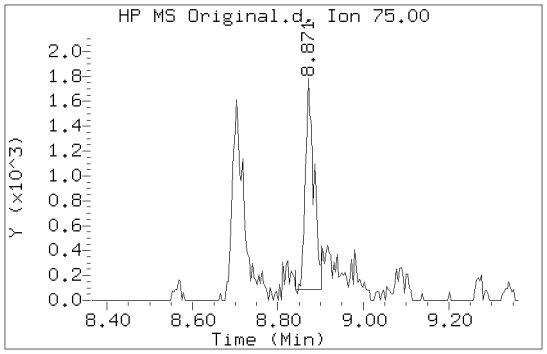

AFTER
MASS
39
AREA
3048
HEIGHT
1181
27-Dec-2022
16:07
linh
pham



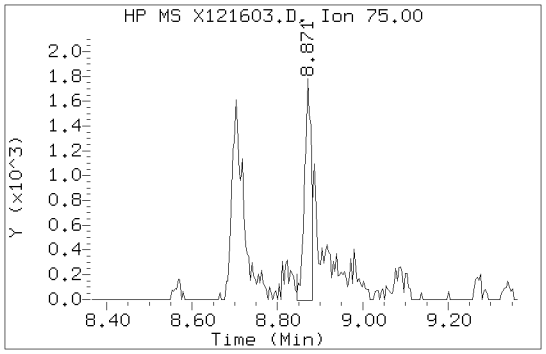

## 1,2,3-Trichloropropane (96-18-4)

Reason Code:

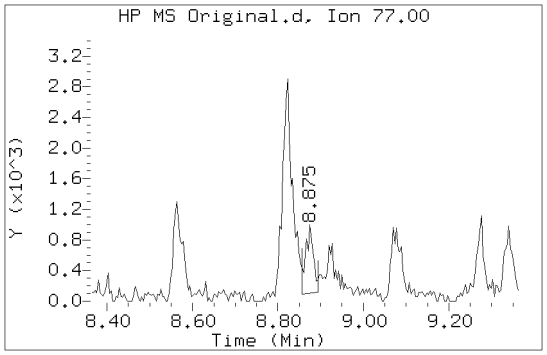
BEFORE
MASS
75
AREA
2351
HEIGHT
1693
27-Dec-2022
16:03
linh
pham



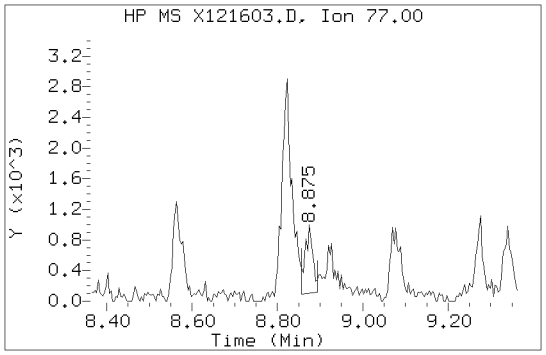

AFTER
MASS
75
AREA
2019
HEIGHT
1788
27-Dec-2022
16:07
linh
pham




BEFORE
MASS
77
AREA
1161
HEIGHT
895
27-Dec-2022
16:03
linh
pham



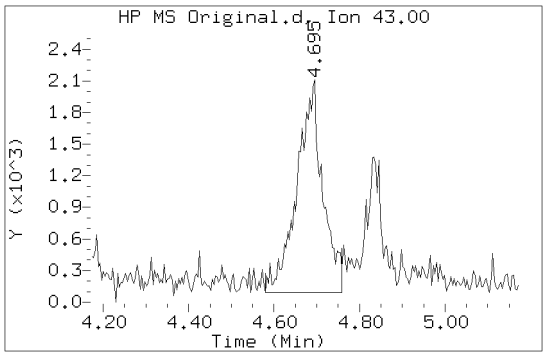

AFTER
MASS
77
AREA
1161
HEIGHT
895
27-Dec-2022
16:07
linh
pham



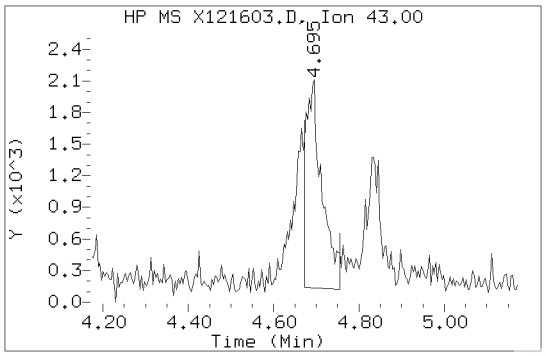

## Isobutyl Alcohol (78-83-1)

Reason Code:

BEFORE
MASS
43
AREA
8478
HEIGHT
2018
27-Dec-2022
16:03
linh
pham




AFTER
MASS
43
AREA
5178
HEIGHT
1973
27-Dec-2022
16:07
linh
pham

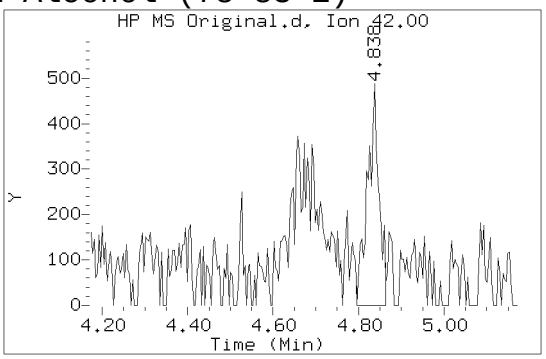


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

## Isobutyl Alcohol (78-83-1)

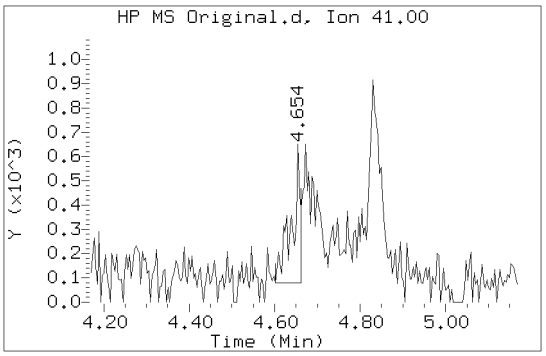
### BEFORE

MASS
42
AREA
904
HEIGHT
488
27-Dec-2022
16:03
linh
pham




### BEFORE

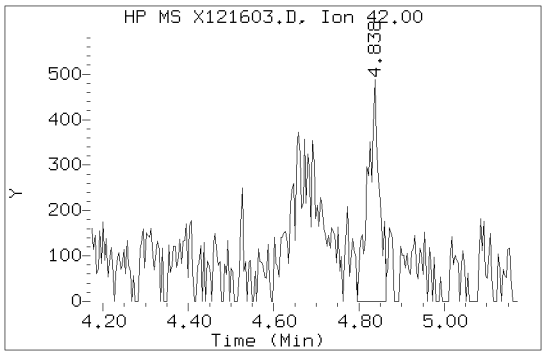
MASS
41
AREA
776
HEIGHT
572
27-Dec-2022
16:03
linh
pham




### Reason Code:

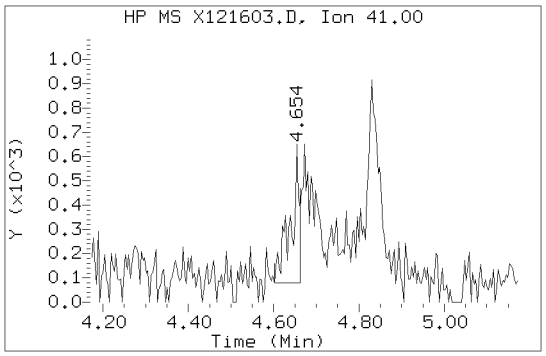
### AFTER

MASS
42
AREA
904
HEIGHT
488
27-Dec-2022
16:07
linh
pham




### AFTER

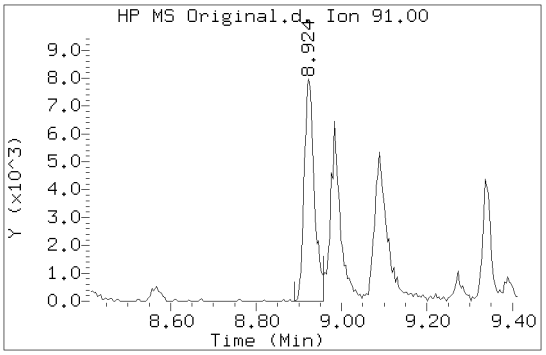
MASS
41
AREA
776
HEIGHT
572
27-Dec-2022
16:07
linh
pham




## n-Propylbenzene (106-65-1)

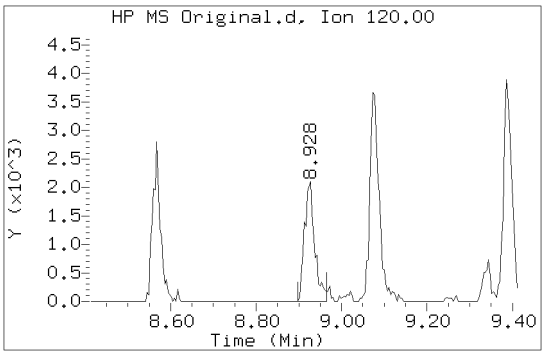
### BEFORE

MASS
91
AREA
13496
HEIGHT
7972
27-Dec-2022
16:03
linh
pham




### BEFORE

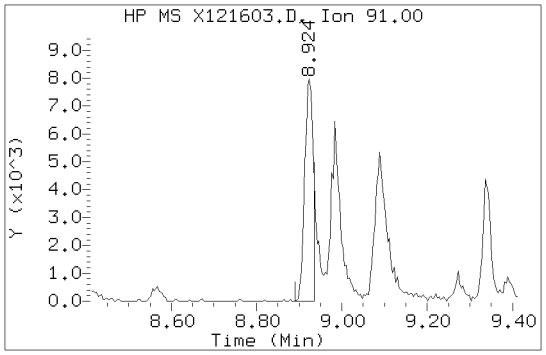
MASS
120
AREA
3559
HEIGHT
2104
27-Dec-2022
16:03
linh
pham




### Reason Code:

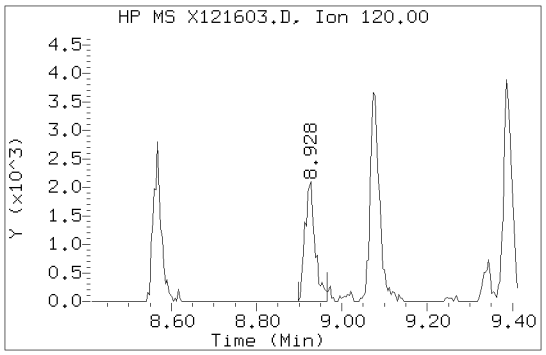
### AFTER

MASS
91
AREA
11163
HEIGHT
7972
27-Dec-2022
16:07
linh
pham




### AFTER

MASS
120
AREA
3559
HEIGHT
2104
27-Dec-2022
16:07
linh
pham

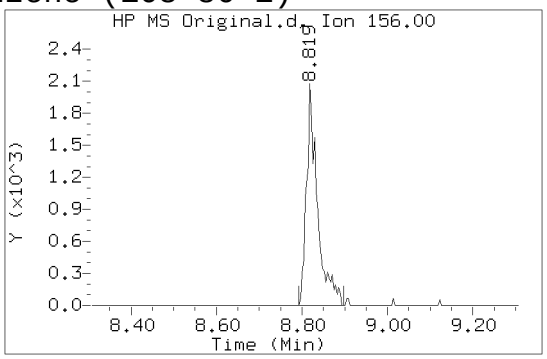


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

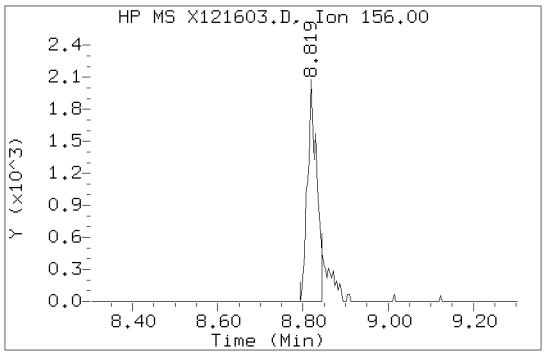
## Bromobenzene (108-86-1)

Reason Code:

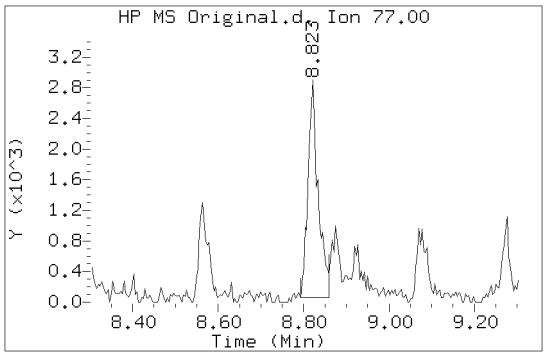
BEFORE
MASS
156
AREA
3747
HEIGHT
2077
27-Dec-2022
16:03
linh
pham



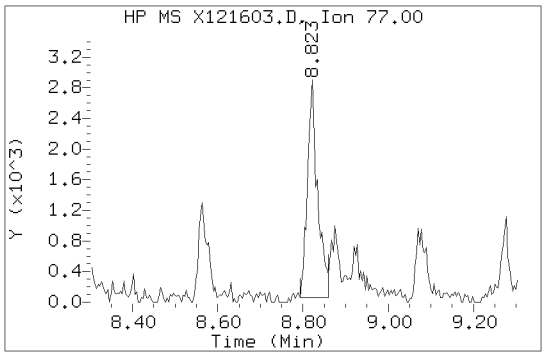

AFTER
MASS
156
AREA
3147
HEIGHT
2077
27-Dec-2022
16:07
linh
pham



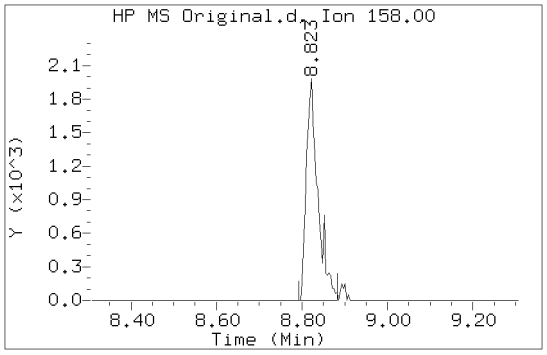

BEFORE
MASS
77
AREA
4719
HEIGHT
2841
27-Dec-2022
16:03
linh
pham



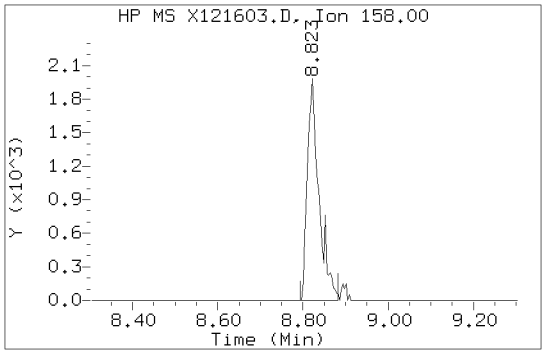

AFTER
MASS
77
AREA
4719
HEIGHT
2841
27-Dec-2022
16:07
linh
pham




BEFORE
MASS
158
AREA
3772
HEIGHT
1983
27-Dec-2022
16:03
linh
pham



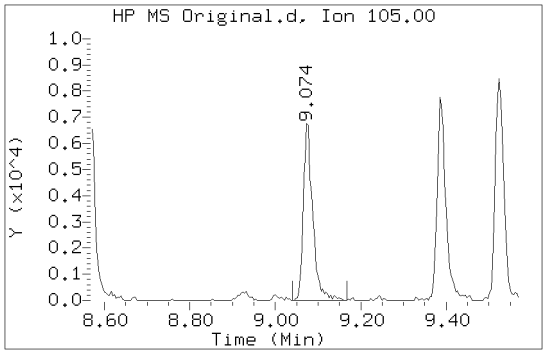

AFTER
MASS
158
AREA
3772
HEIGHT
1983
27-Dec-2022
16:07
linh
pham



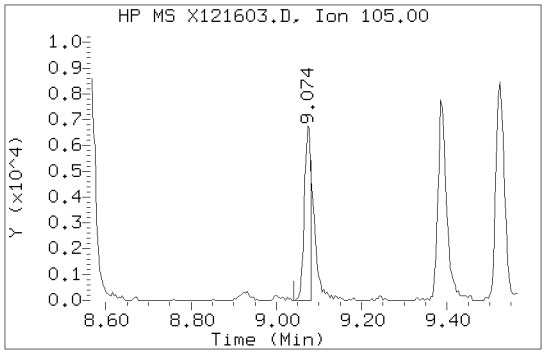

## 1,3,5-Trimethylbenzene (108-67-8)

Reason Code:

BEFORE
MASS
105
AREA
10555
HEIGHT
6758
27-Dec-2022
16:03
linh
pham




AFTER
MASS
105
AREA
7182
HEIGHT
6758
27-Dec-2022
16:07
linh
pham



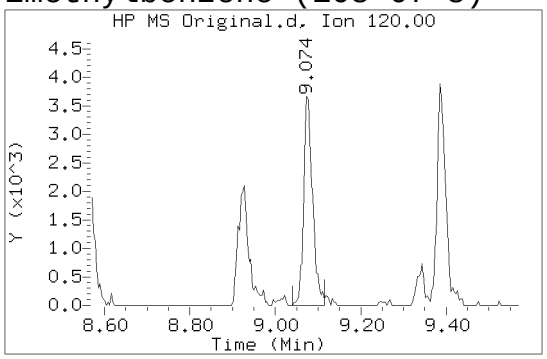
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

## 1,3,5-Trimethylbenzene (108-67-8)

Reason Code:

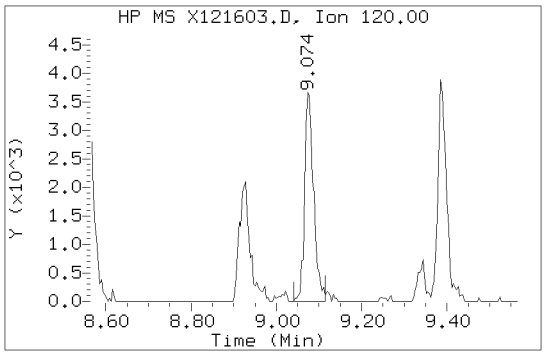
**BEFORE**

MASS
120
AREA
5450
HEIGHT
3663
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
120
AREA
5450
HEIGHT
3663
27-Dec-2022
16:07
linh
pham

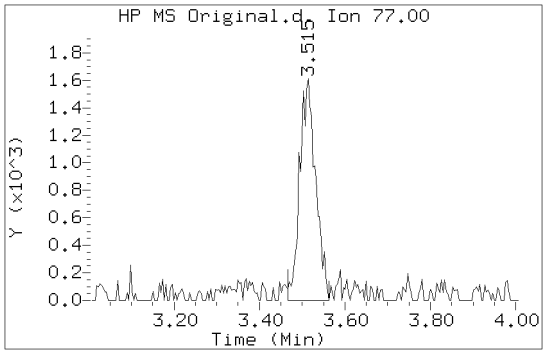



## 2,2-Dichloropropane (594-20-7)

Reason Code:

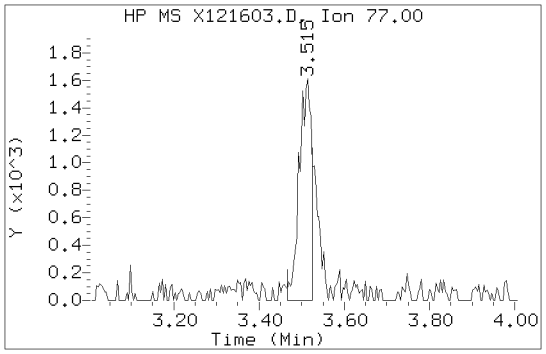
**BEFORE**

MASS
77
AREA
4217
HEIGHT
1612
27-Dec-2022
16:03
linh
pham



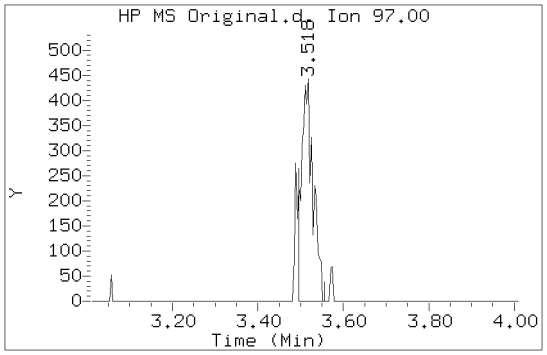

**AFTER**

MASS
77
AREA
3238
HEIGHT
1612
27-Dec-2022
16:07
linh
pham



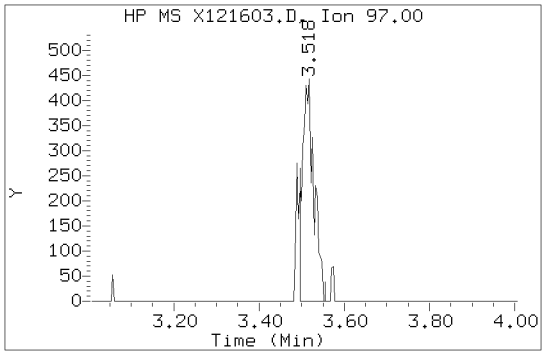

**BEFORE**

MASS
97
AREA
843
HEIGHT
443
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
97
AREA
843
HEIGHT
443
27-Dec-2022
16:07
linh
pham

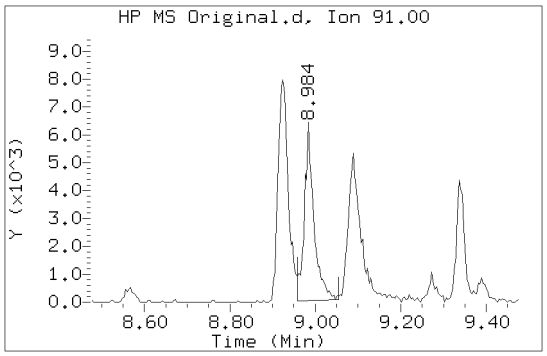



## 2-Chlorotoluene (95-49-8)

Reason Code:

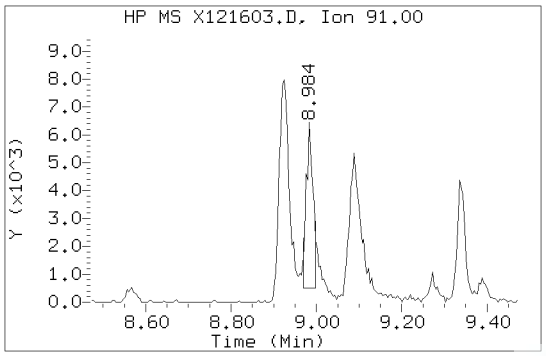
**BEFORE**

MASS
91
AREA
10128
HEIGHT
6401
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
91
AREA
6718
HEIGHT
5942
27-Dec-2022
16:07
linh
pham



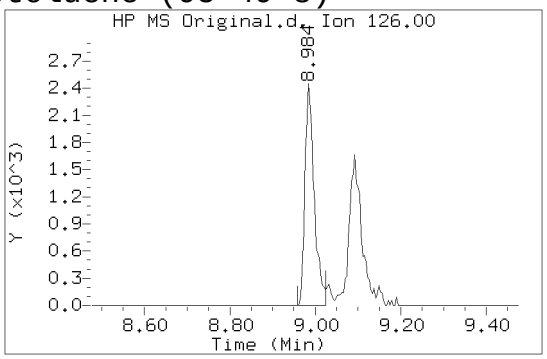
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

## 2-Chlorotoluene (95-49-8)

Reason Code:

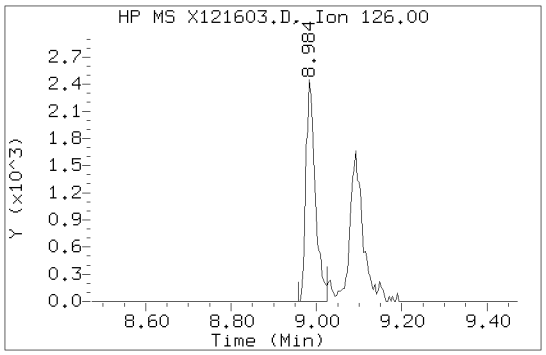
**BEFORE**

MASS
126
AREA
3761
HEIGHT
2450
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
126
AREA
3761
HEIGHT
2450
27-Dec-2022
16:07
linh
pham

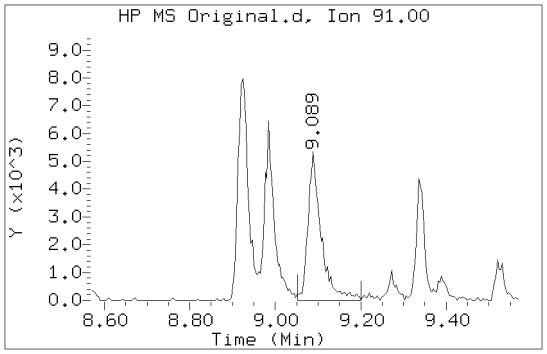



## 4-Chlorotoluene (106-43-4)

Reason Code:

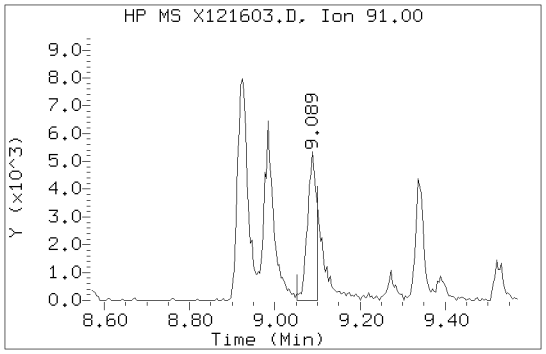
**BEFORE**

MASS
91
AREA
11481
HEIGHT
5337
27-Dec-2022
16:03
linh
pham



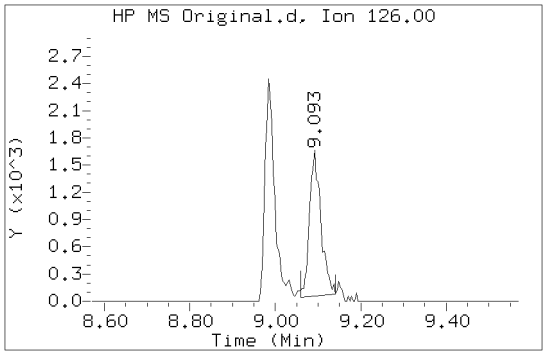

**AFTER**

MASS
91
AREA
7644
HEIGHT
5337
27-Dec-2022
16:07
linh
pham



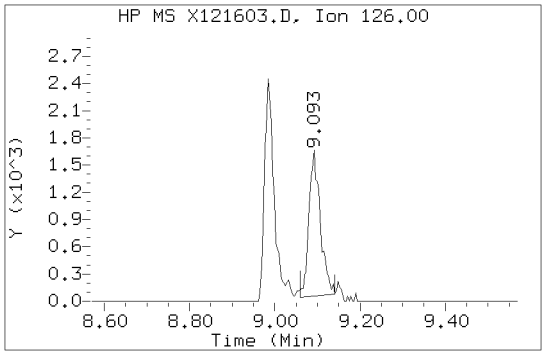

**BEFORE**

MASS
126
AREA
3008
HEIGHT
1612
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
126
AREA
3008
HEIGHT
1612
27-Dec-2022
16:07
linh
pham

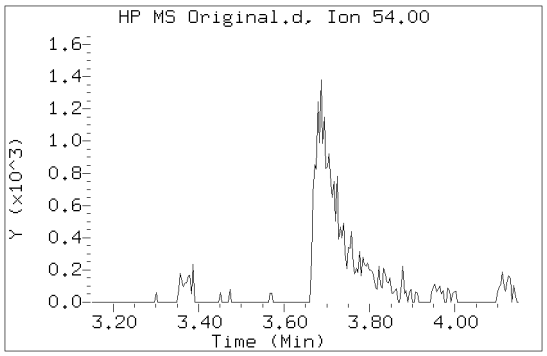



## Propionitrile (107-12-0)

Reason Code:

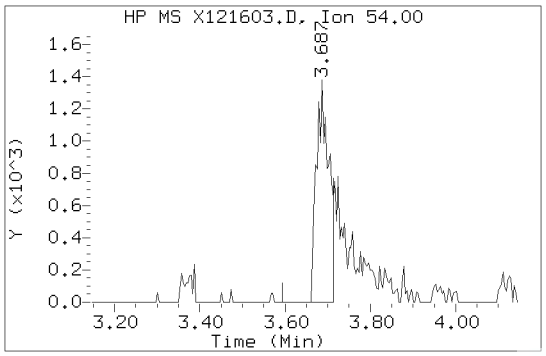
**BEFORE**

MASS
54
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
54
AREA
2777
HEIGHT
1380
27-Dec-2022
16:07
linh
pham



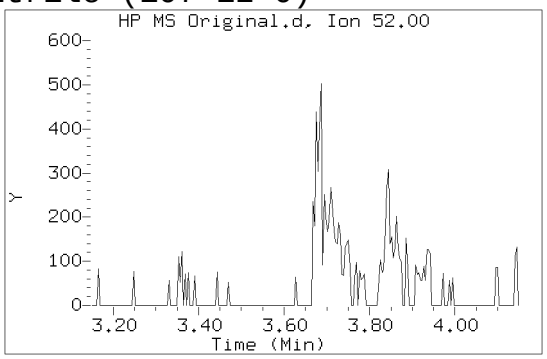
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

## Propionitrile (107-12-0)

Reason Code:

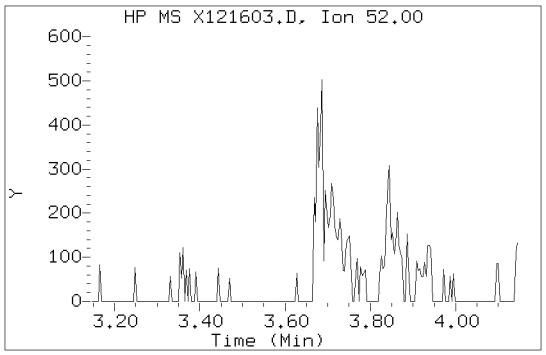
**BEFORE**

MASS
52
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



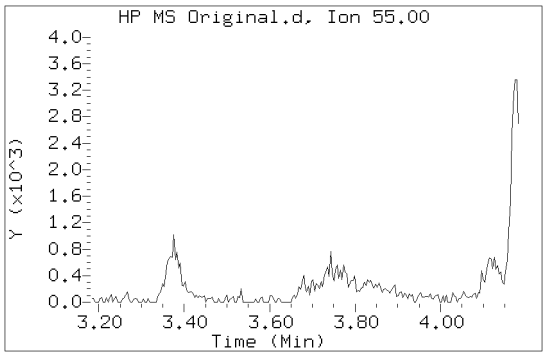

**AFTER**

MASS
52
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham



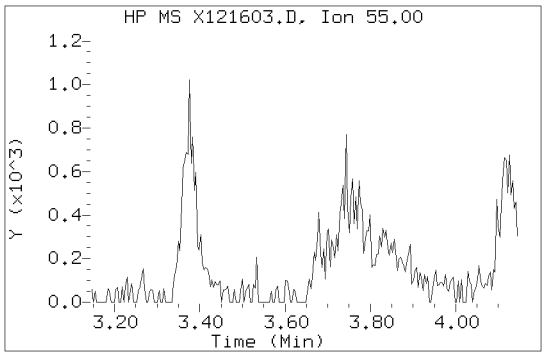

**BEFORE**

MASS
55
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
55
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham

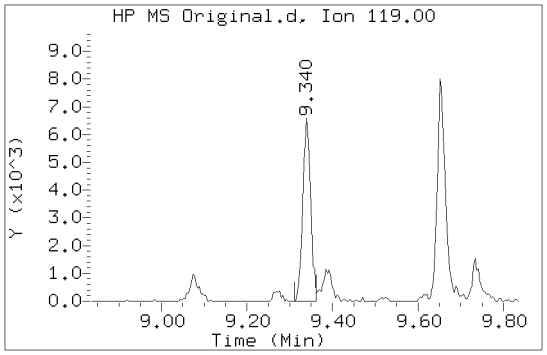



## tert-Butylbenzene (98-06-6)

Reason Code:

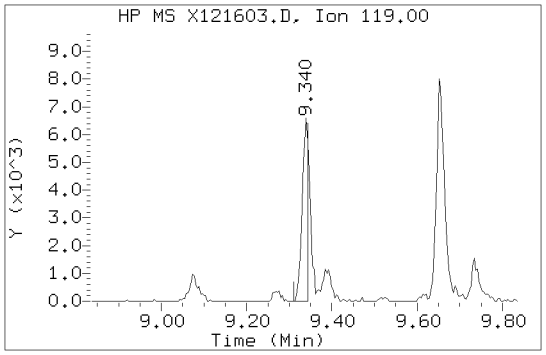
**BEFORE**

MASS
119
AREA
8660
HEIGHT
6598
27-Dec-2022
16:03
linh
pham



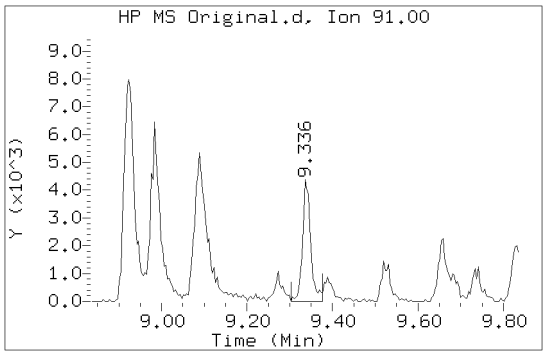

**AFTER**

MASS
119
AREA
6389
HEIGHT
6598
27-Dec-2022
16:07
linh
pham



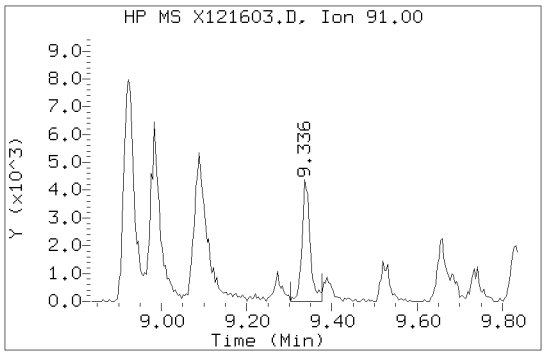

**BEFORE**

MASS
91
AREA
6013
HEIGHT
4378
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
91
AREA
6013
HEIGHT
4378
27-Dec-2022
16:07
linh
pham



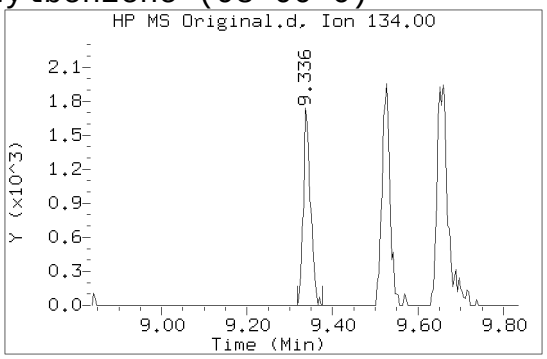
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

## tert-Butylbenzene (98-06-6)

Reason Code:

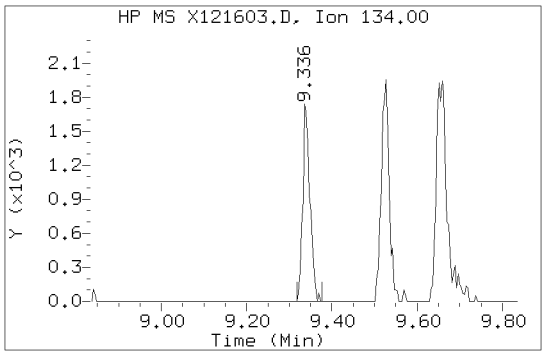
**BEFORE**

MASS
134
AREA
2112
HEIGHT
1740
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
134
AREA
2112
HEIGHT
1740
27-Dec-2022
16:07
linh
pham

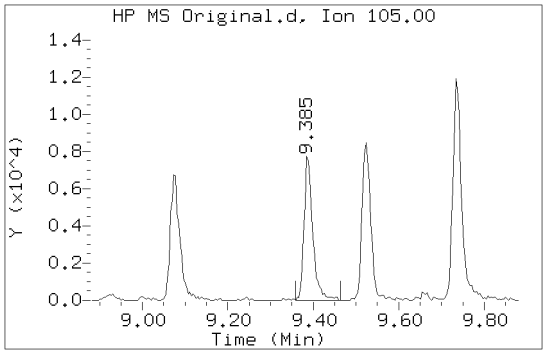



## 1,2,4-Trimethylbenzene (95-63-6)

Reason Code:

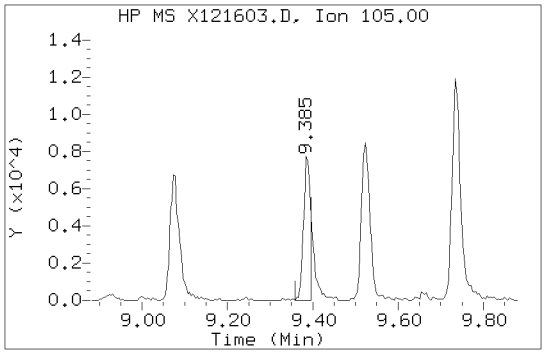
**BEFORE**

MASS
105
AREA
11065
HEIGHT
7775
27-Dec-2022
16:03
linh
pham



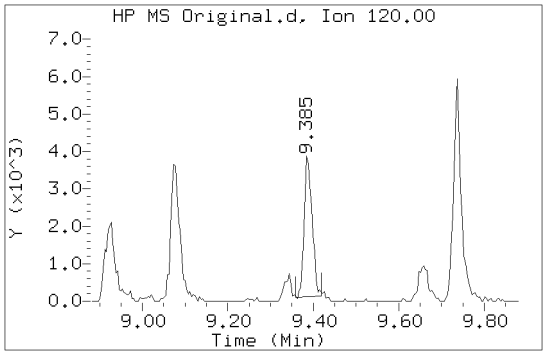

**AFTER**

MASS
105
AREA
8496
HEIGHT
7775
27-Dec-2022
16:07
linh
pham



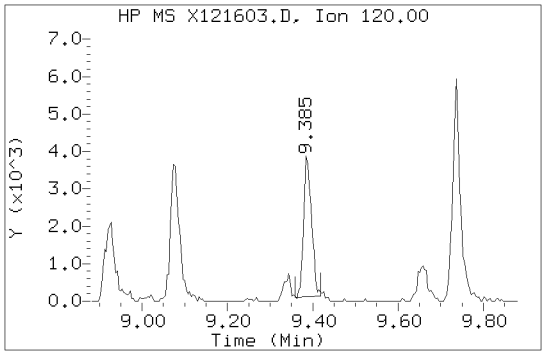

**BEFORE**

MASS
120
AREA
4898
HEIGHT
3773
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
120
AREA
4898
HEIGHT
3773
27-Dec-2022
16:07
linh
pham

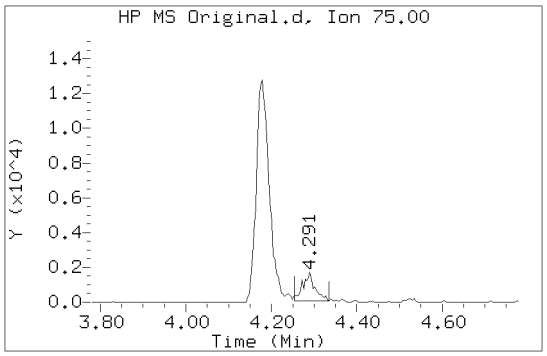



## 1,1-Dichloropropene (563-58-6)

Reason Code:

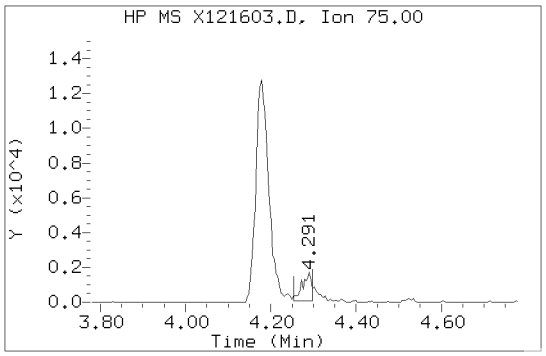
**BEFORE**

MASS
75
AREA
3235
HEIGHT
1674
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
75
AREA
2468
HEIGHT
1674
27-Dec-2022
16:07
linh
pham



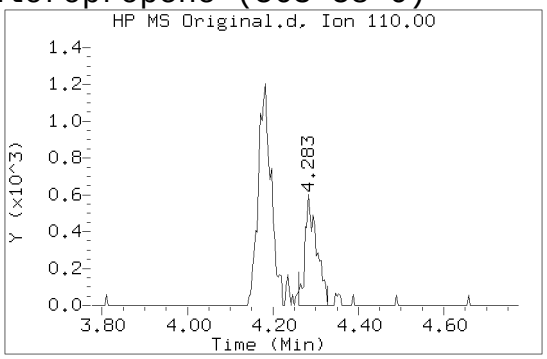
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

## 1,1-Dichloropropene (563-58-6)

Reason Code:

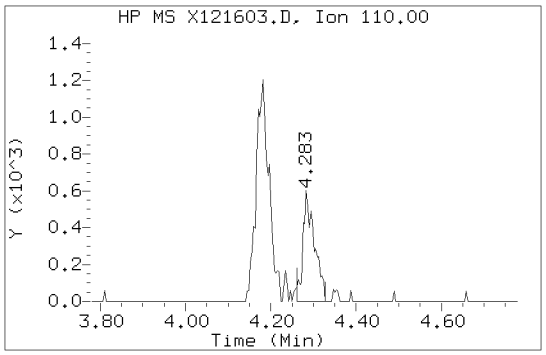
**BEFORE**

MASS
110
AREA
1143
HEIGHT
603
27-Dec-2022
16:03
linh
pham



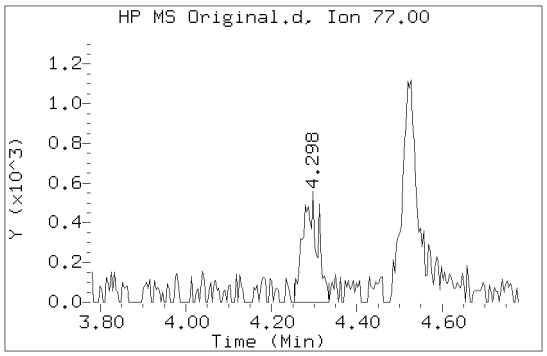

**AFTER**

MASS
110
AREA
1143
HEIGHT
603
27-Dec-2022
16:07
linh
pham



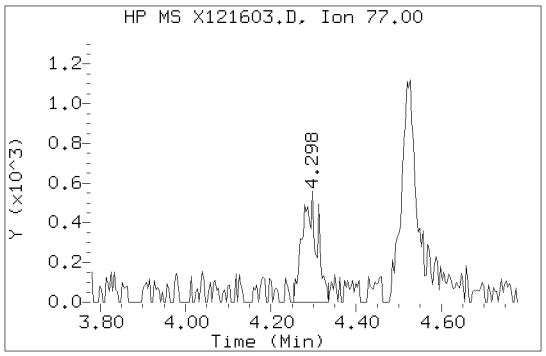

**BEFORE**

MASS
77
AREA
1342
HEIGHT
559
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
77
AREA
1342
HEIGHT
559
27-Dec-2022
16:07
linh
pham

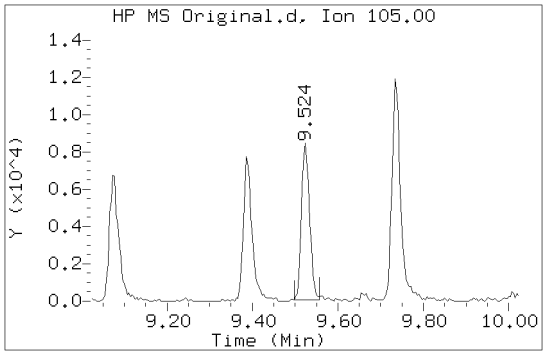



## sec-Butylbenzene (135-98-8)

Reason Code:

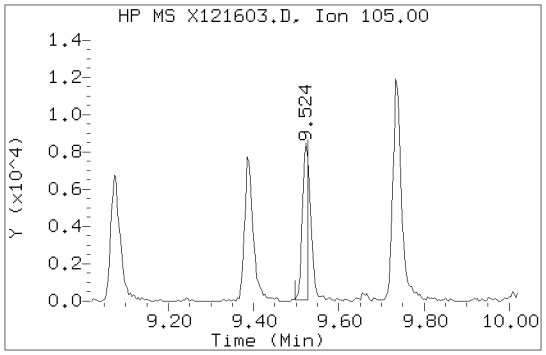
**BEFORE**

MASS
105
AREA
11512
HEIGHT
8394
27-Dec-2022
16:03
linh
pham



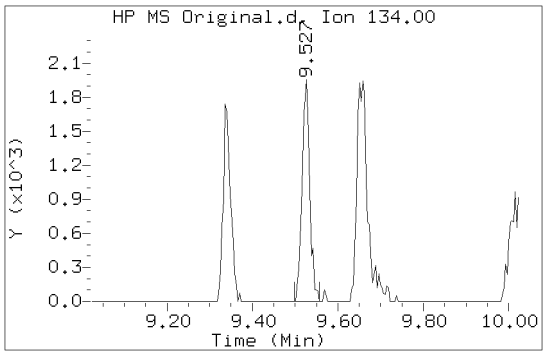

**AFTER**

MASS
105
AREA
7938
HEIGHT
8394
27-Dec-2022
16:07
linh
pham



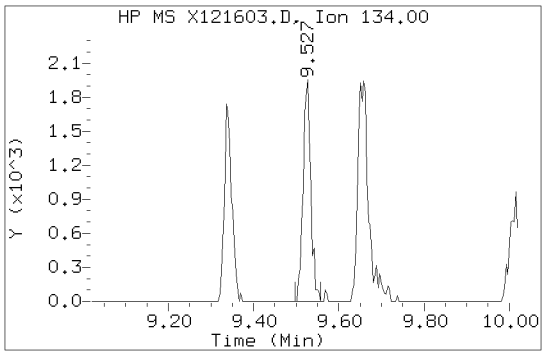

**BEFORE**

MASS
134
AREA
2519
HEIGHT
1955
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
134
AREA
2519
HEIGHT
1955
27-Dec-2022
16:07
linh
pham



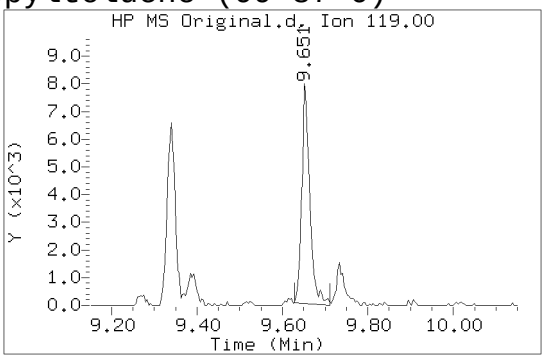
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

## p-Isopropyltoluene (99-87-6)

Reason Code:

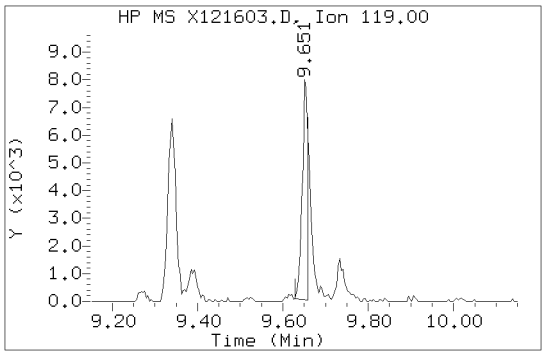
BEFORE

MASS
119
AREA
10660
HEIGHT
7944
27-Dec-2022
16:03
linh
pham



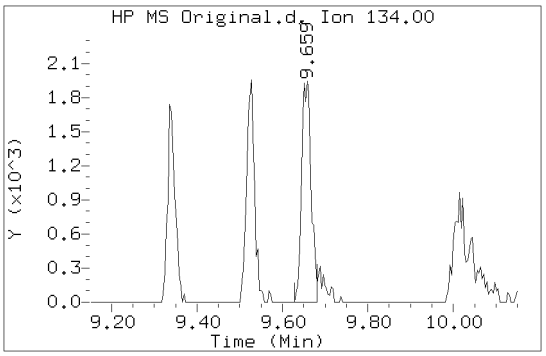

AFTER

MASS
119
AREA
7343
HEIGHT
7944
27-Dec-2022
16:07
linh
pham



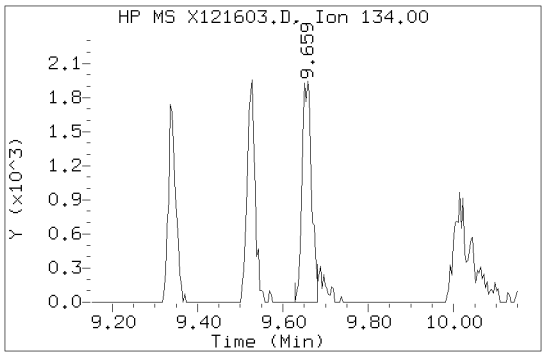

BEFORE

MASS
134
AREA
3102
HEIGHT
1946
27-Dec-2022
16:03
linh
pham



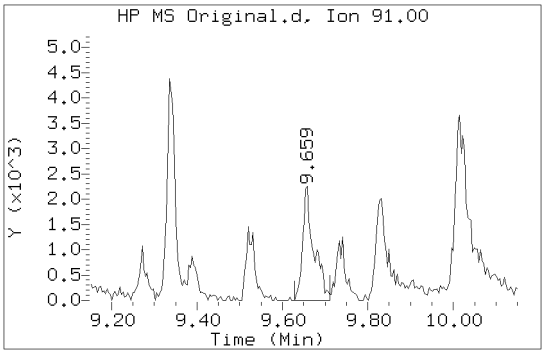

AFTER

MASS
134
AREA
3102
HEIGHT
1946
27-Dec-2022
16:07
linh
pham



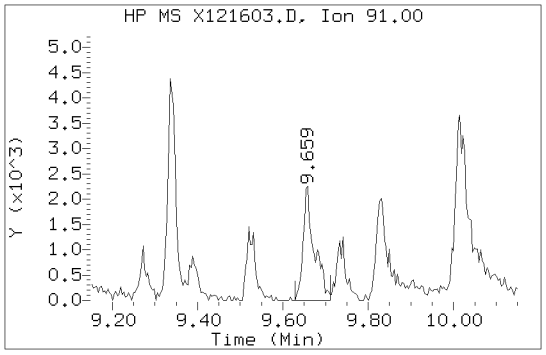

BEFORE

MASS
91
AREA
4191
HEIGHT
2256
27-Dec-2022
16:03
linh
pham




AFTER

MASS
91
AREA
4191
HEIGHT
2256
27-Dec-2022
16:07
linh
pham

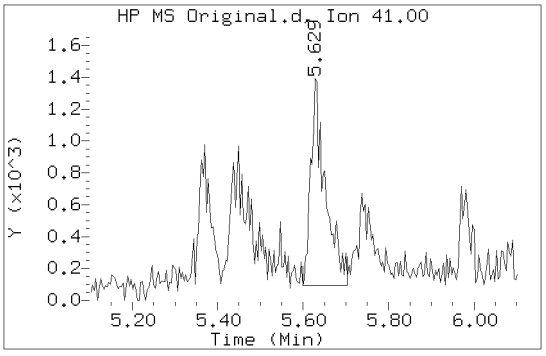



## Methyl Methacrylate (80-62-6)

Reason Code:

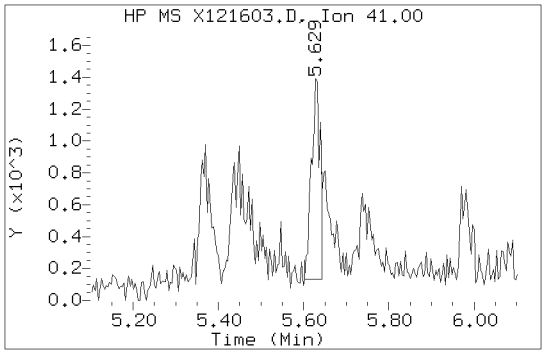
BEFORE

MASS
41
AREA
3067
HEIGHT
1299
27-Dec-2022
16:03
linh
pham




AFTER

MASS
41
AREA
1788
HEIGHT
1257
27-Dec-2022
16:07
linh
pham



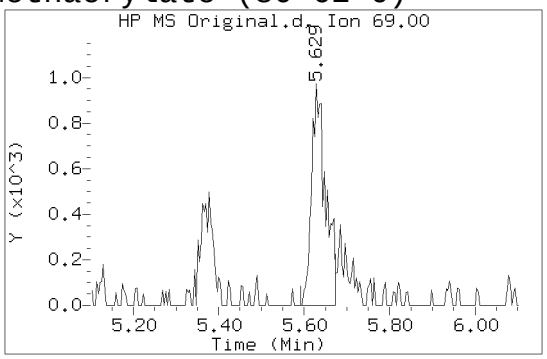
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

## Methyl Methacrylate (80-62-6)

Reason Code:

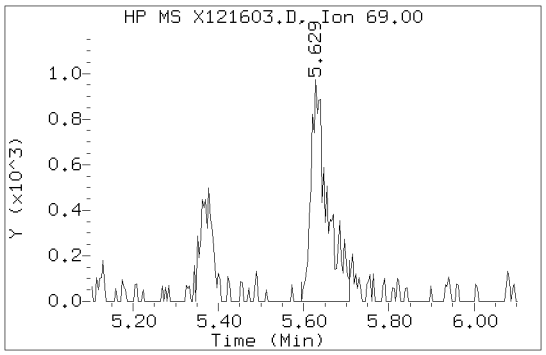
**BEFORE**

MASS
69
AREA
2216
HEIGHT
973
27-Dec-2022
16:03
linh
pham



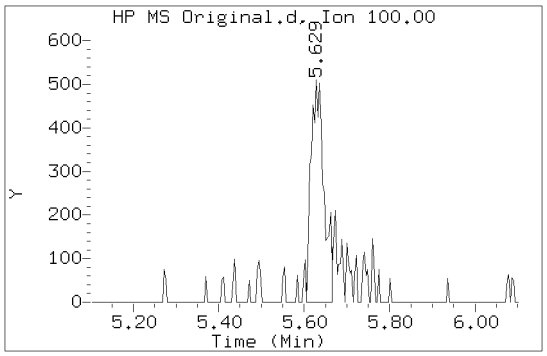

**AFTER**

MASS
69
AREA
2595
HEIGHT
973
27-Dec-2022
16:07
linh
pham



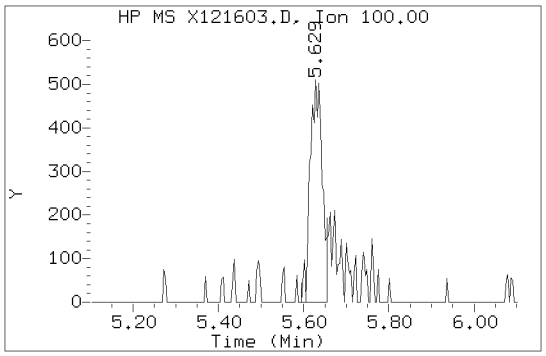

**BEFORE**

MASS
100
AREA
1074
HEIGHT
510
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
100
AREA
1011
HEIGHT
510
27-Dec-2022
16:07
linh
pham

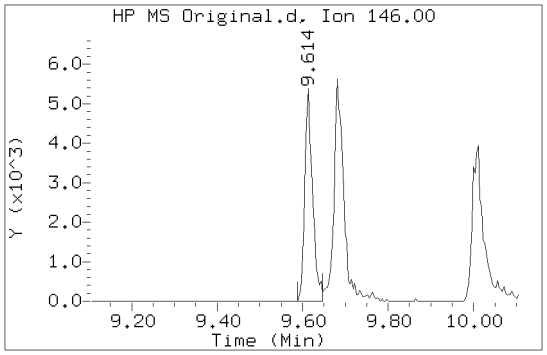



## 1,3-Dichlorobenzene (541-73-1)

Reason Code:

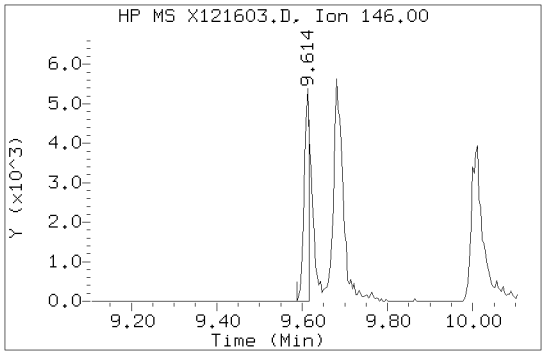
**BEFORE**

MASS
146
AREA
6964
HEIGHT
5387
27-Dec-2022
16:03
linh
pham



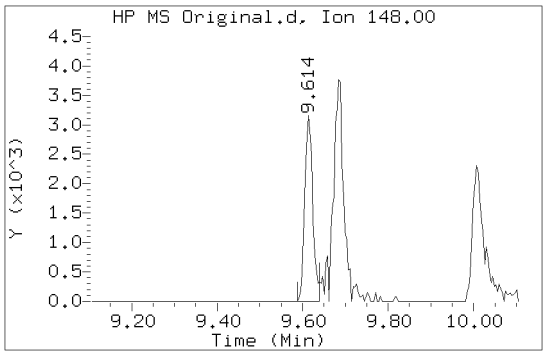

**AFTER**

MASS
146
AREA
4677
HEIGHT
5387
27-Dec-2022
16:07
linh
pham



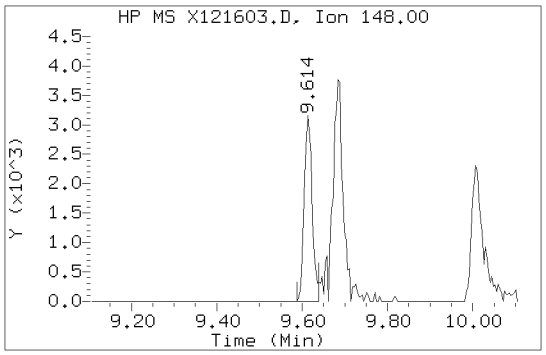

**BEFORE**

MASS
148
AREA
4216
HEIGHT
3157
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
148
AREA
4216
HEIGHT
3157
27-Dec-2022
16:07
linh
pham



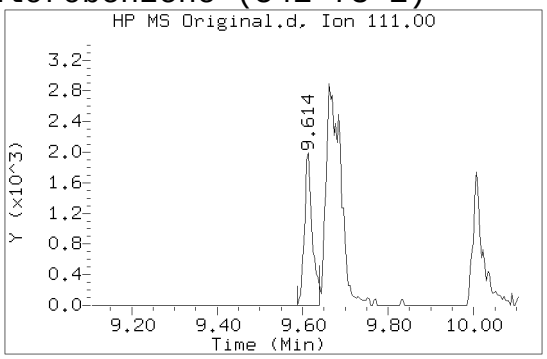
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

## 1,3-Dichlorobenzene (541-73-1)

Reason Code:

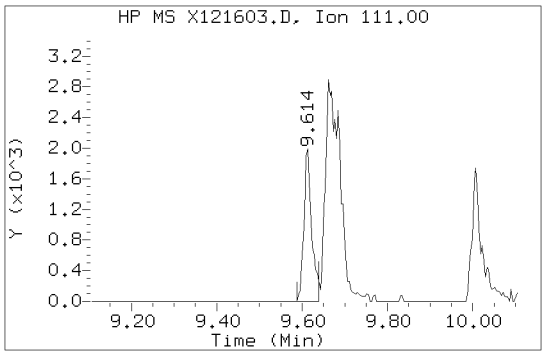
**BEFORE**

MASS
111
AREA
2596
HEIGHT
1995
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
111
AREA
2596
HEIGHT
1995
27-Dec-2022
16:07
linh
pham

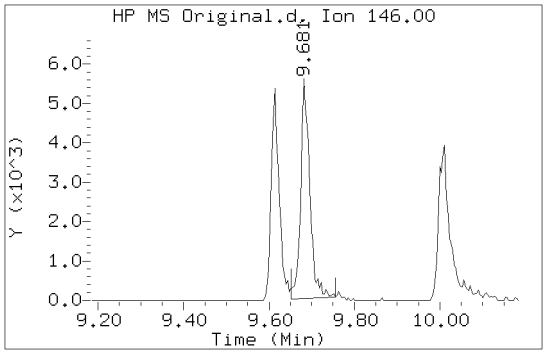



## 1,4-Dichlorobenzene (106-46-7)

Reason Code:

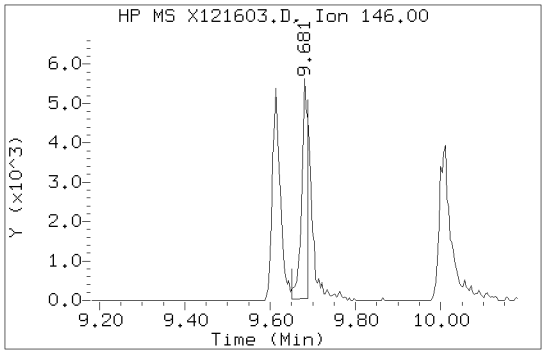
**BEFORE**

MASS
146
AREA
8510
HEIGHT
5586
27-Dec-2022
16:03
linh
pham



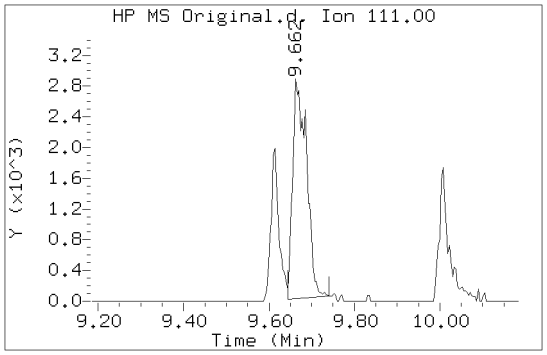

**AFTER**

MASS
146
AREA
5674
HEIGHT
5587
27-Dec-2022
16:07
linh
pham



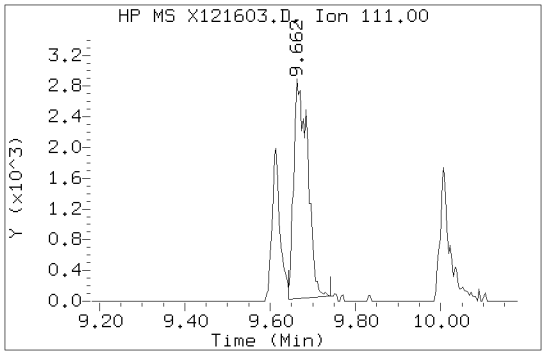

**BEFORE**

MASS
111
AREA
6571
HEIGHT
2862
27-Dec-2022
16:03
linh
pham



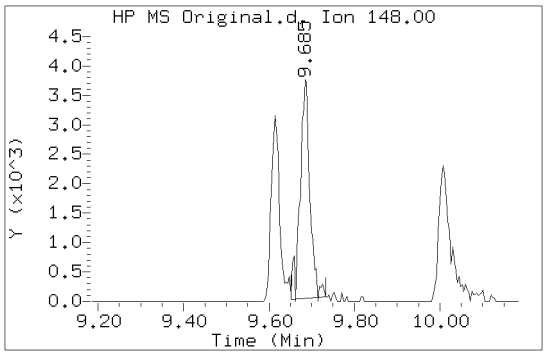

**AFTER**

MASS
111
AREA
6571
HEIGHT
2862
27-Dec-2022
16:07
linh
pham



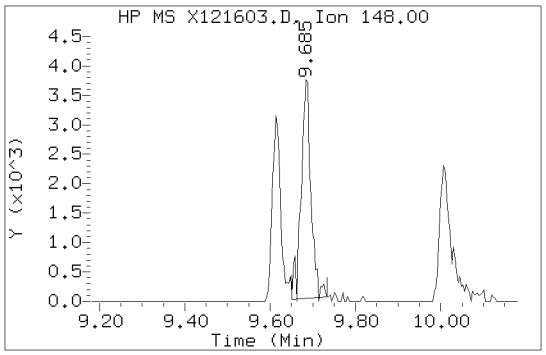

**BEFORE**

MASS
148
AREA
6083
HEIGHT
3714
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
148
AREA
6083
HEIGHT
3714
27-Dec-2022
16:07
linh
pham



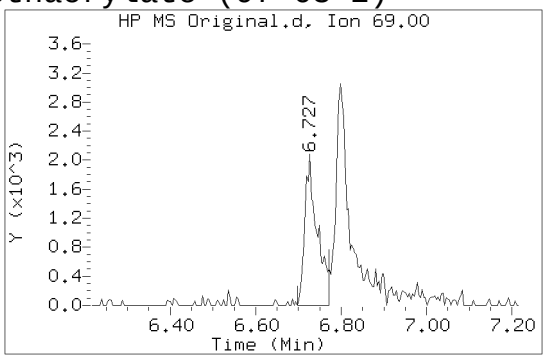
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

## Ethyl Methacrylate (97-63-2)

Reason Code:

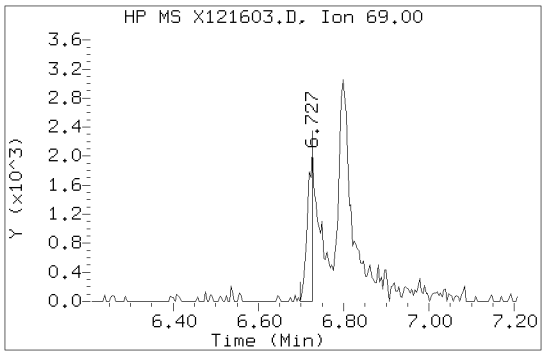
BEFORE

MASS
69
AREA
4283
HEIGHT
2083
27-Dec-2022
16:03
linh
pham



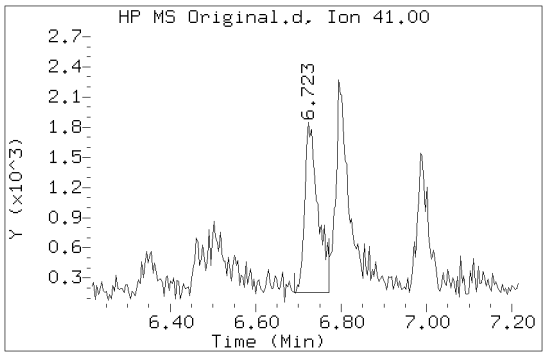

AFTER

MASS
69
AREA
1935
HEIGHT
2083
27-Dec-2022
16:07
linh
pham



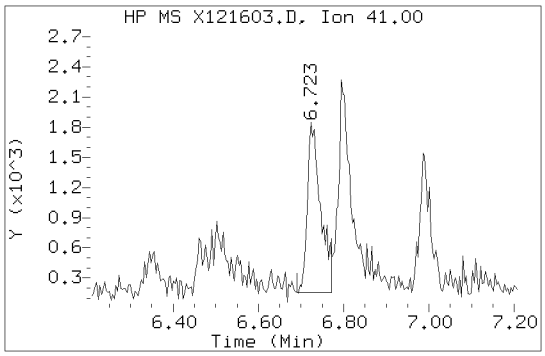

BEFORE

MASS
41
AREA
3701
HEIGHT
1688
27-Dec-2022
16:03
linh
pham




AFTER

MASS
41
AREA
3701
HEIGHT
1688
27-Dec-2022
16:07
linh
pham

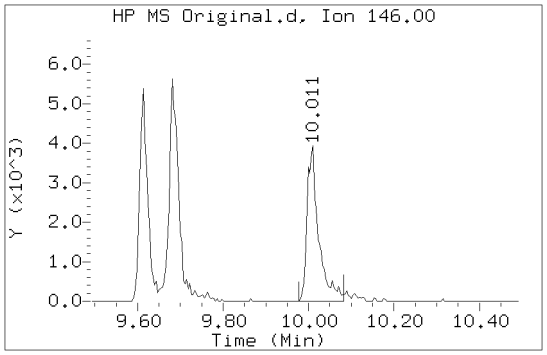



## 1,2-Dichlorobenzene (95-50-1)

Reason Code:

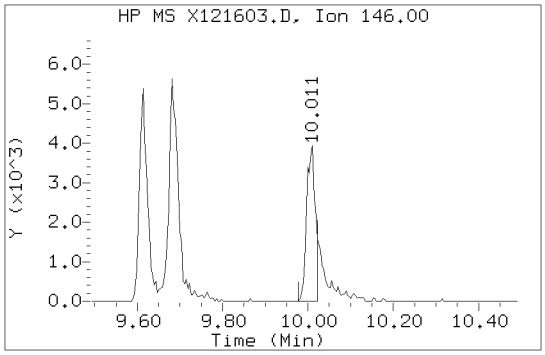
BEFORE

MASS
146
AREA
7400
HEIGHT
3934
27-Dec-2022
16:03
linh
pham



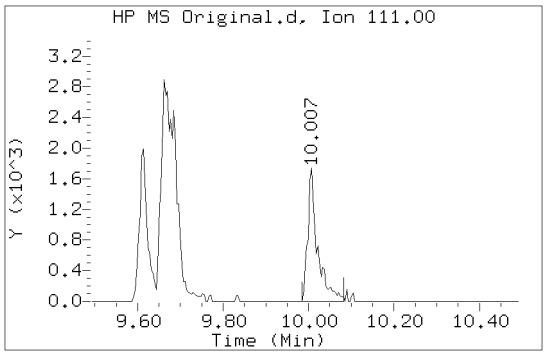

AFTER

MASS
146
AREA
5504
HEIGHT
3934
27-Dec-2022
16:07
linh
pham



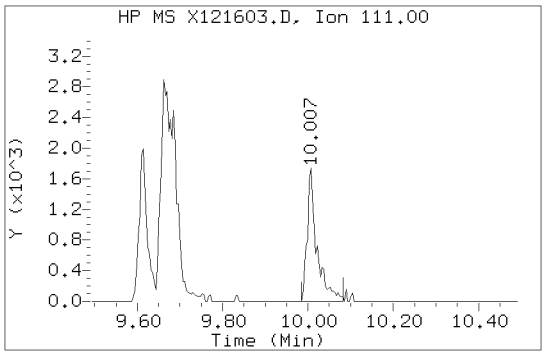

BEFORE

MASS
111
AREA
2768
HEIGHT
1741
27-Dec-2022
16:03
linh
pham




AFTER

MASS
111
AREA
2768
HEIGHT
1741
27-Dec-2022
16:07
linh
pham



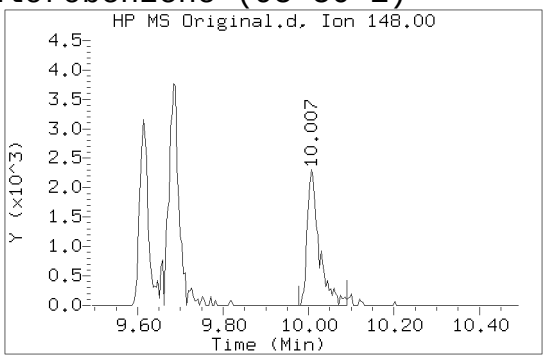
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

## 1,2-Dichlorobenzene (95-50-1)

Reason Code:

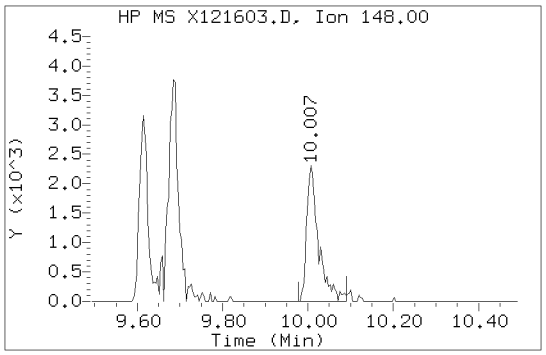
**BEFORE**

MASS
148
AREA
4515
HEIGHT
2306
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
148
AREA
4515
HEIGHT
2306
27-Dec-2022
16:07
linh
pham

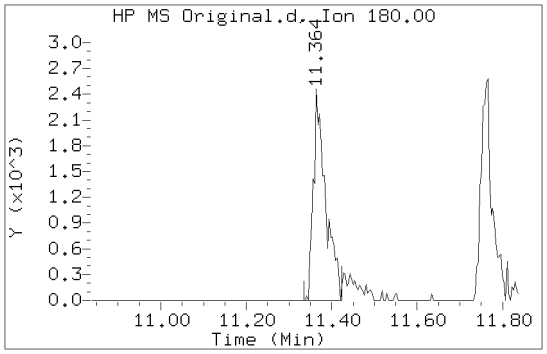



## 1,2,4-Trichlorobenzene (120-82-1)

Reason Code:

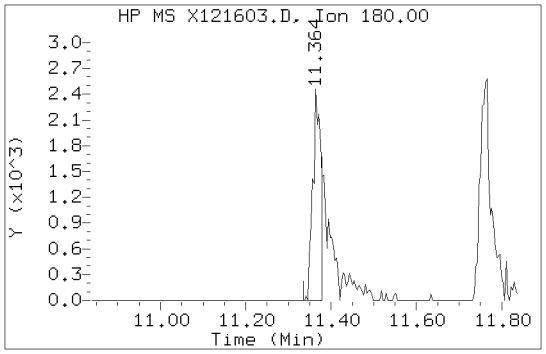
**BEFORE**

MASS
180
AREA
4912
HEIGHT
2459
27-Dec-2022
16:03
linh
pham



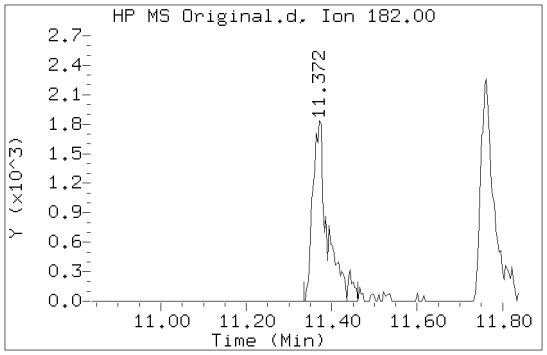

**AFTER**

MASS
180
AREA
3187
HEIGHT
2459
27-Dec-2022
16:07
linh
pham



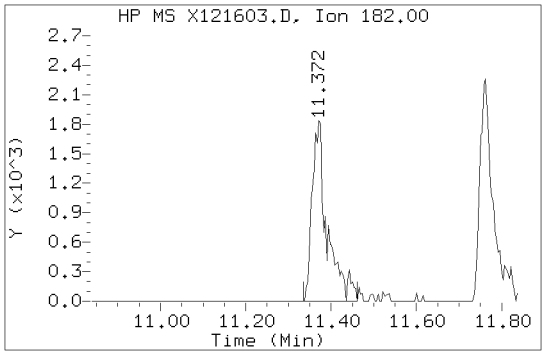

**BEFORE**

MASS
182
AREA
4514
HEIGHT
1835
27-Dec-2022
16:03
linh
pham



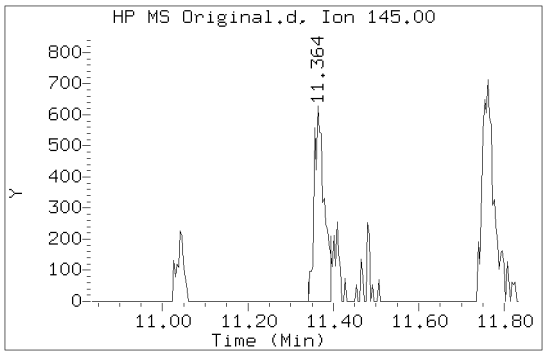

**AFTER**

MASS
182
AREA
4514
HEIGHT
1835
27-Dec-2022
16:07
linh
pham



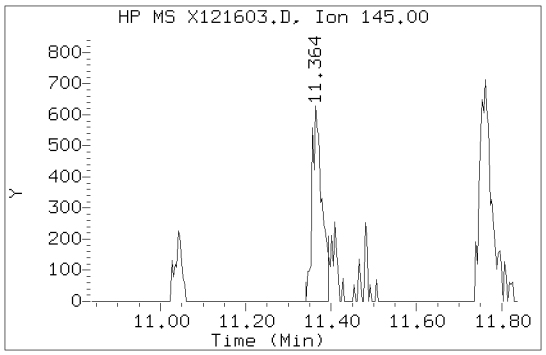

**BEFORE**

MASS
145
AREA
1003
HEIGHT
629
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
145
AREA
1003
HEIGHT
629
27-Dec-2022
16:07
linh
pham



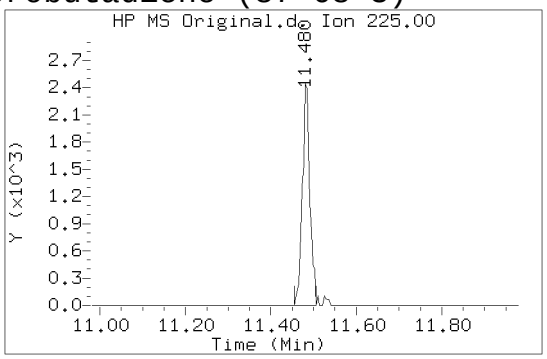
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

## Hexachlorobutadiene (87-68-3)

Reason Code:

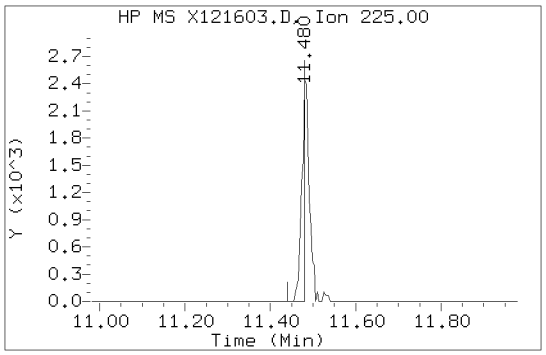
**BEFORE**

MASS
225
AREA
3038
HEIGHT
2444
27-Dec-2022
16:03
linh
pham



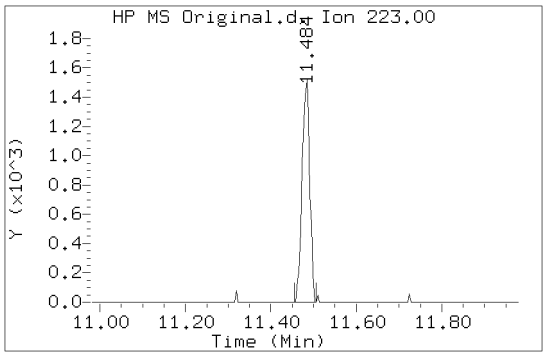

**AFTER**

MASS
225
AREA
1477
HEIGHT
2444
27-Dec-2022
16:07
linh
pham



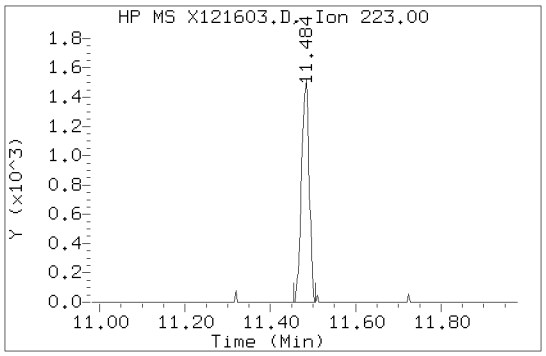

**BEFORE**

MASS
223
AREA
1952
HEIGHT
1518
27-Dec-2022
16:03
linh
pham



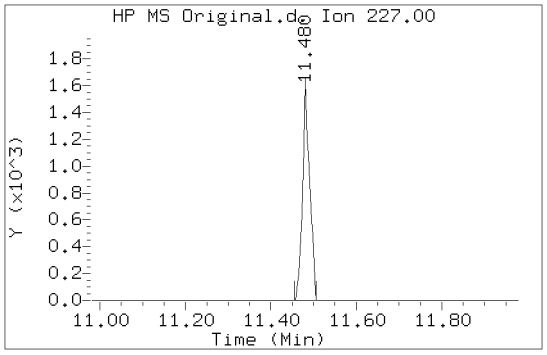

**AFTER**

MASS
223
AREA
1952
HEIGHT
1518
27-Dec-2022
16:07
linh
pham



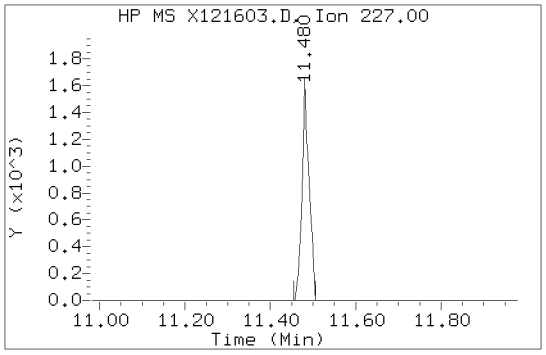

**BEFORE**

MASS
227
AREA
1938
HEIGHT
1652
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
227
AREA
1938
HEIGHT
1652
27-Dec-2022
16:07
linh
pham

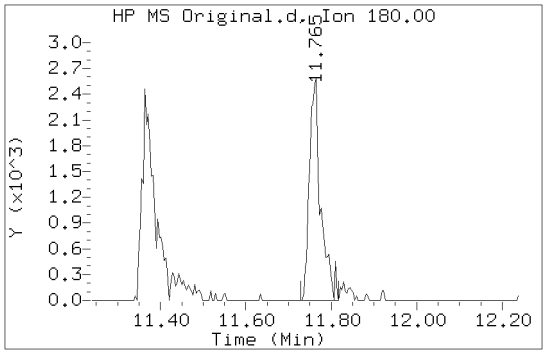



## 1,2,3-Trichlorobenzene (87-61-6)

Reason Code:

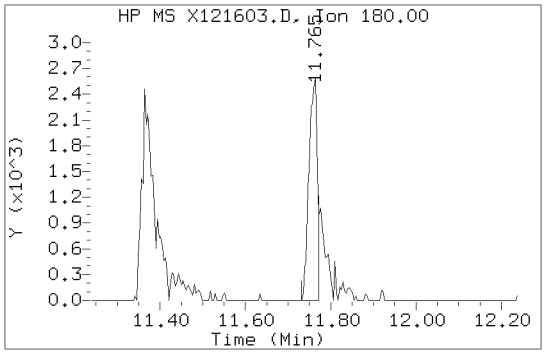
**BEFORE**

MASS
180
AREA
4741
HEIGHT
2580
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
180
AREA
3572
HEIGHT
2580
27-Dec-2022
16:07
linh
pham



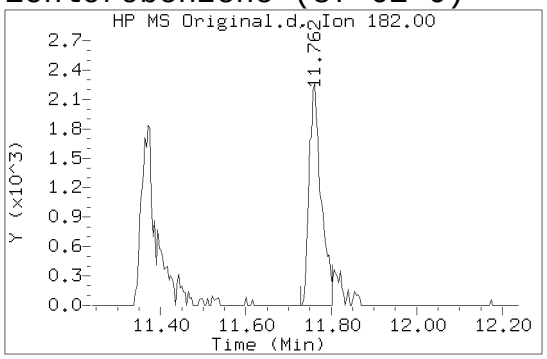
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

## 1,2,3-Trichlorobenzene (87-61-6)

Reason Code:

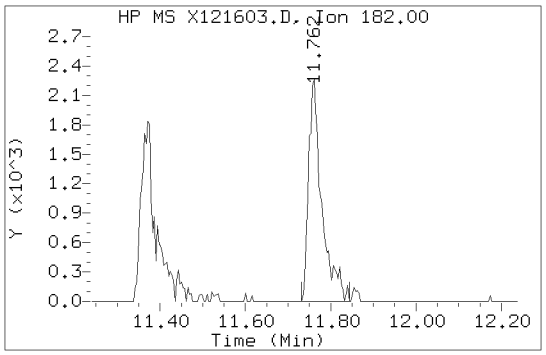
**BEFORE**

MASS
182
AREA
4404
HEIGHT
2261
27-Dec-2022
16:03
linh
pham



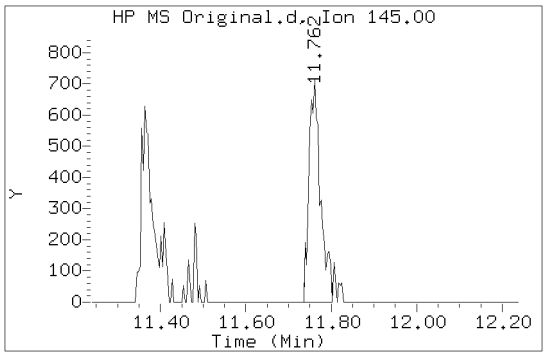

**AFTER**

MASS
182
AREA
4881
HEIGHT
2261
27-Dec-2022
16:07
linh
pham



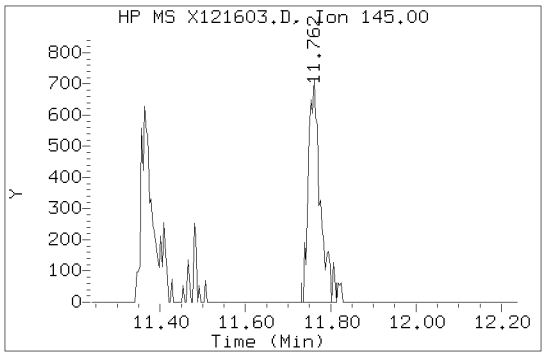

**BEFORE**

MASS
145
AREA
1338
HEIGHT
713
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
145
AREA
1384
HEIGHT
713
27-Dec-2022
16:07
linh
pham

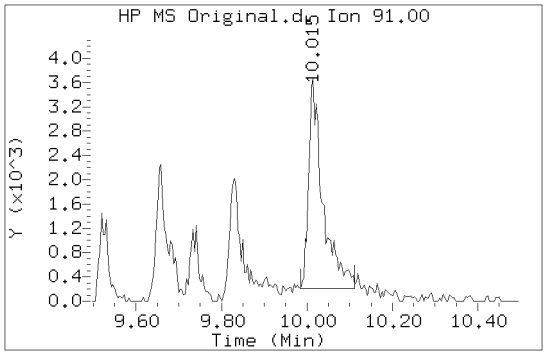



## n-Butylbenzene (104-51-8)

Reason Code:

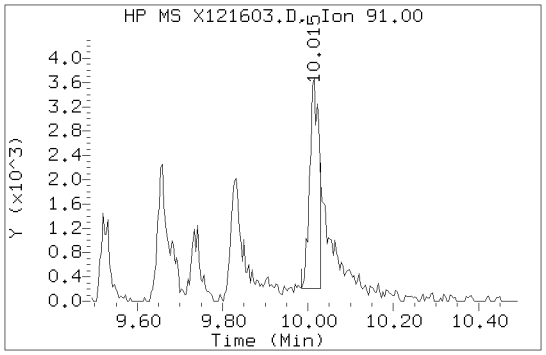
**BEFORE**

MASS
91
AREA
8005
HEIGHT
3451
27-Dec-2022
16:03
linh
pham



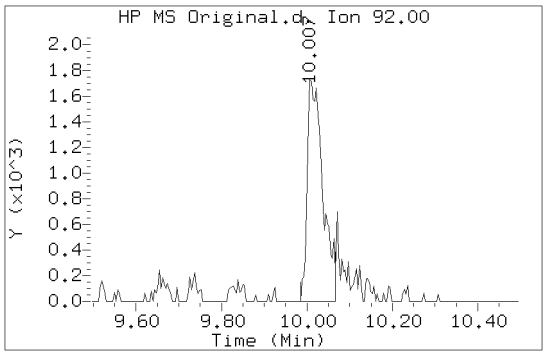

**AFTER**

MASS
91
AREA
5149
HEIGHT
3451
27-Dec-2022
16:07
linh
pham



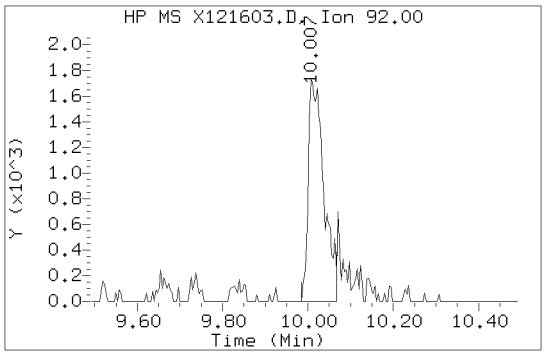

**BEFORE**

MASS
92
AREA
4404
HEIGHT
1727
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
92
AREA
4404
HEIGHT
1727
27-Dec-2022
16:07
linh
pham



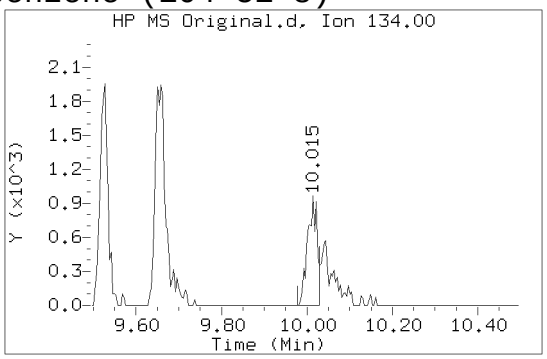
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

## n-Butylbenzene (104-51-8)

Reason Code:

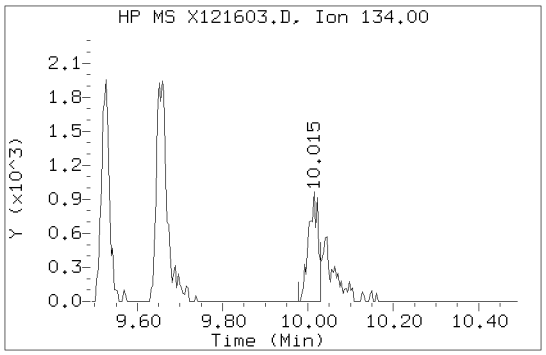
**BEFORE**

MASS
134
AREA
1502
HEIGHT
969
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
134
AREA
1502
HEIGHT
969
27-Dec-2022
16:07
linh
pham

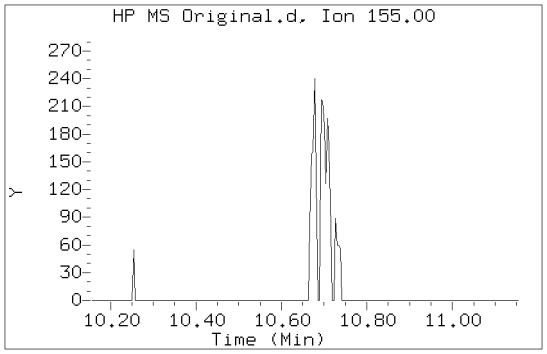



## 1,2-Dibromo-3-Chloropropane (96-12-8)

Reason Code:

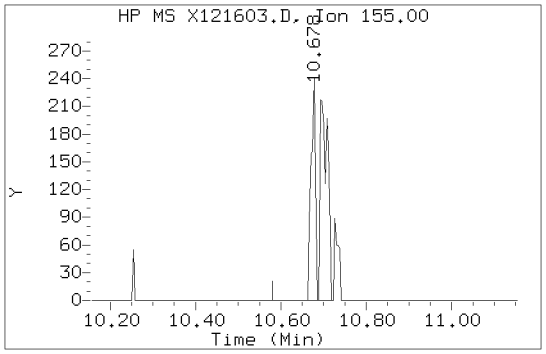
**BEFORE**

MASS
155
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



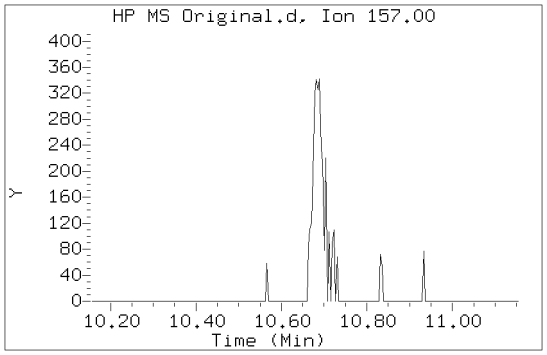

**AFTER**

MASS
155
AREA
441
HEIGHT
240
27-Dec-2022
16:07
linh
pham



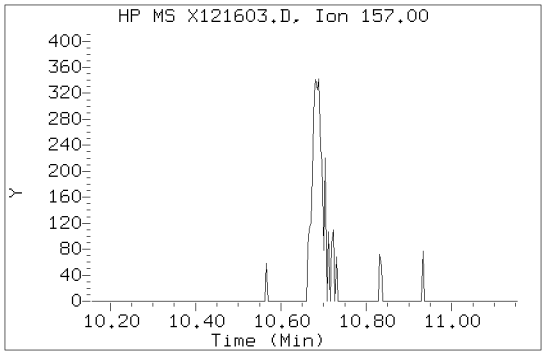

**BEFORE**

MASS
157
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



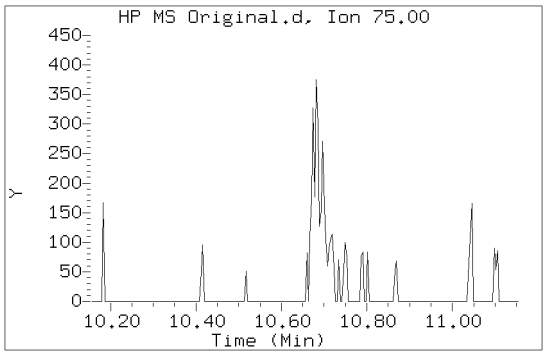

**AFTER**

MASS
157
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham



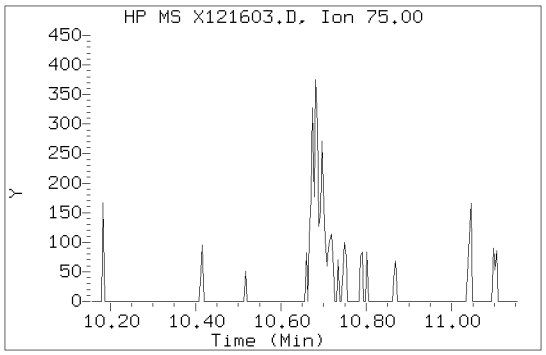

**BEFORE**

MASS
75
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
75
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham



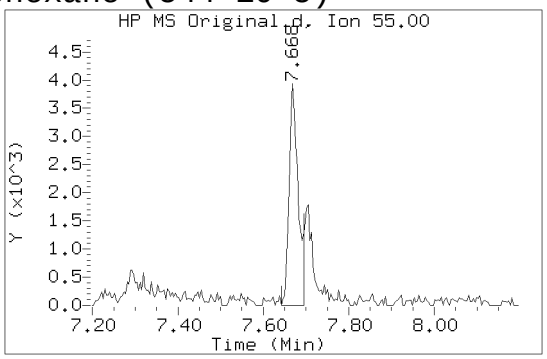
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

## 1-Chlorohexane (544-10-5)

Reason Code:

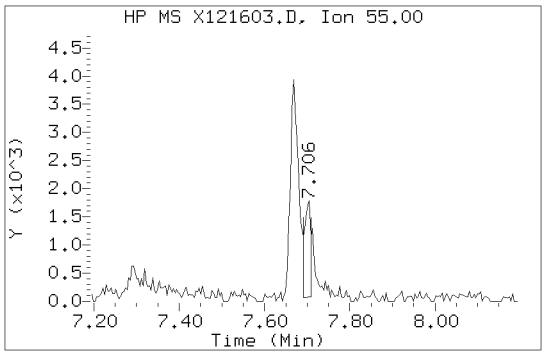
**BEFORE**

MASS
55
AREA
5785
HEIGHT
3936
27-Dec-2022
16:03
linh
pham



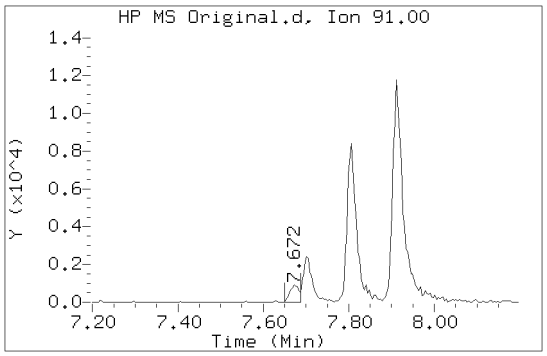

**AFTER**

MASS
55
AREA
1829
HEIGHT
1707
27-Dec-2022
16:07
linh
pham



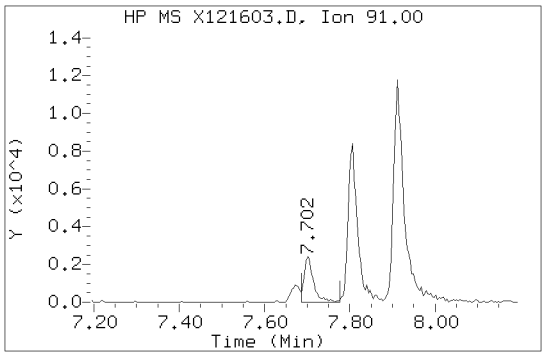

**BEFORE**

MASS
91
AREA
1355
HEIGHT
933
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
91
AREA
3802
HEIGHT
2430
27-Dec-2022
16:07
linh
pham

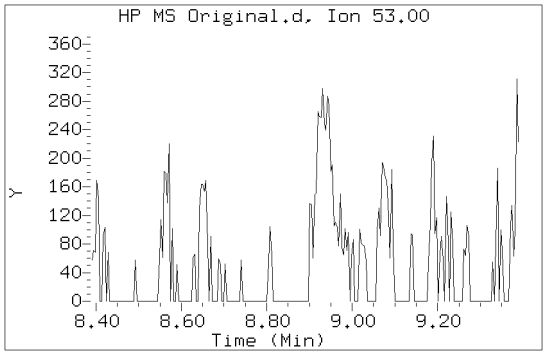



## trans-1,4-Dichloro-2-butene (110-57-6)

Reason Code:

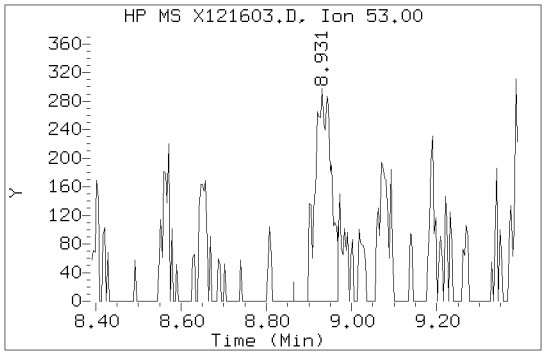
**BEFORE**

MASS
53
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



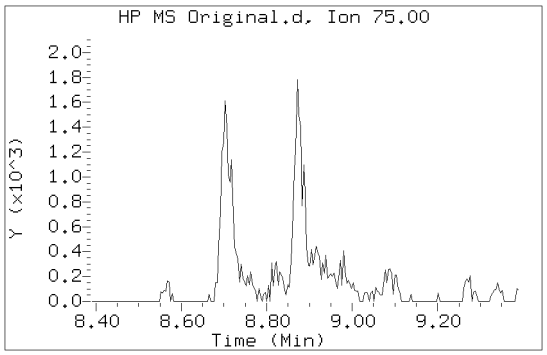

**AFTER**

MASS
53
AREA
792
HEIGHT
298
27-Dec-2022
16:07
linh
pham



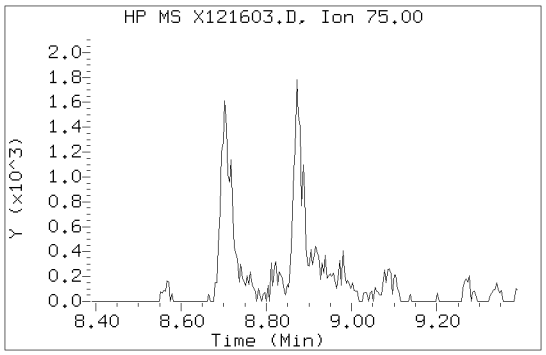

**BEFORE**

MASS
75
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
75
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham

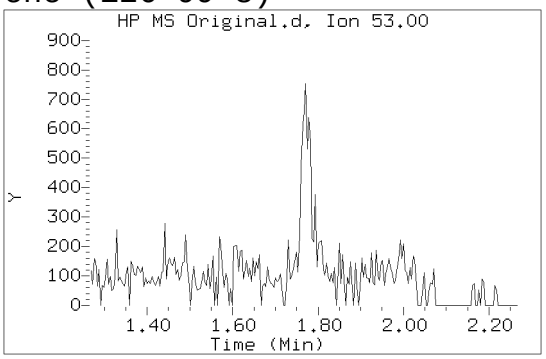


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

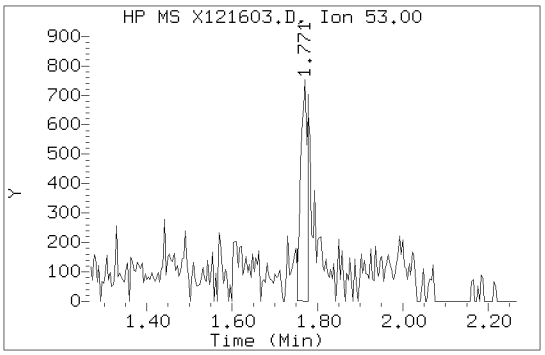
## Chloroprene (126-99-8)

Reason Code:

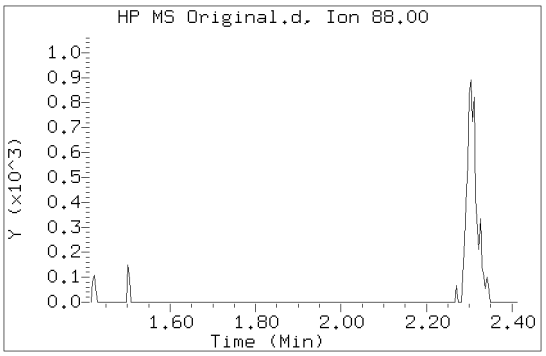
BEFORE
MASS
53
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



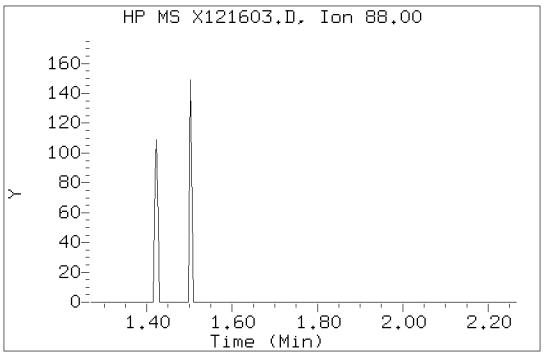

AFTER
MASS
53
AREA
900
HEIGHT
751
27-Dec-2022
16:07
linh
pham




BEFORE
MASS
88
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



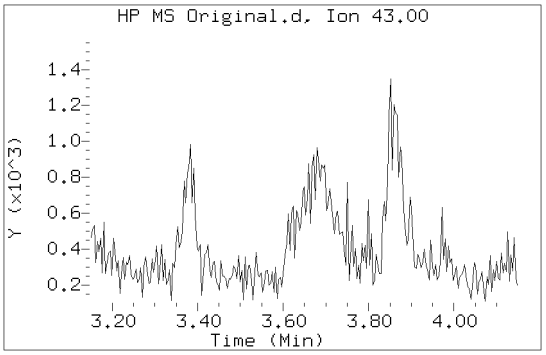

AFTER
MASS
88
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham



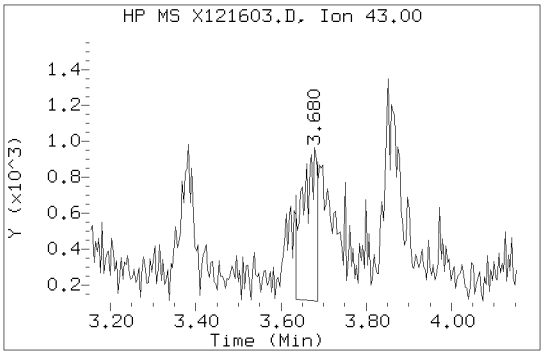

## Ethyl Acetate (141-78-6)

Reason Code:

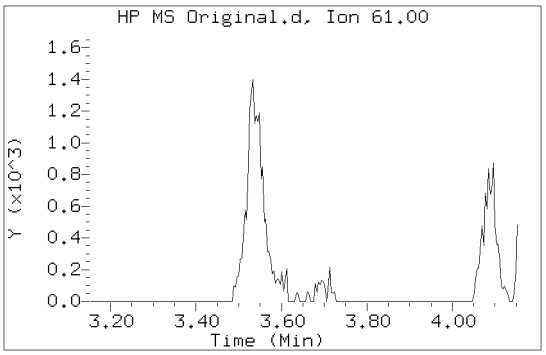
BEFORE
MASS
43
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



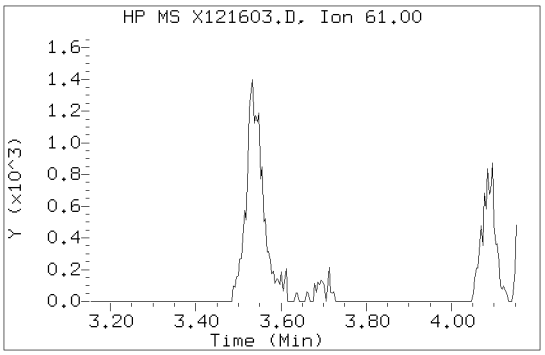

AFTER
MASS
43
AREA
2065
HEIGHT
853
27-Dec-2022
16:07
linh
pham




BEFORE
MASS
61
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham




AFTER
MASS
61
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham

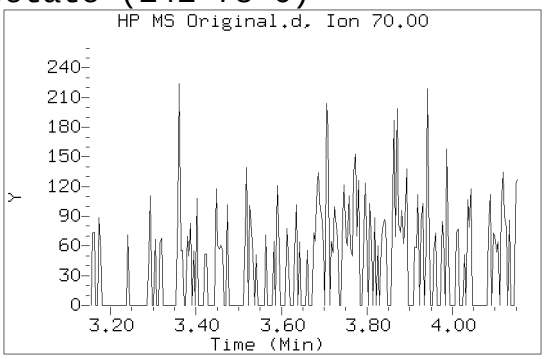


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

## Ethyl Acetate (141-78-6)

**BEFORE**

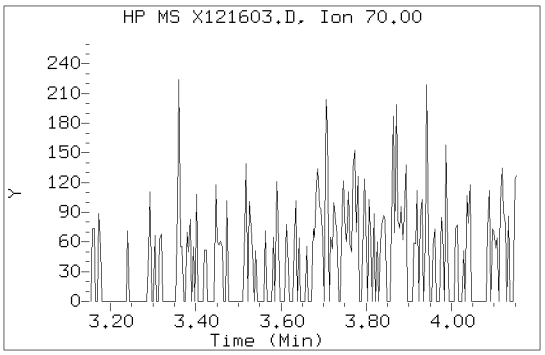
MASS
70
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham




Reason Code:

**AFTER**

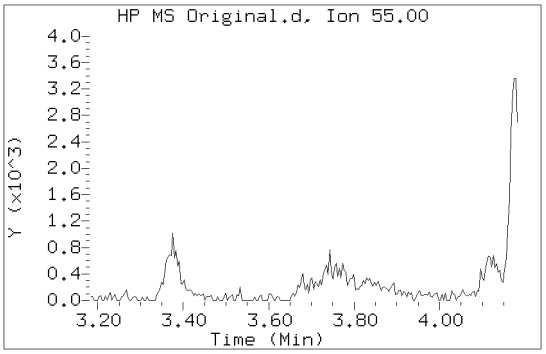
MASS
70
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham




## Methyl Acrylate (96-33-3)

**BEFORE**

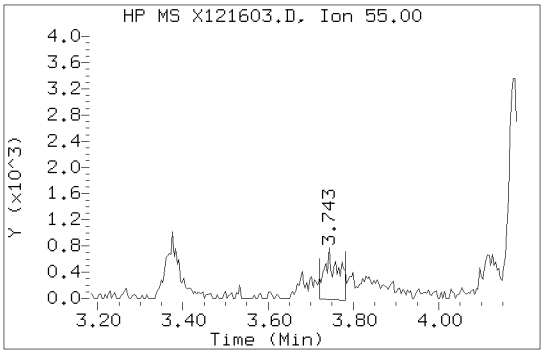
MASS
55
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham




Reason Code:

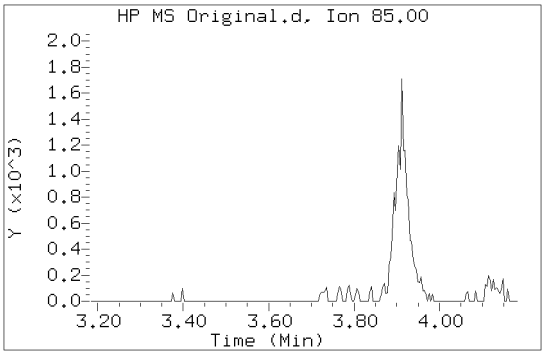
**AFTER**

MASS
55
AREA
1765
HEIGHT
787
27-Dec-2022
16:07
linh
pham



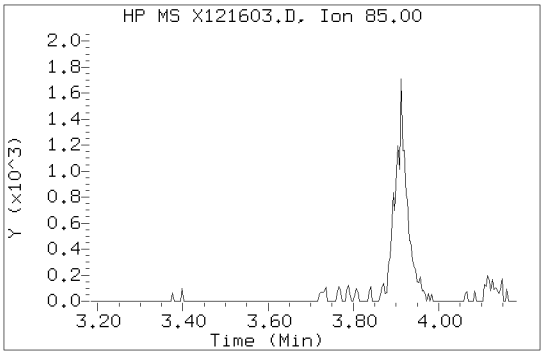

**BEFORE**

MASS
85
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham




**AFTER**

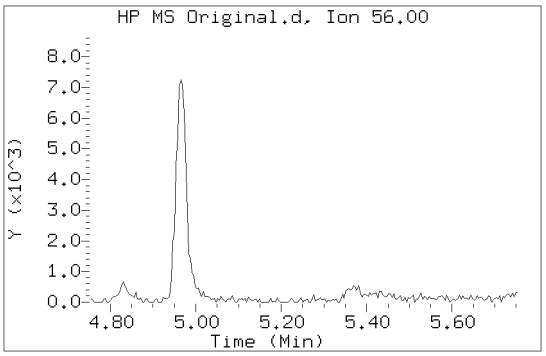
MASS
85
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham




## n-Butanol (71-36-3)

**BEFORE**

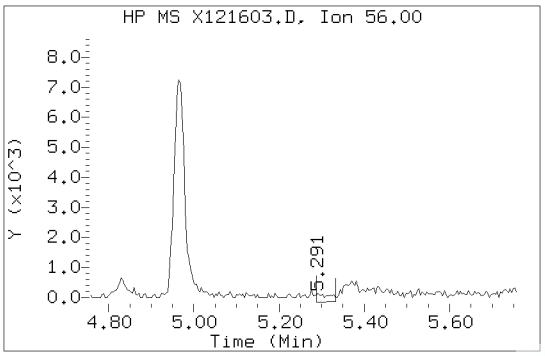
MASS
56
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham




Reason Code:

**AFTER**

MASS
56
AREA
622
HEIGHT
300
27-Dec-2022
16:07
linh
pham



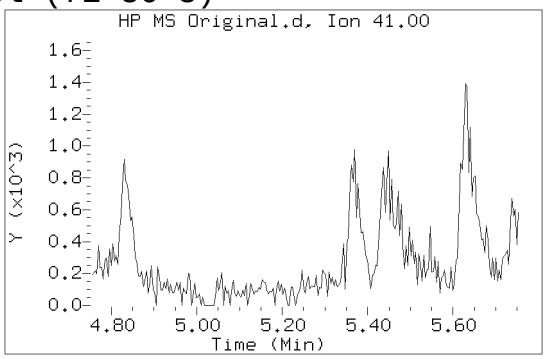
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

## n-Butanol (71-36-3)

Reason Code:

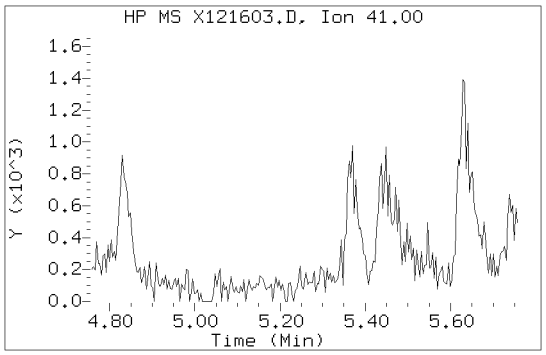
**BEFORE**

MASS
41
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
41
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham

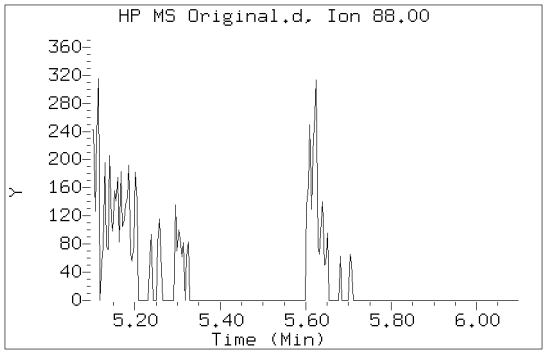



## 1,4-Dioxane ()

Reason Code:

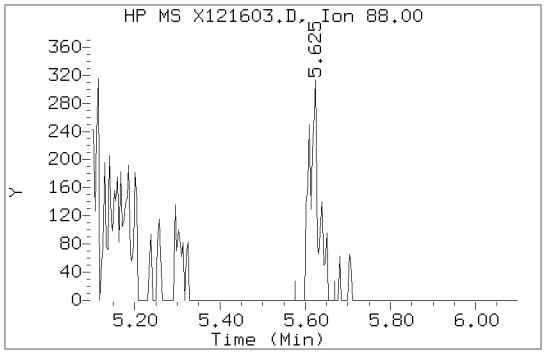
**BEFORE**

MASS
88
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



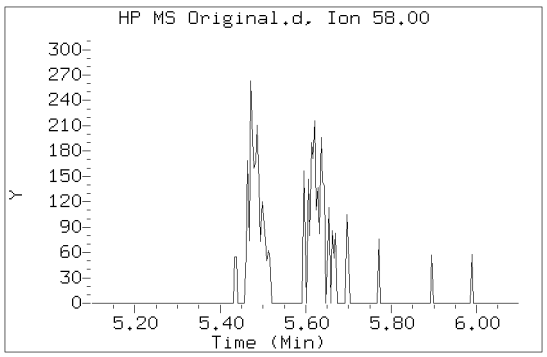

**AFTER**

MASS
88
AREA
462
HEIGHT
313
27-Dec-2022
16:07
linh
pham



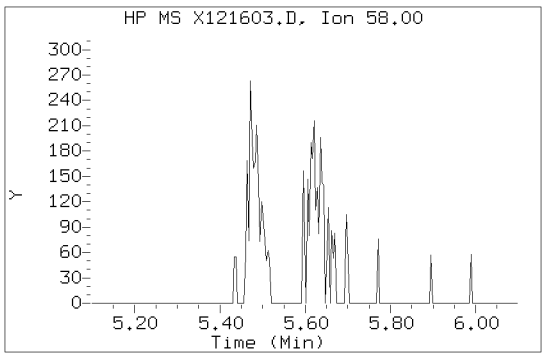

**BEFORE**

MASS
58
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
58
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham

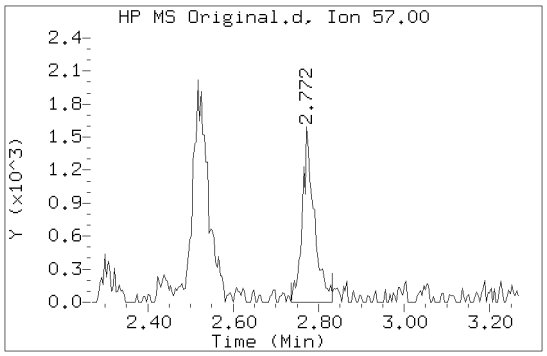



## n-Hexane (110-54-3)

Reason Code:

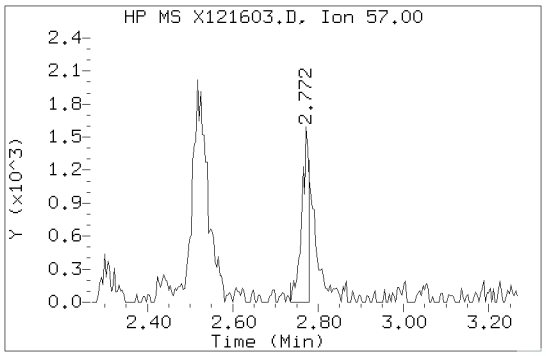
**BEFORE**

MASS
57
AREA
3089
HEIGHT
1591
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
57
AREA
1909
HEIGHT
1591
27-Dec-2022
16:07
linh
pham

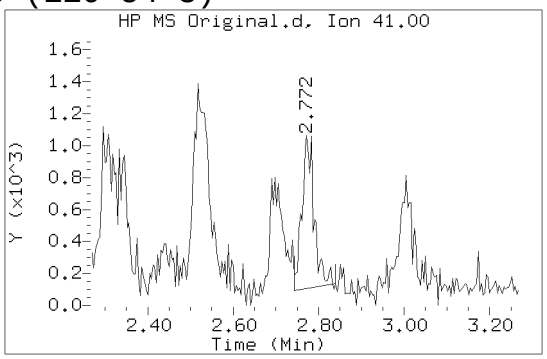


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

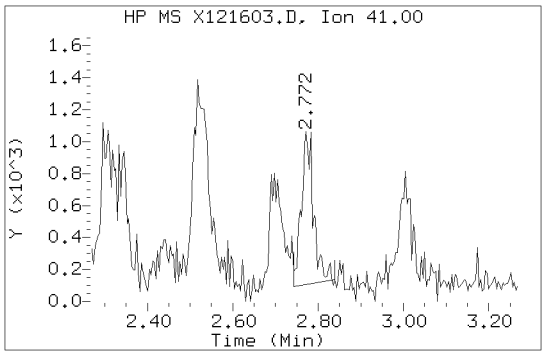
## n-Hexane (110-54-3)

Reason Code:

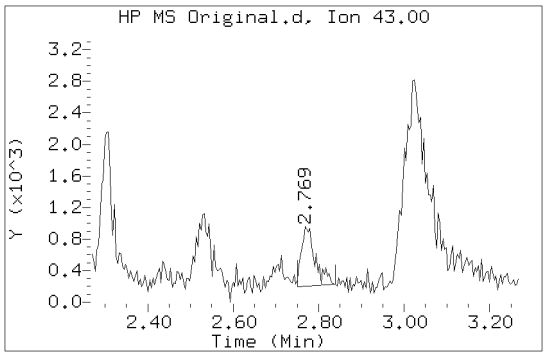
BEFORE
MASS
41
AREA
1918
HEIGHT
958
27-Dec-2022
16:03
linh
pham



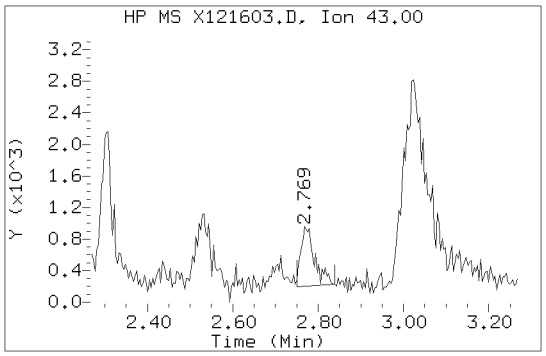

AFTER
MASS
41
AREA
1918
HEIGHT
958
27-Dec-2022
16:07
linh
pham




BEFORE
MASS
43
AREA
1726
HEIGHT
759
27-Dec-2022
16:03
linh
pham



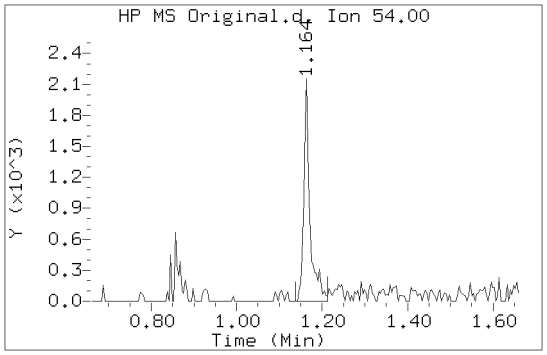

AFTER
MASS
43
AREA
1726
HEIGHT
759
27-Dec-2022
16:07
linh
pham



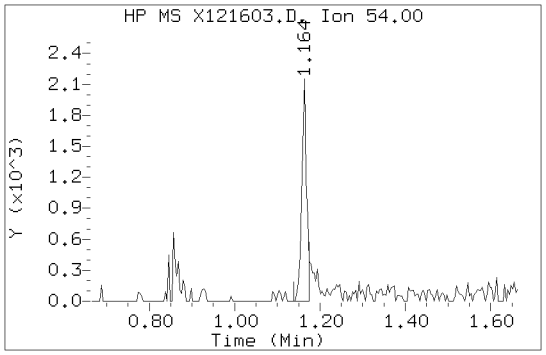

## 1,3-Butadiene (106-99-0)

Reason Code:

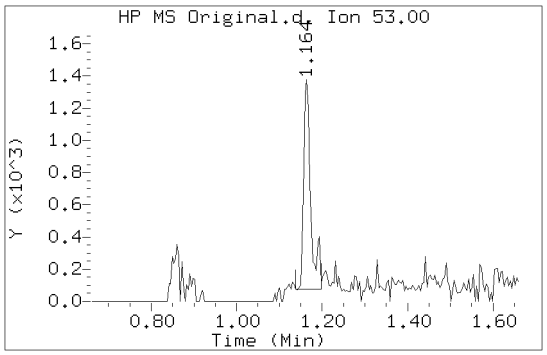
BEFORE
MASS
54
AREA
2206
HEIGHT
2153
27-Dec-2022
16:03
linh
pham



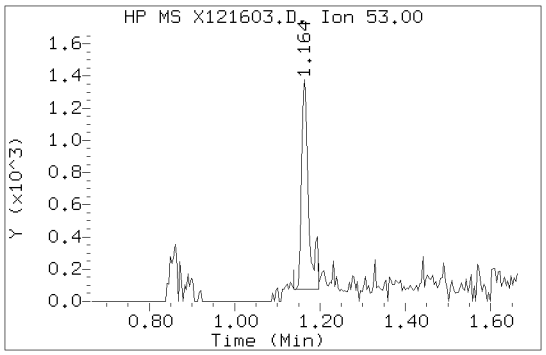

AFTER
MASS
54
AREA
1793
HEIGHT
2153
27-Dec-2022
16:07
linh
pham




BEFORE
MASS
53
AREA
1535
HEIGHT
1301
27-Dec-2022
16:03
linh
pham




AFTER
MASS
53
AREA
1535
HEIGHT
1301
27-Dec-2022
16:07
linh
pham

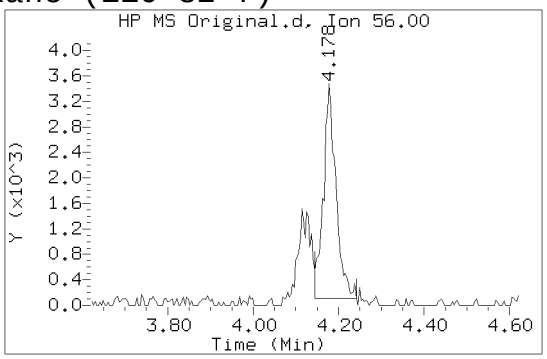


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

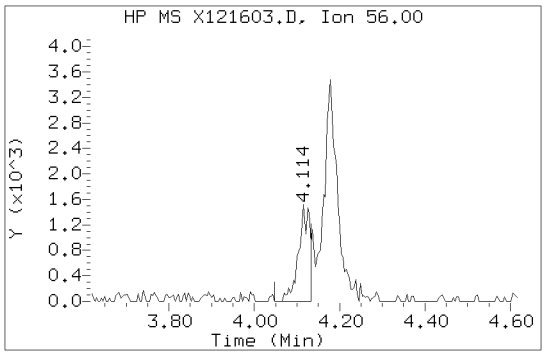
## Cyclohexane (110-82-7)

Reason Code:

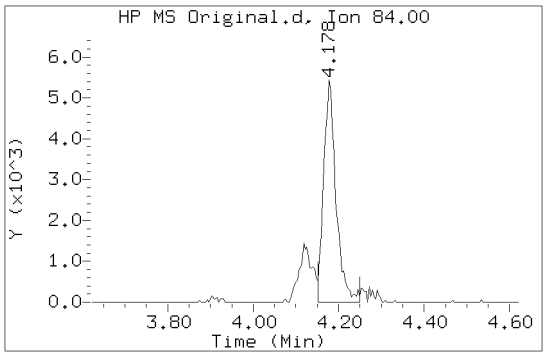
**BEFORE**
MASS
56
AREA
6884
HEIGHT
3363
27-Dec-2022
16:03
linh
pham



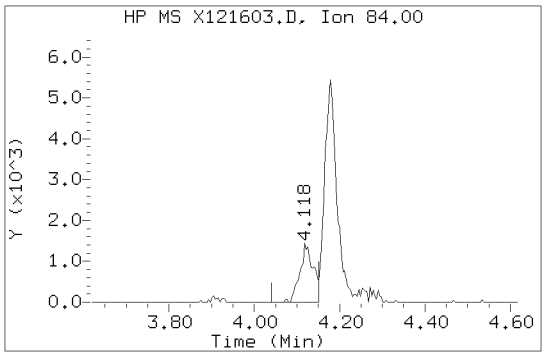

**AFTER**
MASS
56
AREA
2803
HEIGHT
1514
27-Dec-2022
16:07
linh
pham



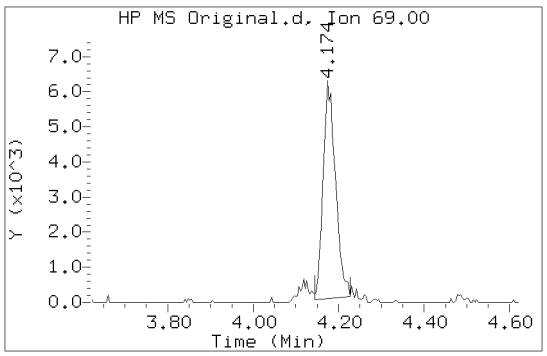

**BEFORE**
MASS
84
AREA
10951
HEIGHT
5440
27-Dec-2022
16:03
linh
pham



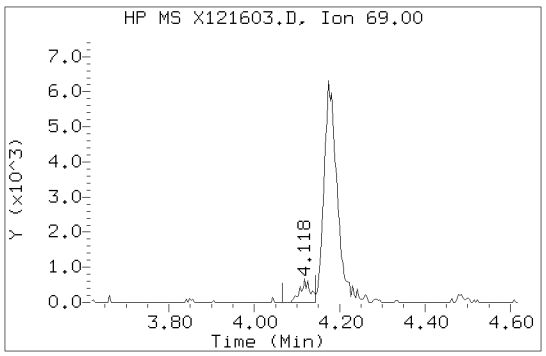

**AFTER**
MASS
84
AREA
3197
HEIGHT
1443
27-Dec-2022
16:07
linh
pham




**BEFORE**
MASS
69
AREA
12449
HEIGHT
6206
27-Dec-2022
16:03
linh
pham



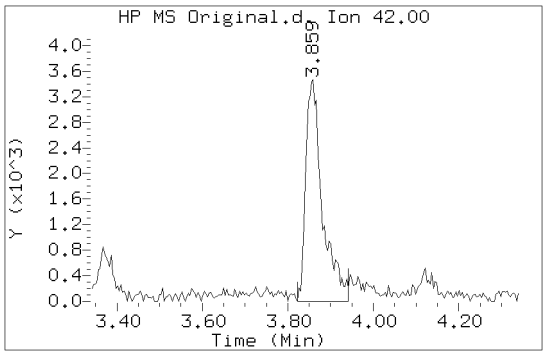

**AFTER**
MASS
69
AREA
1108
HEIGHT
681
27-Dec-2022
16:07
linh
pham



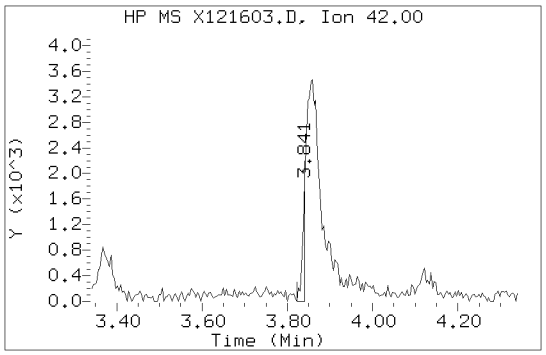

## Tetrahydrofuran (109-99-9)

Reason Code:

**BEFORE**
MASS
42
AREA
9468
HEIGHT
3467
27-Dec-2022
16:03
linh
pham




**AFTER**
MASS
42
AREA
900
HEIGHT
1891
27-Dec-2022
16:07
linh
pham

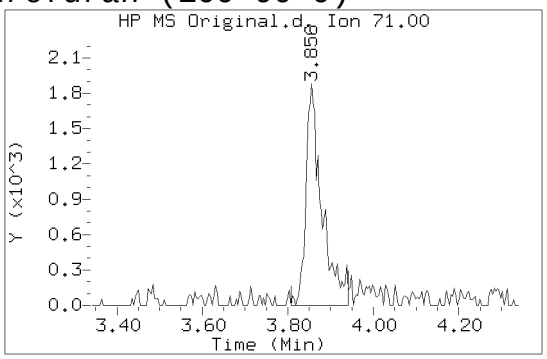


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

## Tetrahydrofuran (109-99-9)

### BEFORE

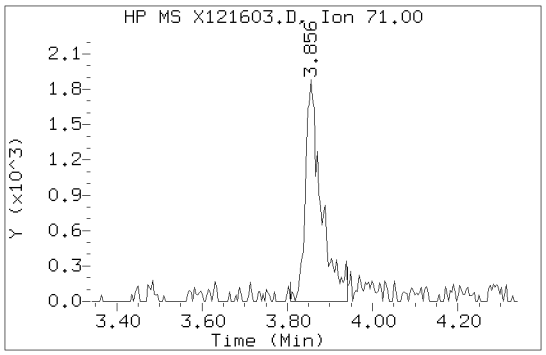
MASS
71
AREA
4885
HEIGHT
1881
27-Dec-2022
16:03
linh
pham




### Reason Code:

### AFTER

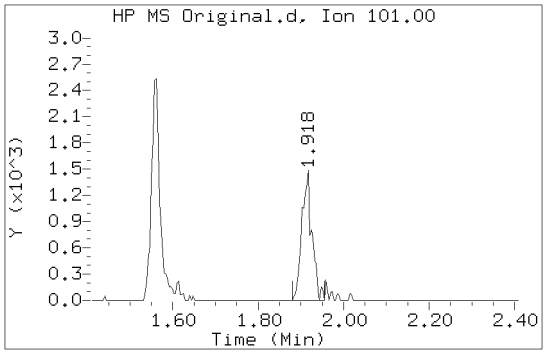
MASS
71
AREA
4885
HEIGHT
1881
27-Dec-2022
16:07
linh
pham




## Freon TF (76-13-1)

### BEFORE

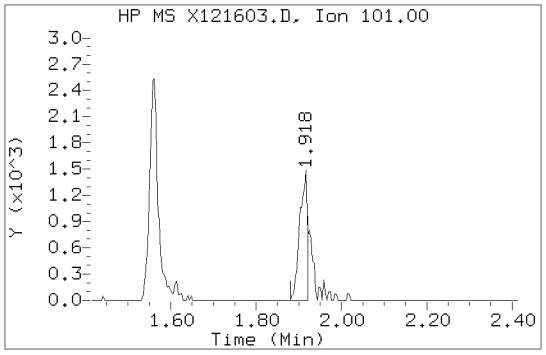
MASS
101
AREA
2478
HEIGHT
1484
27-Dec-2022
16:03
linh
pham




### Reason Code:

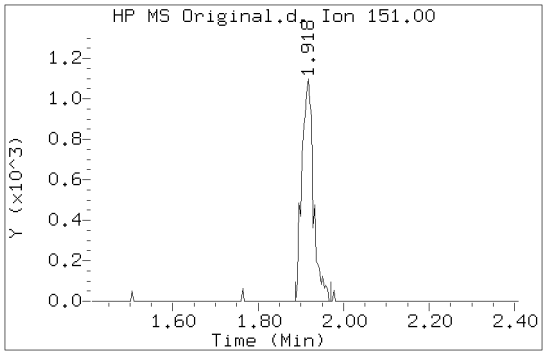
### AFTER

MASS
101
AREA
1851
HEIGHT
1484
27-Dec-2022
16:07
linh
pham



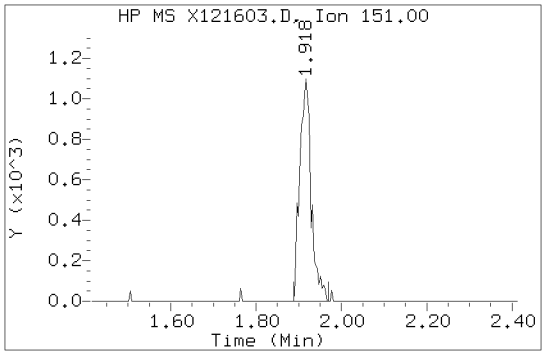

### BEFORE

MASS
151
AREA
2095
HEIGHT
1098
27-Dec-2022
16:03
linh
pham




### AFTER

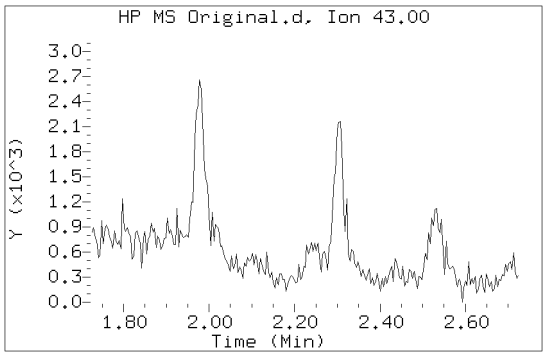
MASS
151
AREA
2095
HEIGHT
1098
27-Dec-2022
16:07
linh
pham




## Methyl Acetate (79-20-9)

### BEFORE

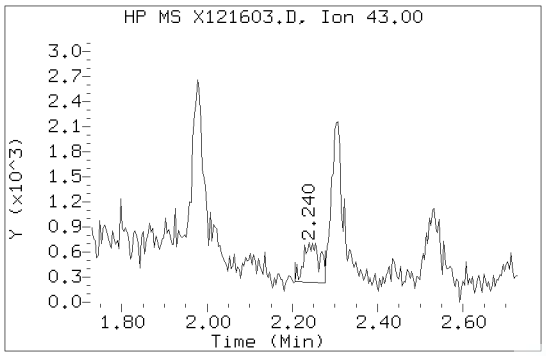
MASS
43
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham




### Reason Code:

### AFTER

MASS
43
AREA
1269
HEIGHT
477
27-Dec-2022
16:07
linh
pham



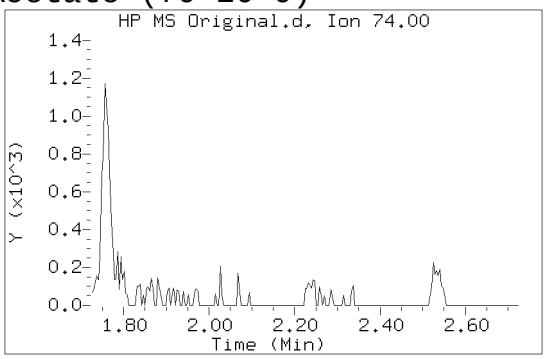
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

## Methyl Acetate (79-20-9)

Reason Code:

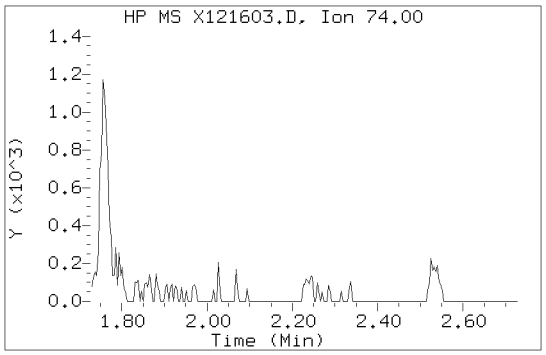
**BEFORE**

MASS
74
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
74
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham

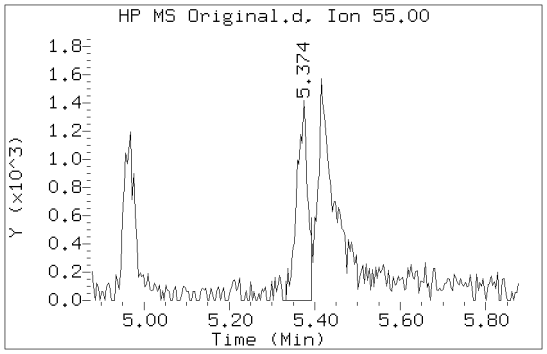



## Methylcyclohexane (108-87-2)

Reason Code:

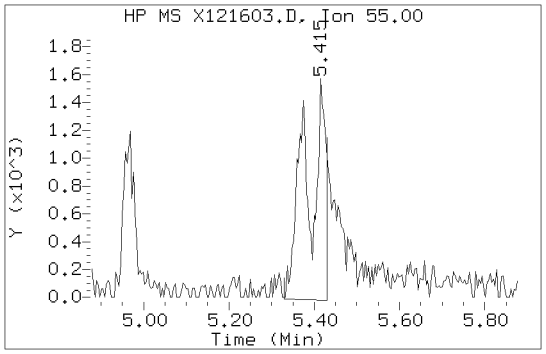
**BEFORE**

MASS
55
AREA
2505
HEIGHT
1416
27-Dec-2022
16:03
linh
pham



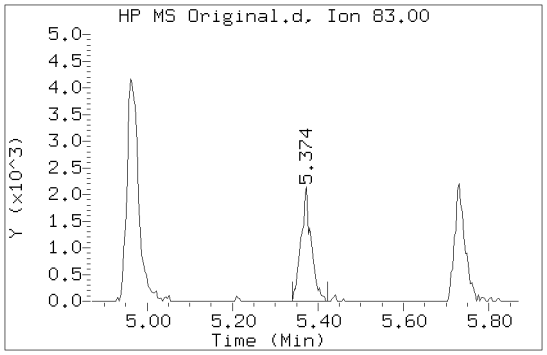

**AFTER**

MASS
55
AREA
4781
HEIGHT
1590
27-Dec-2022
16:07
linh
pham



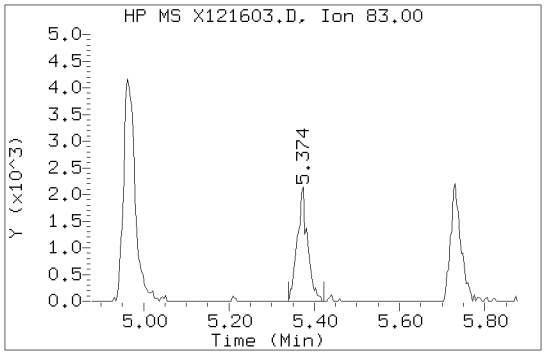

**BEFORE**

MASS
83
AREA
3627
HEIGHT
2141
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
83
AREA
3627
HEIGHT
2141
27-Dec-2022
16:07
linh
pham

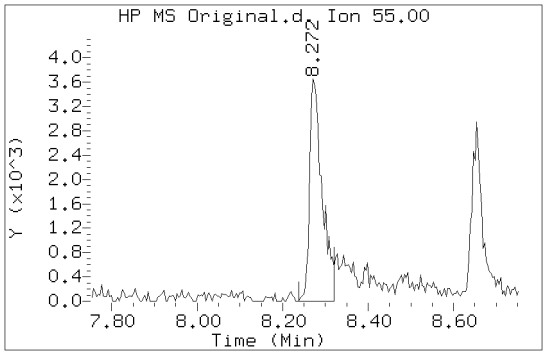



## Butyl acrylate (141-32-2)

Reason Code:

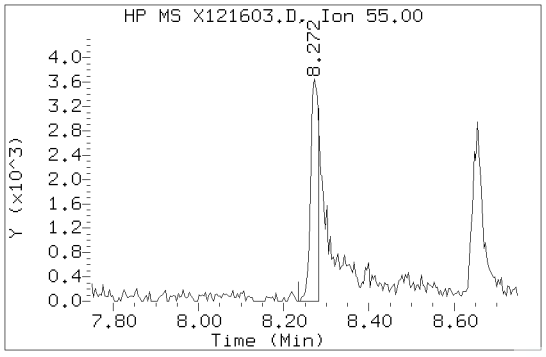
**BEFORE**

MASS
55
AREA
7480
HEIGHT
3653
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
55
AREA
4718
HEIGHT
3653
27-Dec-2022
16:07
linh
pham



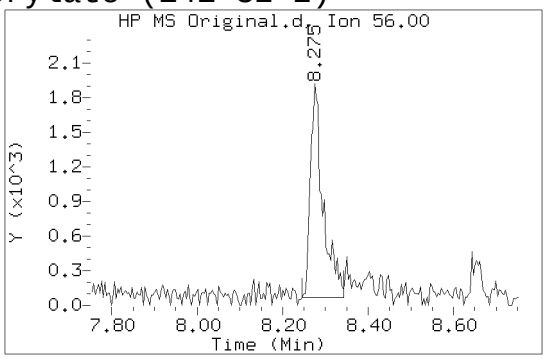
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

## Butyl acrylate (141-32-2)

Reason Code:

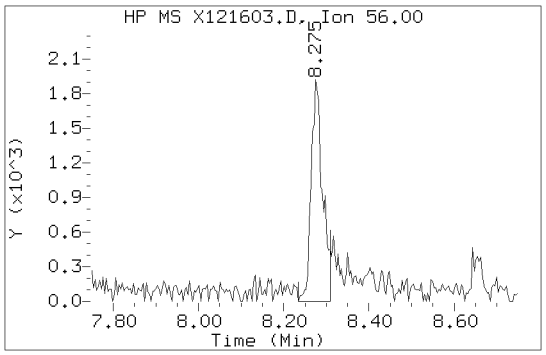
**BEFORE**

MASS
56
AREA
3795
HEIGHT
1858
27-Dec-2022
16:03
linh
pham



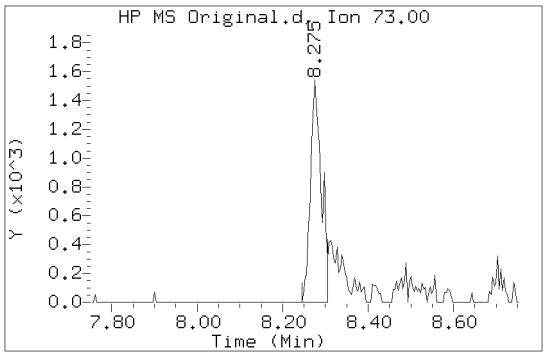

**AFTER**

MASS
56
AREA
3566
HEIGHT
1923
27-Dec-2022
16:07
linh
pham



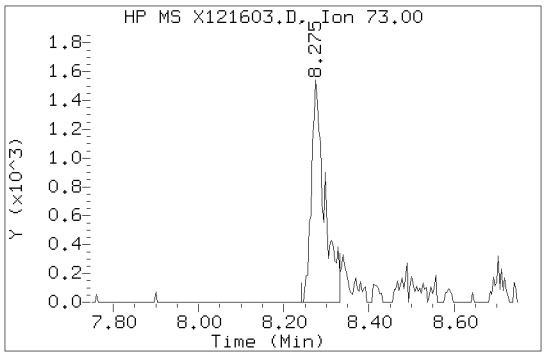

**BEFORE**

MASS
73
AREA
2742
HEIGHT
1542
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
73
AREA
3276
HEIGHT
1542
27-Dec-2022
16:07
linh
pham

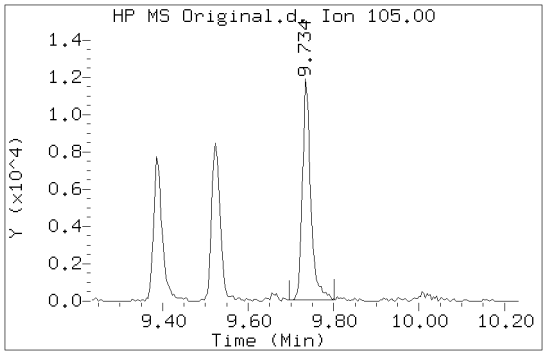



## 1,2,3-Trimethylbenzene (526-73-8)

Reason Code:

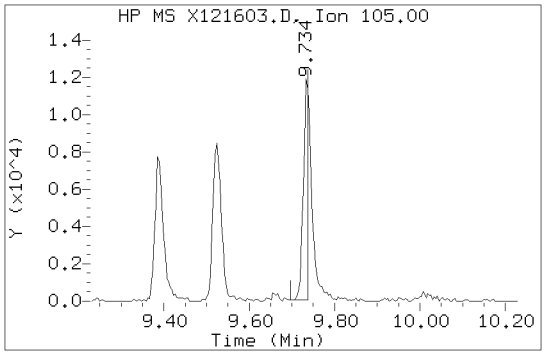
**BEFORE**

MASS
105
AREA
16642
HEIGHT
11860
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
105
AREA
9626
HEIGHT
11860
27-Dec-2022
16:07
linh
pham

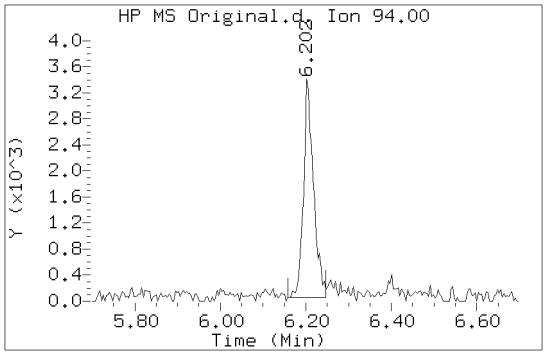



## Dimethyl Disulfide (624-92-0)

Reason Code:

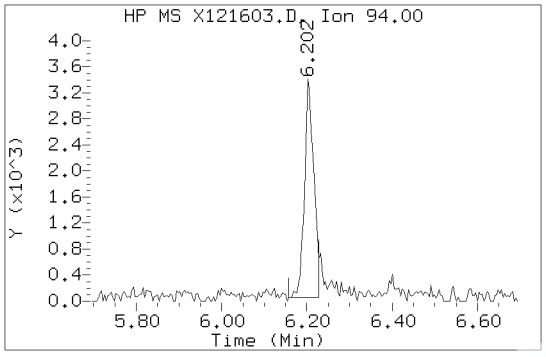
**BEFORE**

MASS
94
AREA
5523
HEIGHT
3352
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
94
AREA
5153
HEIGHT
3352
27-Dec-2022
16:07
linh
pham

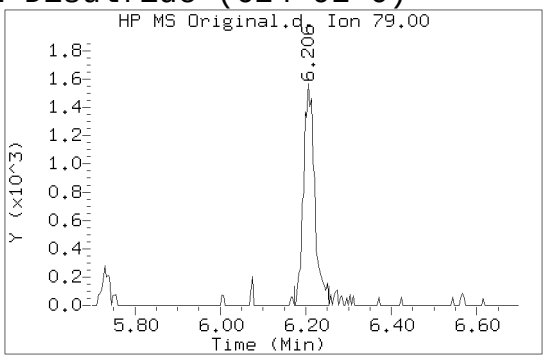


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InstruID : voa6.i
LabSampID : VSTD000.5

## Dimethyl Disulfide (624-92-0)

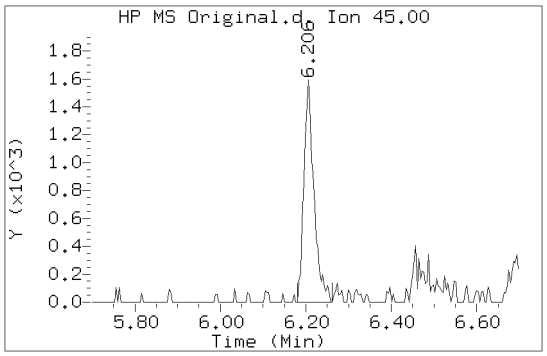
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**BEFORE**

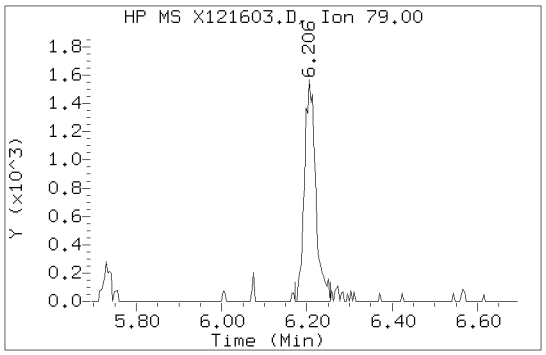
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Reason Code:

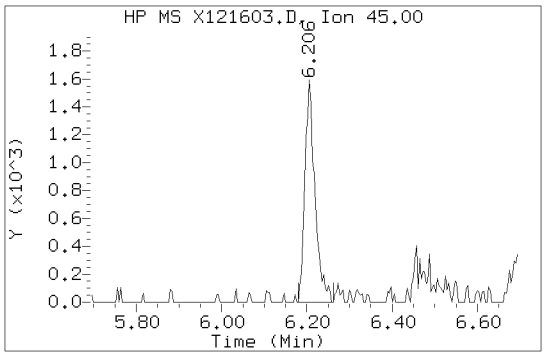
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**AFTER**

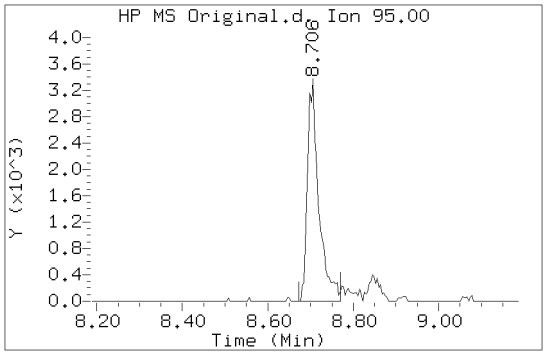
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HEIGHT
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16:07
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## 4-Bromofluorobenzene (460-00-4)

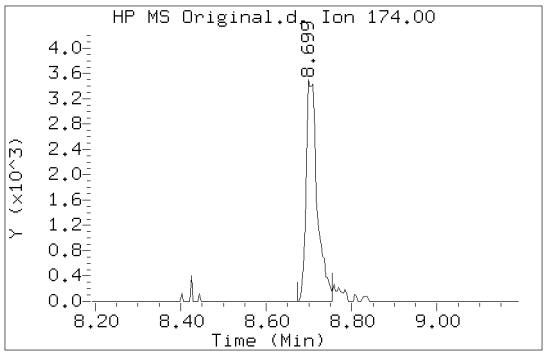
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27-Dec-2022
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linh
pham




**BEFORE**

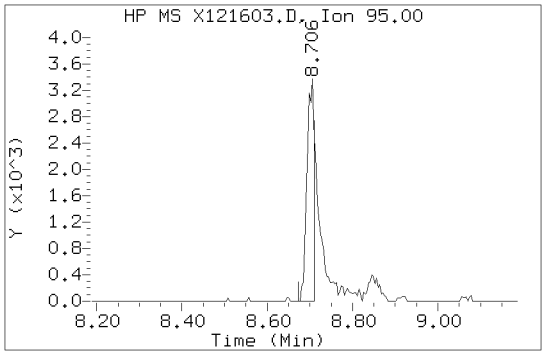
MASS
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AREA
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HEIGHT
3502
27-Dec-2022
16:03
linh
pham




Reason Code:

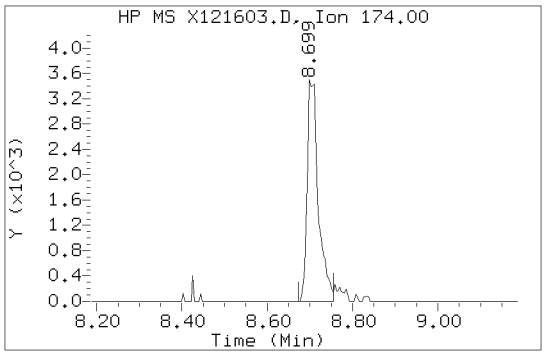
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MASS
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3870
HEIGHT
3372
27-Dec-2022
16:07
linh
pham




**AFTER**

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6370
HEIGHT
3502
27-Dec-2022
16:07
linh
pham



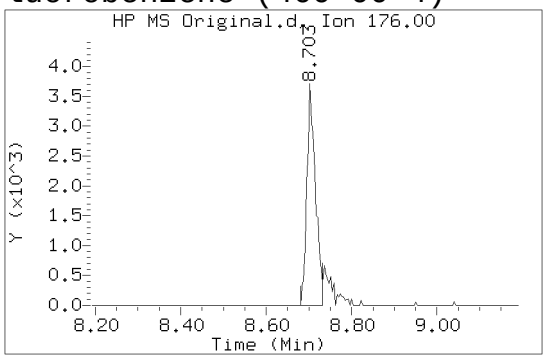
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InstruID : voa6.i
LabSampID : VSTD000.5

4-Bromofluorobenzene (460-00-4)

Reason Code:

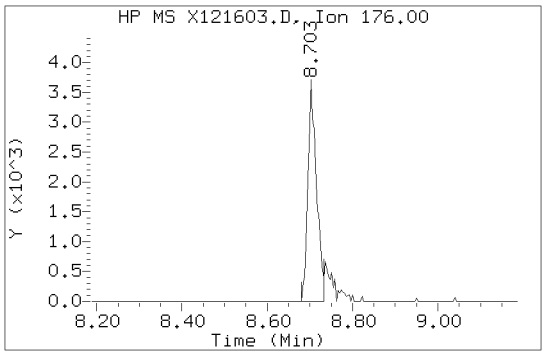
BEFORE

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27-Dec-2022
16:03
linh
pham




AFTER

MASS
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5204
HEIGHT
3711
27-Dec-2022
16:07
linh
pham



ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121604.D
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Inj Date  : 16-DEC-2022 12:41
Operator  : PC  Inst ID: voa6.i
Smp Info  : VSTD001;VSTD001;1;3;
Misc Info : V6;WATER;0;1;
Comment   :
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Meth Date : 27-Dec-2022 16:07 voa6.i  Quant Type: ISTD
Cal Date  : 16-DEC-2022 12:20  Cal File: X121603.D
Als bottle: 5  Calibration Sample, Level: 3
Dil Factor: 1.00000
Integrator: HP RTE  Compound Sublist: 08260V6.sub
Target Version:  4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

| Name | Value | Description |
|---|---|---|
| DF | 1.000 | Dilution Factor |
| Uf | 5.000 | ng unit correction factor |
| Vo | 5.000 | sample purged |
| Cpnd Variable | | Local Compound Variable |

| | Compounds | QUANT SIG MASS | RT | EXP RT | REL RT | RESPONSE | AMOUNTS CAL-AMT ( ug/l) | ON-COL ( ug/l) |
|---|---|---|---|---|---|---|---|---|
| * 1 | Pentafluorobenzene | 168 | 4.178 | 4.178 | (1.000) | 450308 | 50.0000 | |
| 135 | 1,4-Dioxane | 88 | 5.610 | 5.610 | (1.343) | 820 | 20.0000 | 19.92(M) |
| 140 | 1,3-Butadiene | 54 | 1.160 | 1.160 | (0.278) | 3432 | 1.00000 | 1.11 |
| 25 | Methacrylonitrile | 41 | 3.852 | 3.852 | (0.922) | 3285 | 1.00000 | 1.03(M) |
| 12 | Isobutyl Alcohol | 43 | 4.695 | 4.695 | (1.124) | 9436 | 20.0000 | 18.62(M) |
| 13 | Acetonitrile | 39 | 2.198 | 2.198 | (0.526) | 4183 | 10.0000 | 10.20 |
| 14 | Allyl Chloride | 41 | 2.202 | 2.202 | (0.527) | 8574 | 1.00000 | 1.09 |
| 4 | Propionitrile | 54 | 3.687 | 3.687 | (0.882) | 4742 | 10.0000 | 10.32(M) |
| 136 | n-Hexane | 57 | 2.776 | 2.776 | (0.664) | 2343 | 1.00000 | 0.72 |
| 72 | trans-1,4-Dichloro-2-butene | 53 | 8.920 | 8.920 | (1.163) | 1196 | 1.00000 | 0.85(M) |
| 194 | Acetaldehyde | 44 | 1.212 | 1.212 | (0.290) | 3384 | 4.00000 | (M) |
| 23 | Chloroprene | 53 | 1.767 | 1.767 | (0.423) | 1686 | 1.00000 | 1.10(M) |
| 145 | alpha-Methylstyrene | 118 | 9.272 | 9.272 | (0.960) | 6032 | 1.00000 | 0.77 |
| 200 | Dimethyl Disulfide | 94 | 6.206 | 6.206 | (0.809) | 8295 | 1.00000 | 0.94 |
| 139 | Diethyl ether | 59 | 1.760 | 1.760 | (0.421) | 2983 | 1.00000 | 0.99 |
| 130 | Ethyl Acetate | 43 | 3.675 | 3.675 | (0.880) | 3144 | 1.00000 | 0.89(M) |
| 40 | Methyl Methacrylate | 41 | 5.628 | 5.628 | (1.347) | 3145 | 1.00000 | 1.02 |
| 49 | Ethyl Methacrylate | 69 | 6.727 | 6.727 | (1.355) | 3303 | 1.00000 | 1.02(M) |
| 132 | n-Butanol | 56 | 5.239 | 5.239 | (1.254) | 1171 | 20.0000 | 60.69(M) |
| 142 | Tetrahydrofuran | 42 | 3.844 | 3.844 | (0.920) | 1361 | 2.00000 | (M) |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 150 | Allyl alcohol | 57 | 2.776 | 2.776 (0.664) | 2343 | 20.0000 | 13.39 |
| 166 | 1,2,3-Trimethylbenzene | 105 | 9.733 | 9.733 (1.007) | 18347 | 1.00000 | 1.08 |

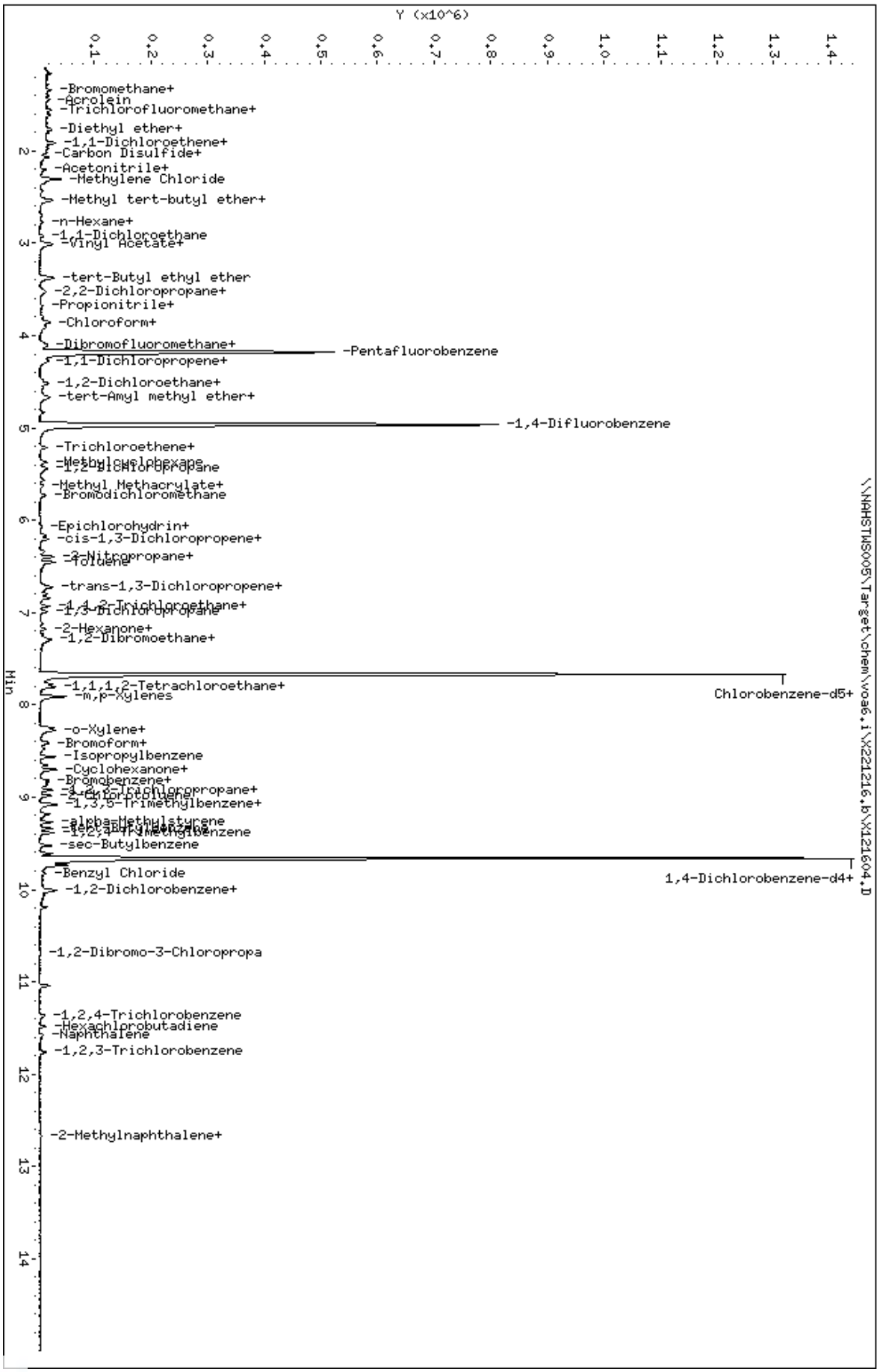
| | Compounds | QUANT SIG MASS | RT | EXP RT | REL RT | RESPONSE | AMOUNTS CAL-AMT ( ug/l) | ON-COL ( ug/l) |
|---|---|---|---|---|---|---|---|---|
| | 131 Methyl Acrylate | 55 | 3.743 | 3.743 | (0.896) | 3084 | 1.00000 | 1.00(M) |
| | 162 Butyl acrylate | 55 | 8.271 | 8.271 | (1.078) | 7647 | 1.00000 | 0.90 |
| | 2 Dichlorodifluoromethane | 85 | 0.969 | 0.969 | (0.232) | 2911 | 1.00000 | 1.30 |
| | 3 Chloromethane | 50 | 1.078 | 1.078 | (0.258) | 3670 | 1.00000 | 3.07 |
| | 5 Vinyl Chloride | 62 | 1.141 | 1.141 | (0.273) | 3645 | 1.00000 | 0.92 |
| | 6 Bromomethane | 94 | 1.340 | 1.340 | (0.321) | 3293 | 1.00000 | 2.83 |
| | 7 Chloroethane | 64 | 1.400 | 1.400 | (0.335) | 2516 | 1.00000 | 0.91(M) |
| | 8 Trichlorofluoromethane | 101 | 1.554 | 1.554 | (0.372) | 4906 | 1.00000 | 0.89 |
| | 9 Acrolein | 56 | 1.452 | 1.452 | (0.348) | 761 | 2.00000 | 5.22(M) |
| | 10 Acetone | 43 | 1.977 | 1.977 | (0.473) | 4787 | 2.00000 | 3.75(M) |
| | 11 1,1-Dichloroethene | 96 | 1.913 | 1.913 | (0.458) | 3238 | 1.00000 | 0.94 |
| | 15 Iodomethane | 142 | 2.026 | 2.026 | (0.485) | 3865 | 2.00000 | 4.18(TM) |
| | 16 Acrylonitrile | 53 | 2.554 | 2.554 | (0.612) | 2258 | 2.00000 | 1.94(M) |
| | 17 Methylene Chloride | 84 | 2.300 | 2.300 | (0.550) | 5355 | 1.00000 | 1.14(M) |
| | 18 Methyl tert-butyl ether | 73 | 2.536 | 2.536 | (0.607) | 12521 | 1.00000 | 1.11 |
| | 19 Carbon Disulfide | 76 | 2.067 | 2.067 | (0.495) | 18122 | 2.00000 | 2.02 |
| | 20 trans-1,2-Dichloroethene | 96 | 2.532 | 2.532 | (0.606) | 3821 | 1.00000 | 0.99 |
| | 21 Vinyl Acetate | 43 | 3.012 | 3.012 | (0.721) | 17842 | 2.00000 | 1.81 |
| | 22 1,1-Dichloroethane | 63 | 2.922 | 2.922 | (0.699) | 7218 | 1.00000 | 1.07 |
| | 24 2-Butanone | 43 | 3.619 | 3.619 | (0.866) | 2498 | 2.00000 | 4.83(M) |
| | 26 2,2-Dichloropropane | 77 | 3.514 | 3.514 | (0.841) | 5896 | 1.00000 | 1.03 |
| | 27 cis-1,2-Dichloroethene | 96 | 3.540 | 3.540 | (0.847) | 4469 | 1.00000 | 0.96 |
| | 28 Chloroform | 83 | 3.908 | 3.908 | (0.935) | 7768 | 1.00000 | 1.03 |
| | 29 Bromochloromethane | 128 | 3.803 | 3.803 | (0.910) | 2689 | 1.00000 | 1.05 |
| $ | 30 Dibromofluoromethane | 113 | 4.103 | 4.103 | (0.982) | 4769 | 1.00000 | 0.94 |
| | 31 1,1,1-Trichloroethane | 97 | 4.088 | 4.088 | (0.978) | 5914 | 1.00000 | 0.99 |
| | 32 1,1-Dichloropropene | 75 | 4.286 | 4.286 | (0.863) | 4698 | 1.00000 | 0.96 |
| | 33 1,2-Dichloroethane | 62 | 4.564 | 4.564 | (0.919) | 5568 | 1.00000 | 0.99 |
| | 34 Carbon Tetrachloride | 117 | 4.271 | 4.271 | (0.860) | 6221 | 1.00000 | 1.19 |
| $ | 35 1,2-Dichloroethane-d4 | 65 | 4.485 | 4.485 | (1.074) | 5559 | 1.00000 | 1.48 |
| * | 36 1,4-Difluorobenzene | 114 | 4.965 | 4.965 | (1.000) | 685937 | 50.0000 | |
| | 37 Benzene | 78 | 4.515 | 4.515 | (0.909) | 16367 | 1.00000 | 0.99 |
| | 38 Trichloroethene | 130 | 5.216 | 5.216 | (1.051) | 4352 | 1.00000 | 0.93 |
| | 39 Bromodichloromethane | 83 | 5.730 | 5.730 | (1.154) | 6296 | 1.00000 | 1.02(M) |
| | 41 2-Chloroethylvinyl ether | 63 | 6.071 | 6.071 | (1.223) | 3202 | 2.00000 | 1.83(M) |
| | 42 1,2-Dichloropropane | 63 | 5.445 | 5.445 | (1.097) | 4604 | 1.00000 | 1.05(M) |
| | 44 Dibromomethane | 93 | 5.557 | 5.557 | (1.119) | 2906 | 1.00000 | 0.98 |
| | 45 4-Methyl-2-Pentanone | 43 | 6.341 | 6.341 | (0.827) | 6859 | 2.00000 | 1.97 |
| | 46 cis-1,3-Dichloropropene | 75 | 6.168 | 6.168 | (1.242) | 6537 | 1.00000 | 0.90 |
| * | 47 Chlorobenzene-d5 | 117 | 7.671 | 7.671 | (1.000) | 649074 | 50.0000 | |
| $ | 48 Toluene-d8 | 98 | 6.401 | 6.401 | (0.834) | 17067 | 1.00000 | 1.06 |
| | 50 Toluene | 91 | 6.457 | 6.457 | (0.842) | 17914 | 1.00000 | 0.99 |
| | 51 trans-1,3-Dichloropropene | 75 | 6.693 | 6.693 | (1.348) | 5418 | 1.00000 | 0.90 |
| | 52 2-Hexanone | 43 | 7.109 | 7.109 | (0.927) | 4520 | 2.00000 | 1.91 |
| | 53 1,1,2-Trichloroethane | 83 | 6.843 | 6.843 | (0.892) | 3499 | 1.00000 | 0.97 |
| | 54 1,3-Dichloropropane | 76 | 6.989 | 6.989 | (0.911) | 7216 | 1.00000 | 1.01 |
| | 55 Dibromochloromethane | 129 | 7.177 | 7.177 | (0.936) | 5024 | 1.00000 | 0.96 |
| | 56 Tetrachloroethene | 164 | 6.933 | 6.933 | (0.904) | 3331 | 1.00000 | 0.89 |
| | 57 1,2-Dibromoethane | 107 | 7.270 | 7.270 | (0.948) | 4350 | 1.00000 | 0.96 |
| | 58 1-Chlorohexane | 55 | 7.705 | 7.705 | (1.552) | 3155 | 1.00000 | 0.95(MH) |
| | 59 Chlorobenzene | 112 | 7.698 | 7.698 | (1.003) | 12555 | 1.00000 | 0.98 |
| | 60 1,1,1,2-Tetrachloroethane | 131 | 7.776 | 7.776 | (1.014) | 4485 | 1.00000 | 0.94 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 61 Ethylbenzene | 106 | 7.806 | 7.806 (1.018) | 5698 | 1.00000 | 0.95 |
| 62 m,p-Xylenes | 106 | 7.911 | 7.911 (1.031) | 14464 | 2.00000 | 1.87 |

| | Compounds | QUANT SIG MASS | RT | EXP RT | REL RT | RESPONSE | AMOUNTS CAL-AMT ( ug/l) | ON-COL ( ug/l) |
|---|---|---|---|---|---|---|---|---|
| | 63 o-Xylene | 106 | 8.249 | 8.249 | (1.075) | 6670 | 1.00000 | 0.87 |
| | 64 Styrene | 104 | 8.282 | 8.282 | (1.080) | 10384 | 1.00000 | 0.81 |
| | 66 Bromoform | 173 | 8.417 | 8.417 | (1.097) | 3274 | 1.00000 | 0.90(T) |
| | 67 Isopropylbenzene | 105 | 8.564 | 8.564 | (1.116) | 15163 | 1.00000 | 0.87 |
| | 68 1,1,2,2-Tetrachloroethane | 83 | 8.845 | 8.845 | (0.915) | 5934 | 1.00000 | 1.05(M) |
| $ | 69 4-Bromofluorobenzene | 95 | 8.702 | 8.702 | (1.134) | 7790 | 1.00000 | 1.36(M) |
| * | 70 1,4-Dichlorobenzene-d4 | 152 | 9.662 | 9.662 | (1.000) | 351251 | 50.0000 | |
| | 71 1,2,3-Trichloropropane | 75 | 8.871 | 8.871 | (0.918) | 3978 | 1.00000 | 1.01 |
| | 73 n-Propylbenzene | 91 | 8.923 | 8.923 | (0.924) | 15006 | 1.00000 | 0.77 |
| | 74 Bromobenzene | 156 | 8.818 | 8.818 | (0.913) | 5554 | 1.00000 | 0.96 |
| | 75 1,3,5-Trimethylbenzene | 105 | 9.073 | 9.073 | (0.939) | 11820 | 1.00000 | 0.82 |
| | 76 2-Chlorotoluene | 91 | 8.980 | 8.980 | (0.929) | 12470 | 1.00000 | 0.97 |
| | 77 4-Chlorotoluene | 91 | 9.085 | 9.085 | (0.940) | 12140 | 1.00000 | 0.83 |
| | 78 tert-Butylbenzene | 119 | 9.340 | 9.340 | (0.967) | 9357 | 1.00000 | 0.79 |
| | 79 1,2,4-Trimethylbenzene | 105 | 9.385 | 9.385 | (0.971) | 12988 | 1.00000 | 0.85 |
| | 81 sec-Butylbenzene | 105 | 9.523 | 9.523 | (0.986) | 12395 | 1.00000 | 0.79 |
| | 82 p-Isopropyltoluene | 119 | 9.651 | 9.651 | (0.999) | 10009 | 1.00000 | 0.71 |
| | 83 1,3-Dichlorobenzene | 146 | 9.609 | 9.609 | (0.995) | 8523 | 1.00000 | 0.89 |
| | 84 1,4-Dichlorobenzene | 146 | 9.681 | 9.681 | (1.002) | 9866 | 1.00000 | 0.94 |
| | 86 Benzyl Chloride | 91 | 9.823 | 9.823 | (1.280) | 4632 | 1.00000 | 3.12 |
| | 87 n-Butylbenzene | 91 | 10.014 | 10.014 | (1.036) | 8459 | 1.00000 | 2.37(M) |
| | 88 1,2-Dichlorobenzene | 146 | 10.007 | 10.007 | (1.036) | 8626 | 1.00000 | 0.87 |
| | 89 1,2-Dibromo-3-Chloropropane | 155 | 10.689 | 10.689 | (1.106) | 778 | 1.00000 | 0.95(M) |
| | 90 1,2,4-Trichlorobenzene | 180 | 11.371 | 11.371 | (1.177) | 4609 | 1.00000 | 0.74 |
| | 91 Hexachlorobutadiene | 225 | 11.480 | 11.480 | (1.188) | 1928 | 1.00000 | 0.65 |
| | 92 Naphthalene | 128 | 11.574 | 11.574 | (1.198) | 11288 | 1.00000 | 0.79(M) |
| | 93 1,2,3-Trichlorobenzene | 180 | 11.754 | 11.754 | (1.216) | 4801 | 1.00000 | 0.80 |
| M | 94 1,2-Dichloroethylene (total) | 96 | | | | 8290 | 2.00000 | |
| M | 95 Xylenes (total) | 106 | | | | 21134 | 3.00000 | |
| | 141 Cyclohexane | 56 | 4.125 | 4.125 | (0.987) | 4003 | 1.00000 | 2.12(H) |
| | 138 Freon TF | 101 | 1.906 | 1.906 | (0.456) | 3356 | 1.00000 | 1.01 |
| | 147 Methylcyclohexane | 55 | 5.377 | 5.377 | (1.083) | 6848 | 1.00000 | 0.81(M) |
| | 146 Methyl Acetate | 43 | 2.236 | 2.236 | (0.535) | 2127 | 1.00000 | 1.04(M) |
| | 148 Tert-Butyl alcohol | 59 | 2.438 | 2.438 | (0.584) | 6051 | 20.0000 | 19.40(a) |

## QC Flag Legend

T - Target compound detected outside RT window.
a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.
H - Operator selected an alternate compound hit.




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Client ID: VSTD001
Sample Info: VSTD001;VSTD001;1;3;
Purge Volume: 5.0
Column phase: DB624

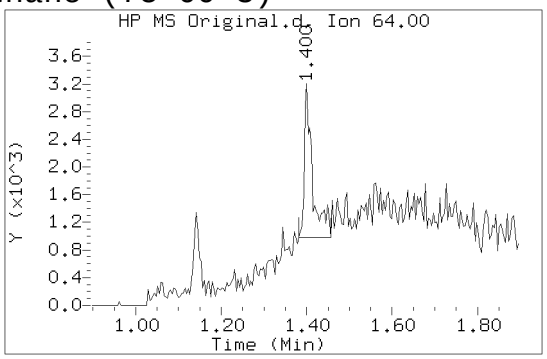
Instrument: voa6,i
Operator: PC
Column diameter: 0.18

Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121604.D
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InstruID : voa6.i
LabSampID : VSTD001

## Chloroethane (75-00-3)

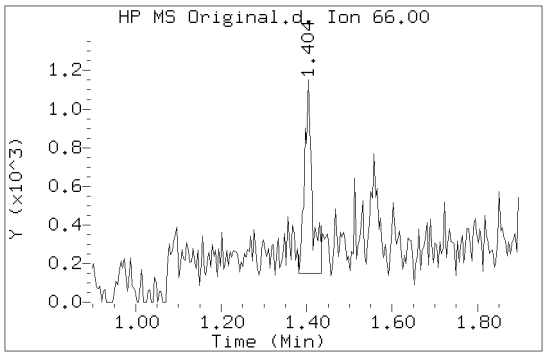
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AREA
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HEIGHT
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pham




### BEFORE

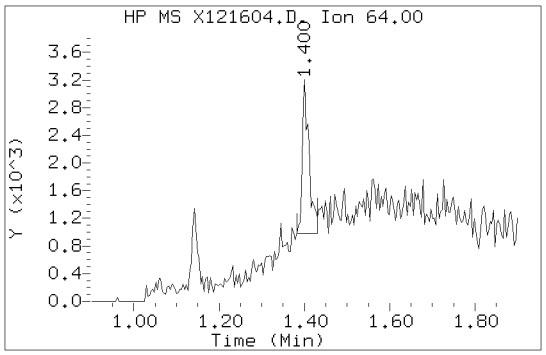
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27-Dec-2022
16:03
linh
pham




Reason Code:

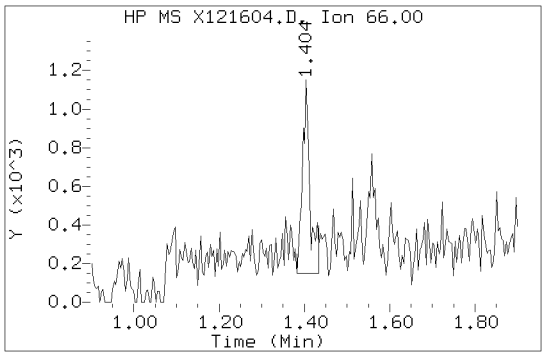
### AFTER

MASS
64
AREA
2516
HEIGHT
2221
27-Dec-2022
16:07
linh
pham




### AFTER

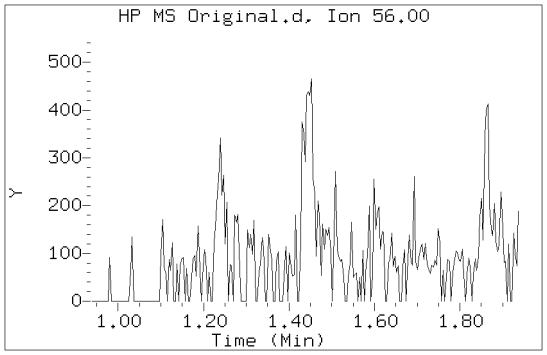
MASS
66
AREA
1262
HEIGHT
1002
27-Dec-2022
16:07
linh
pham




## Acrolein (107-02-8 )

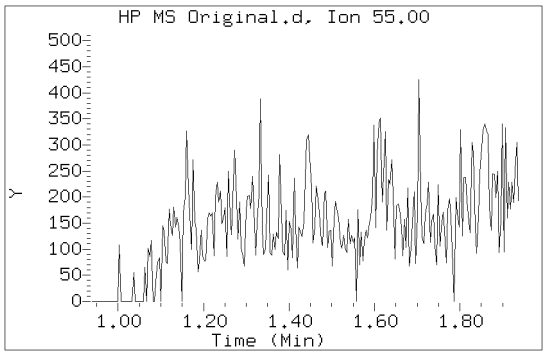
### BEFORE

MASS
56
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham




### BEFORE

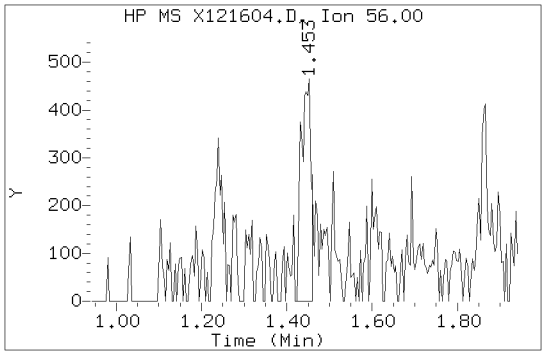
MASS
55
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham




Reason Code:

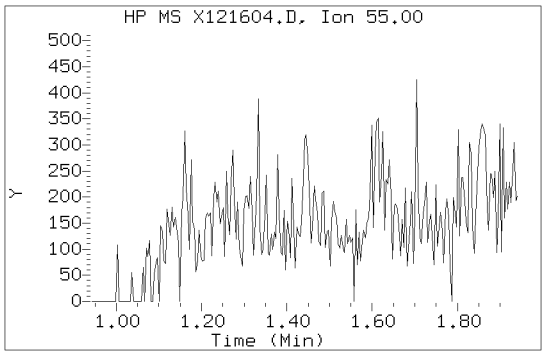
### AFTER

MASS
56
AREA
761
HEIGHT
465
27-Dec-2022
16:07
linh
pham




### AFTER

MASS
55
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham



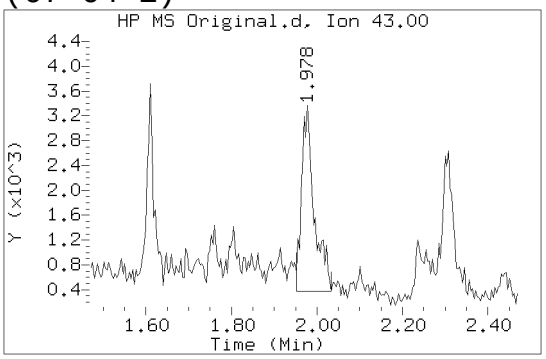
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121604.D
Inj Date : 16-DEC-2022 12:41
InstruID : voa6.i
LabSampID : VSTD001

## Acetone (67-64-1)

Reason Code:

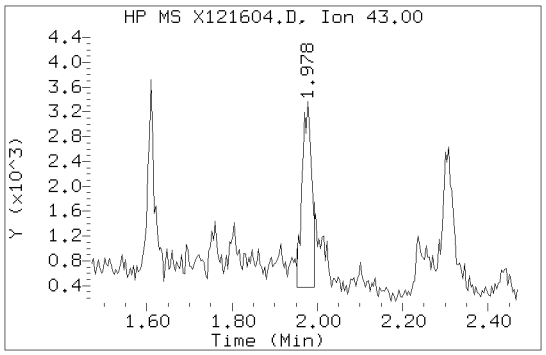
**BEFORE**

MASS
43
AREA
6265
HEIGHT
2993
27-Dec-2022
16:03
linh
pham



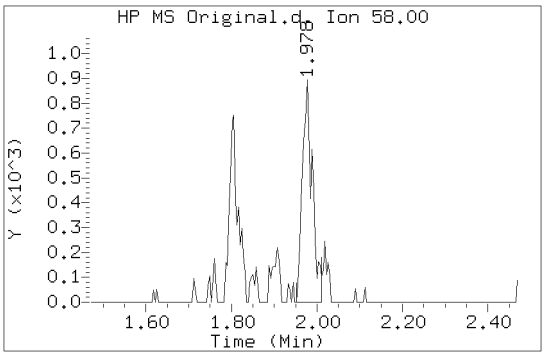

**AFTER**

MASS
43
AREA
4787
HEIGHT
2993
27-Dec-2022
16:07
linh
pham



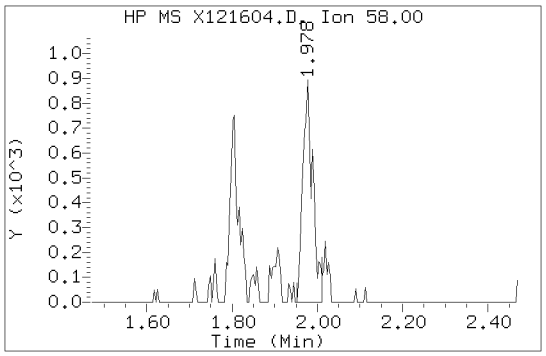

**BEFORE**

MASS
58
AREA
1474
HEIGHT
894
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
58
AREA
1474
HEIGHT
894
27-Dec-2022
16:07
linh
pham

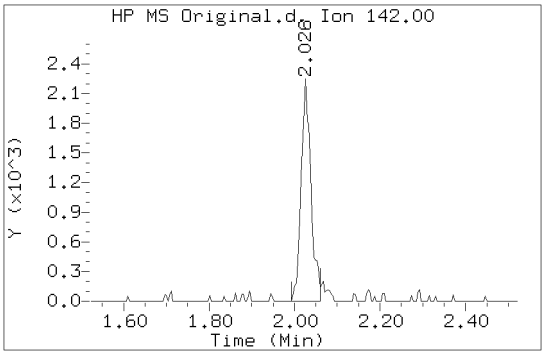



## Iodomethane (74-88-4)

Reason Code:

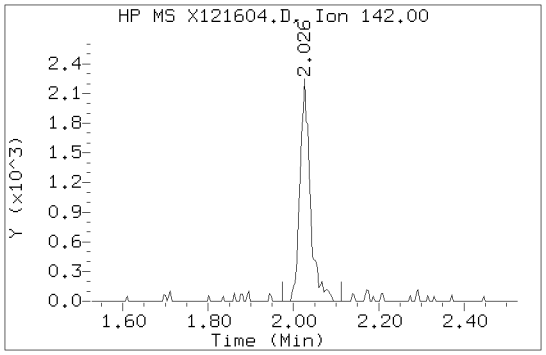
**BEFORE**

MASS
142
AREA
3661
HEIGHT
2248
27-Dec-2022
16:03
linh
pham



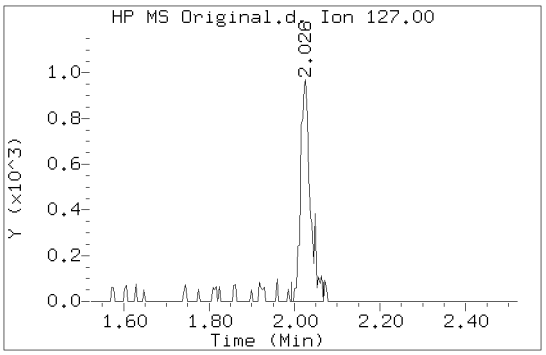

**AFTER**

MASS
142
AREA
3865
HEIGHT
2248
27-Dec-2022
16:07
linh
pham



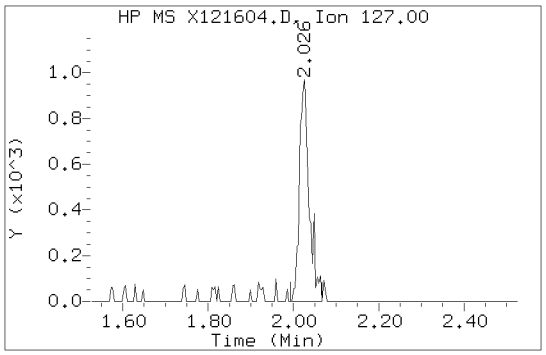

**BEFORE**

MASS
127
AREA
1585
HEIGHT
970
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
127
AREA
1585
HEIGHT
970
27-Dec-2022
16:07
linh
pham



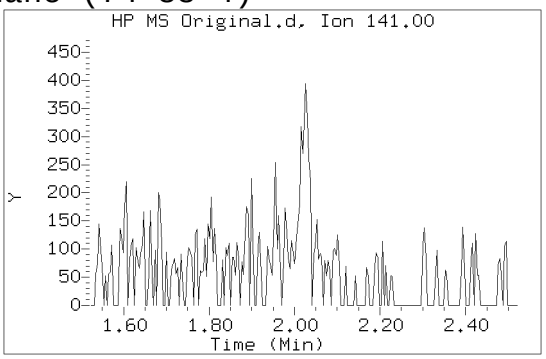
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121604.D
Inj Date : 16-DEC-2022 12:41
InstruID : voa6.i
LabSampID : VSTD001

## Iodomethane (74-88-4)

Reason Code:

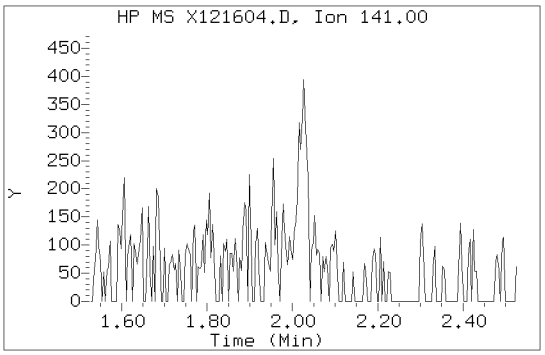
**BEFORE**

MASS
141
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
141
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham

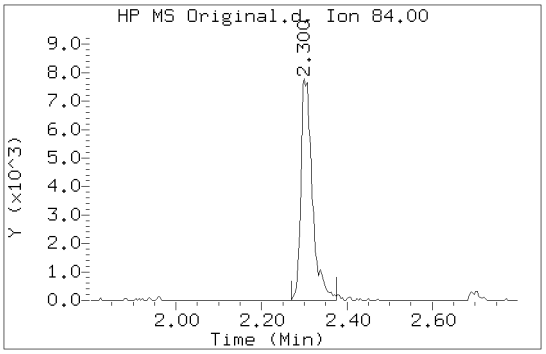



## Methylene Chloride (75-09-2)

Reason Code:

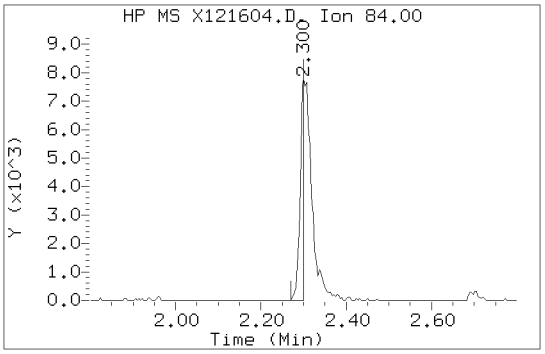
**BEFORE**

MASS
84
AREA
14864
HEIGHT
7788
27-Dec-2022
16:03
linh
pham



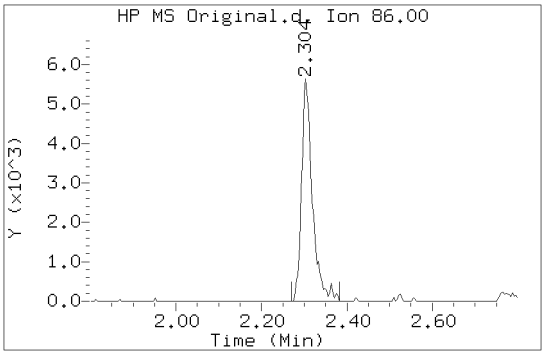

**AFTER**

MASS
84
AREA
5355
HEIGHT
7788
27-Dec-2022
16:07
linh
pham



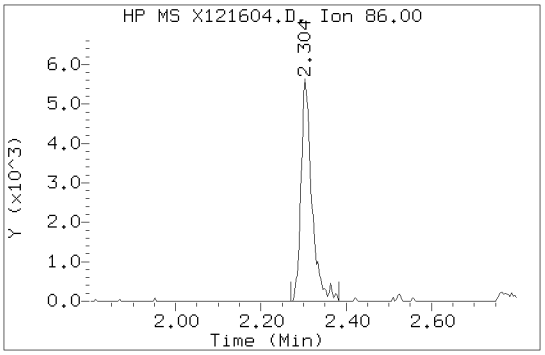

**BEFORE**

MASS
86
AREA
10161
HEIGHT
5637
27-Dec-2022
16:03
linh
pham



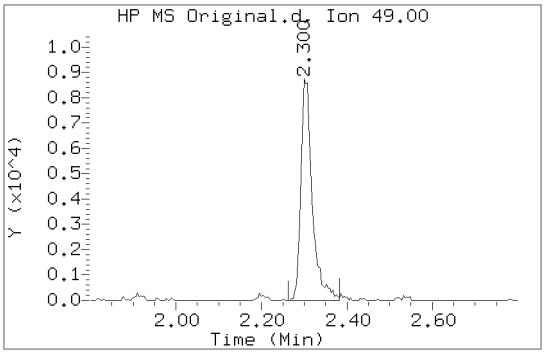

**AFTER**

MASS
86
AREA
10161
HEIGHT
5637
27-Dec-2022
16:07
linh
pham



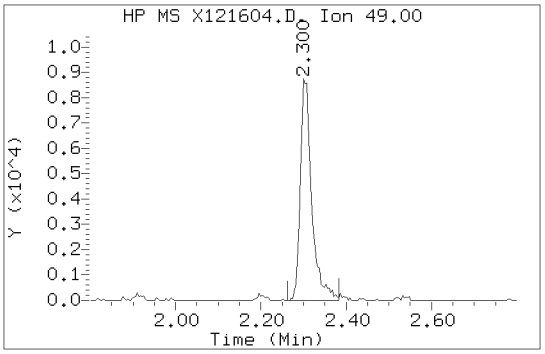

**BEFORE**

MASS
49
AREA
16641
HEIGHT
8752
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
49
AREA
16641
HEIGHT
8752
27-Dec-2022
16:07
linh
pham

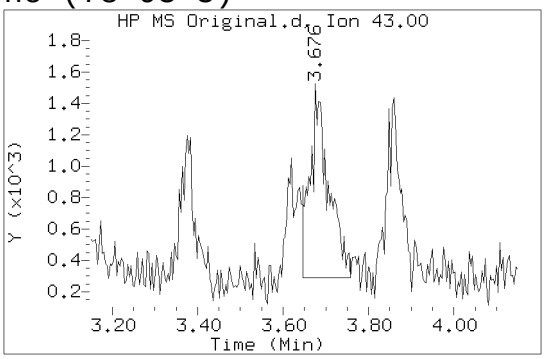


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121604.D
Inj Date : 16-DEC-2022 12:41
InstruID : voa6.i
LabSampID : VSTD001

## 2-Butanone (78-93-3)

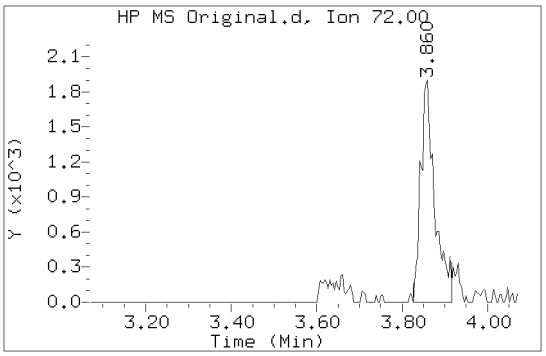
### BEFORE

MASS
43
AREA
3758
HEIGHT
1236
27-Dec-2022
16:03
linh
pham




### BEFORE

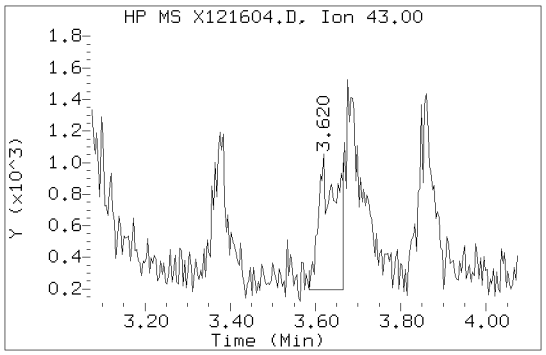
MASS
72
AREA
4320
HEIGHT
1902
27-Dec-2022
16:03
linh
pham




Reason Code:

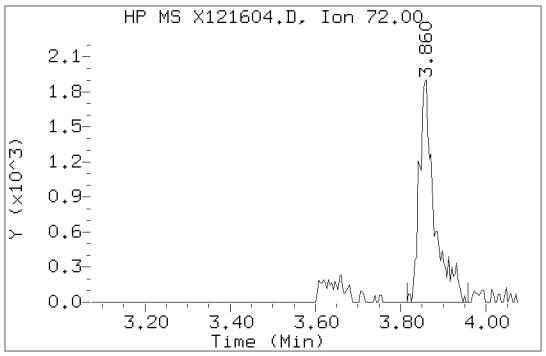
### AFTER

MASS
43
AREA
2498
HEIGHT
859
27-Dec-2022
16:07
linh
pham




### AFTER

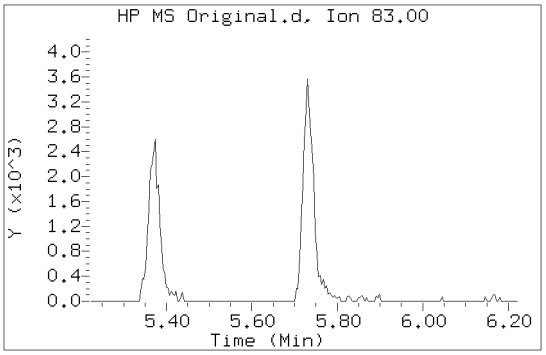
MASS
72
AREA
4690
HEIGHT
1902
27-Dec-2022
16:07
linh
pham




## Bromodichloromethane (75-27-4)

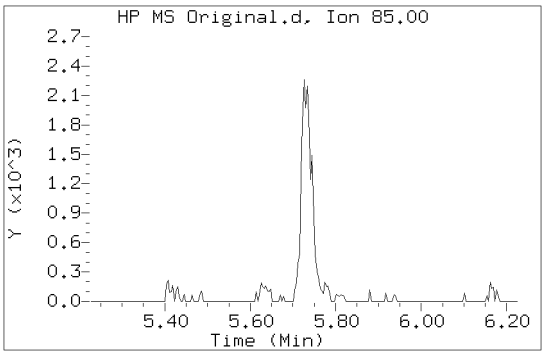
### BEFORE

MASS
83
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham




### BEFORE

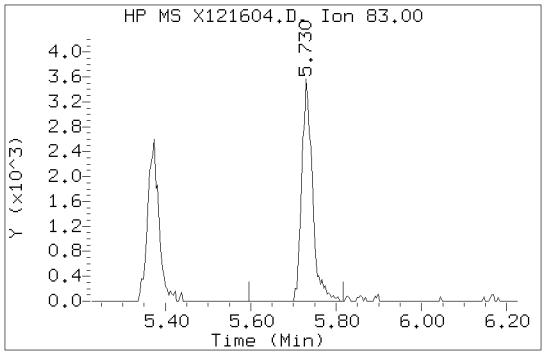
MASS
85
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham




Reason Code:

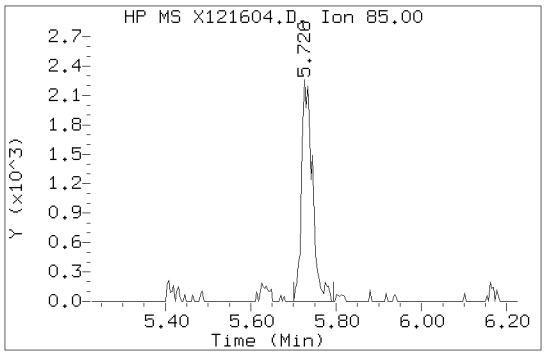
### AFTER

MASS
83
AREA
6296
HEIGHT
3568
27-Dec-2022
16:07
linh
pham




### AFTER

MASS
85
AREA
4084
HEIGHT
2261
27-Dec-2022
16:07
linh
pham



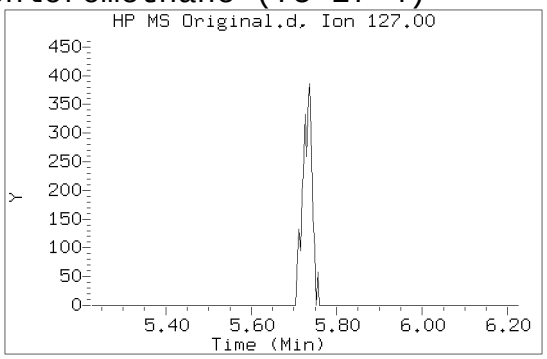
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121604.D
Inj Date : 16-DEC-2022 12:41
InstruID : voa6.i
LabSampID : VSTD001

## Bromodichloromethane (75-27-4)

Reason Code:

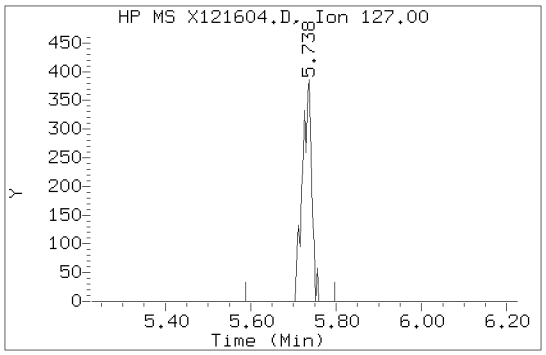
**BEFORE**

MASS
127
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
127
AREA
595
HEIGHT
386
27-Dec-2022
16:07
linh
pham

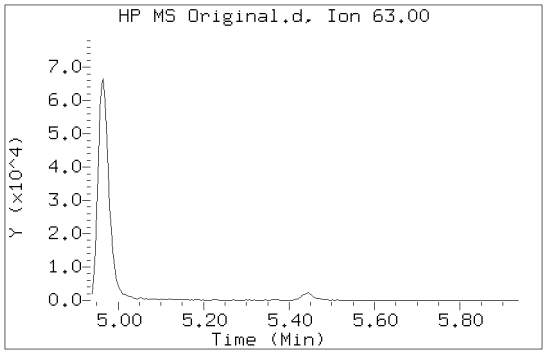



## 1,2-Dichloropropane (78-87-5)

Reason Code:

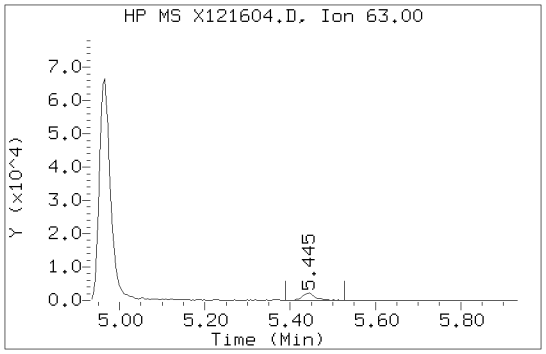
**BEFORE**

MASS
63
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



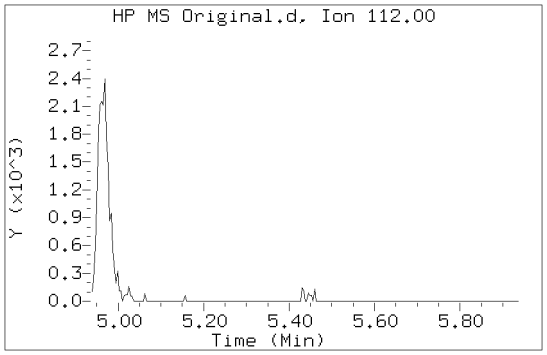

**AFTER**

MASS
63
AREA
4604
HEIGHT
2381
27-Dec-2022
16:07
linh
pham



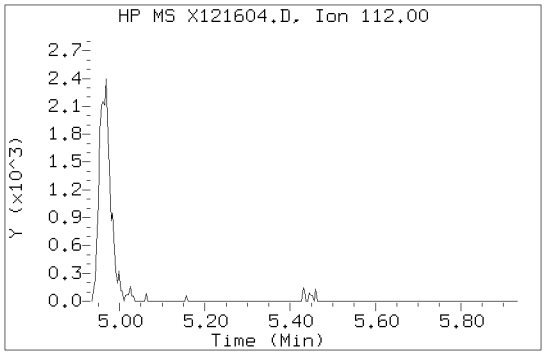

**BEFORE**

MASS
112
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
112
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham

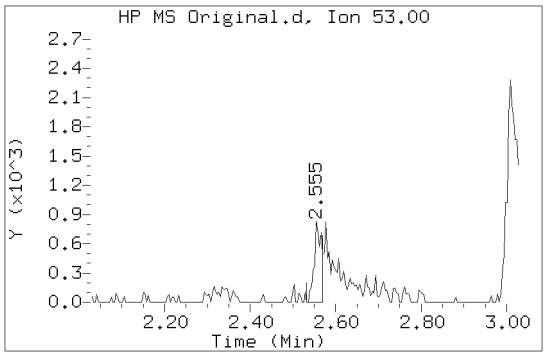



## Acrylonitrile (107-13-1)

Reason Code:

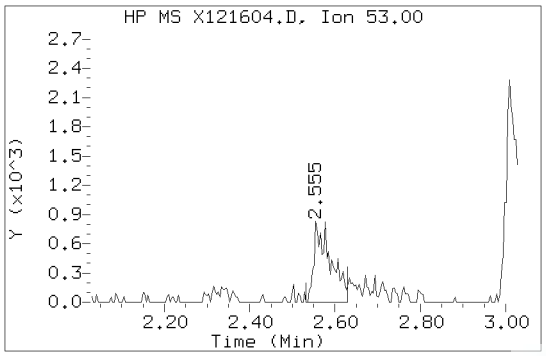
**BEFORE**

MASS
53
AREA
967
HEIGHT
834
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
53
AREA
2258
HEIGHT
834
27-Dec-2022
16:07
linh
pham



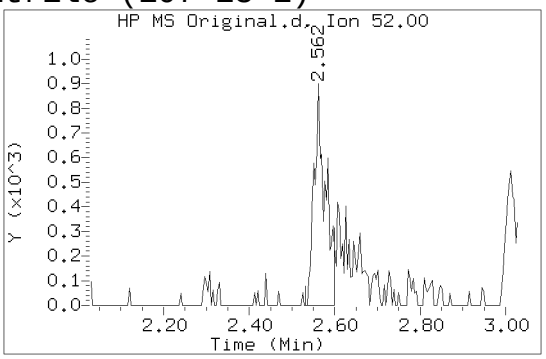
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121604.D
Inj Date : 16-DEC-2022 12:41
InstruID : voa6.i
LabSampID : VSTD001

## Acrylonitrile (107-13-1)

Reason Code:

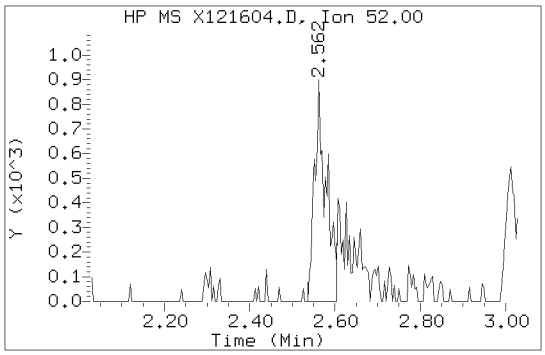
BEFORE

MASS
52
AREA
1657
HEIGHT
900
27-Dec-2022
16:03
linh
pham



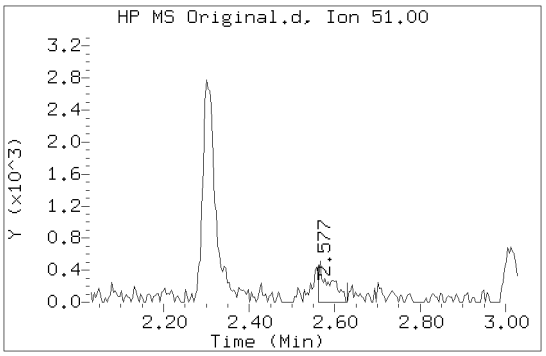

AFTER

MASS
52
AREA
1692
HEIGHT
900
27-Dec-2022
16:07
linh
pham



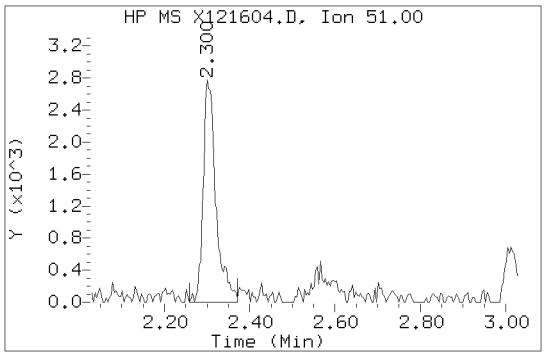

BEFORE

MASS
51
AREA
901
HEIGHT
301
27-Dec-2022
16:03
linh
pham




AFTER

MASS
51
AREA
5757
HEIGHT
2777
27-Dec-2022
16:07
linh
pham

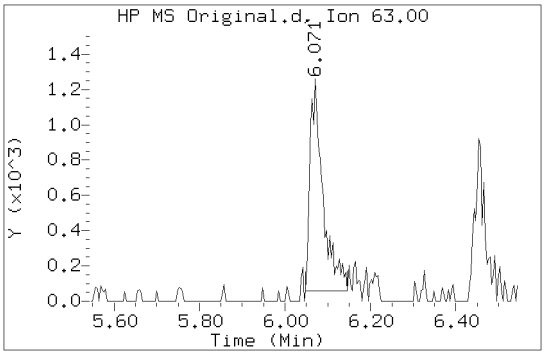



## 2-Chloroethylvinyl ether (110-75-8)

Reason Code:

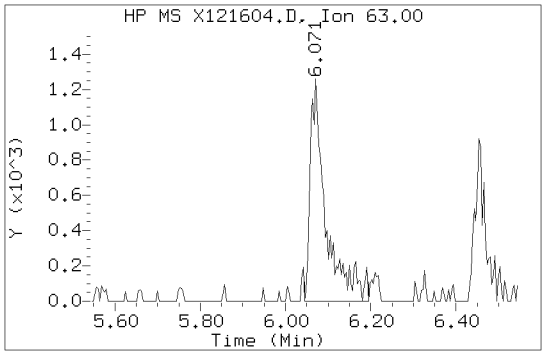
BEFORE

MASS
63
AREA
2513
HEIGHT
1202
27-Dec-2022
16:03
linh
pham



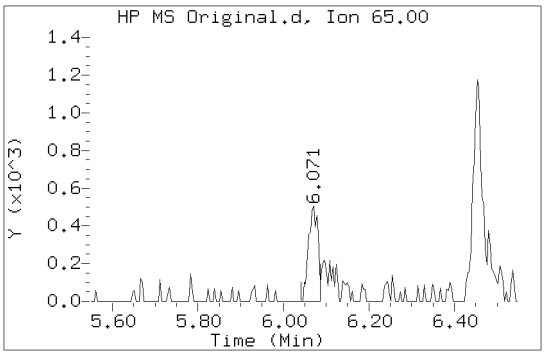

AFTER

MASS
63
AREA
3202
HEIGHT
1260
27-Dec-2022
16:07
linh
pham



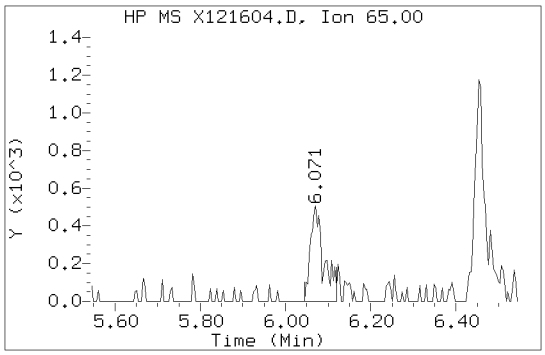

BEFORE

MASS
65
AREA
775
HEIGHT
507
27-Dec-2022
16:03
linh
pham




AFTER

MASS
65
AREA
1093
HEIGHT
507
27-Dec-2022
16:07
linh
pham



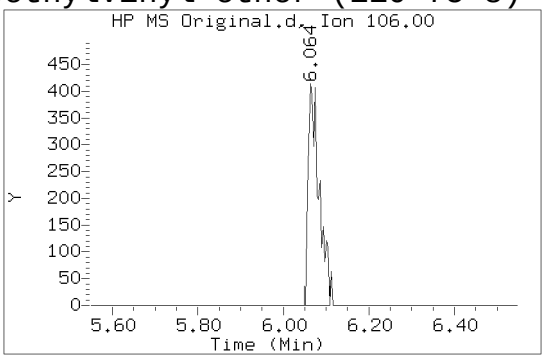
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121604.D
Inj Date : 16-DEC-2022 12:41
InstruID : voa6.i
LabSampID : VSTD001

## 2-Chloroethylvinyl ether (110-75-8)

Reason Code:

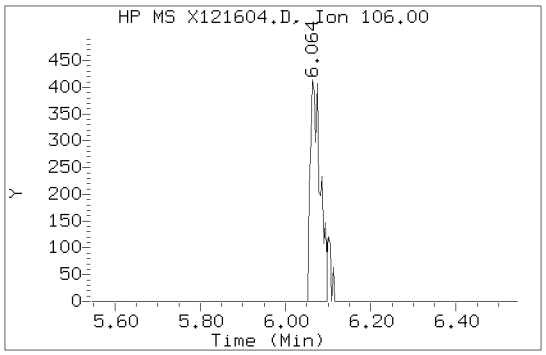
**BEFORE**

MASS
106
AREA
725
HEIGHT
414
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
106
AREA
673
HEIGHT
414
27-Dec-2022
16:07
linh
pham

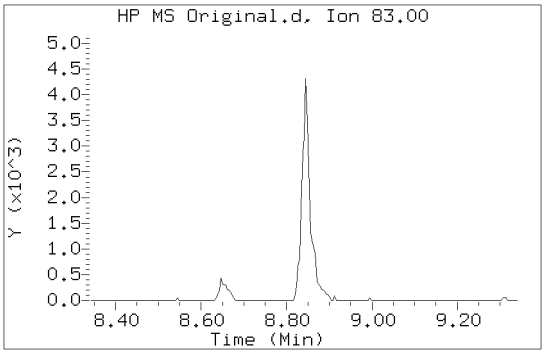



## 1,1,2,2-Tetrachloroethane (79-34-5)

Reason Code:

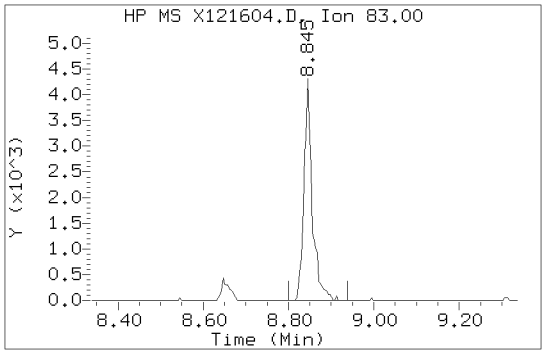
**BEFORE**

MASS
83
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



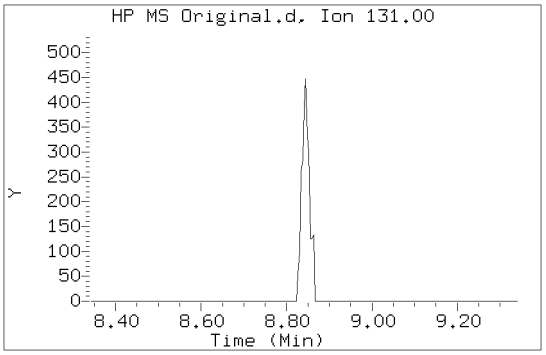

**AFTER**

MASS
83
AREA
5934
HEIGHT
4312
27-Dec-2022
16:07
linh
pham



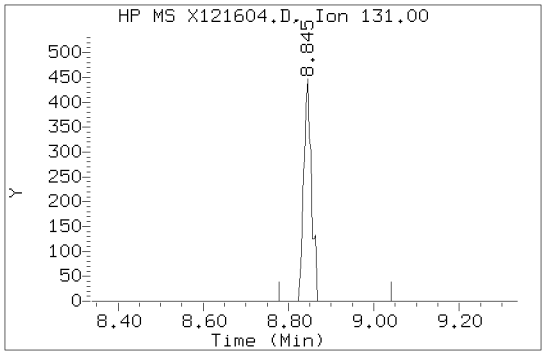

**BEFORE**

MASS
131
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



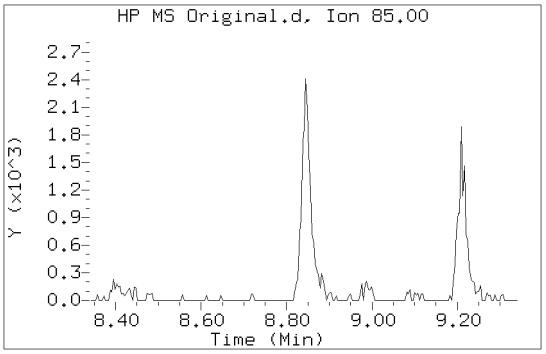

**AFTER**

MASS
131
AREA
574
HEIGHT
447
27-Dec-2022
16:07
linh
pham



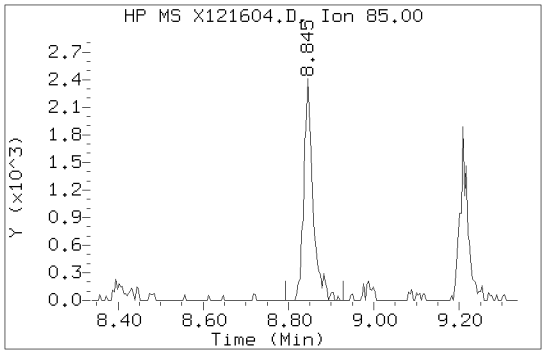

**BEFORE**

MASS
85
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
85
AREA
3682
HEIGHT
2411
27-Dec-2022
16:07
linh
pham

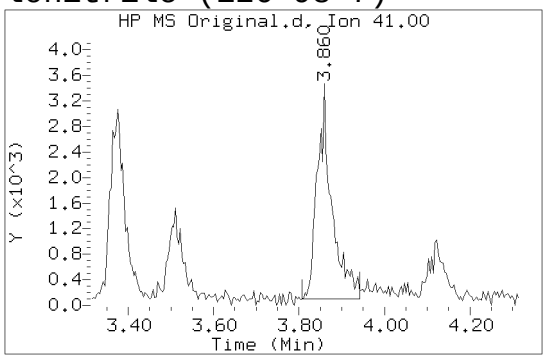


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121604.D
Inj Date : 16-DEC-2022 12:41
InstruID : voa6.i
LabSampID : VSTD001

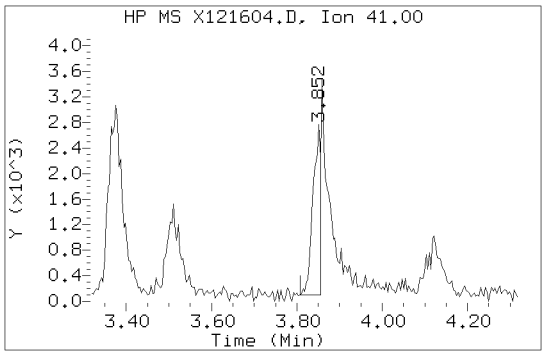
## Methacrylonitrile (126-98-7)

Reason Code:

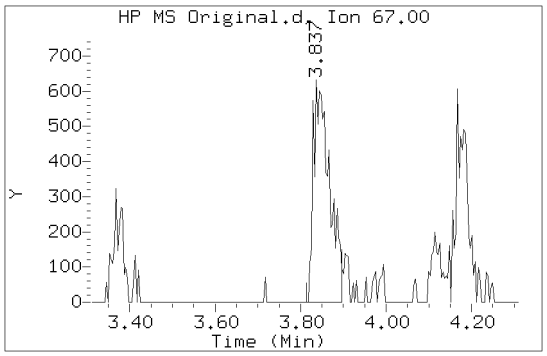
BEFORE
MASS
41
AREA
7966
HEIGHT
3370
27-Dec-2022
16:03
linh
pham



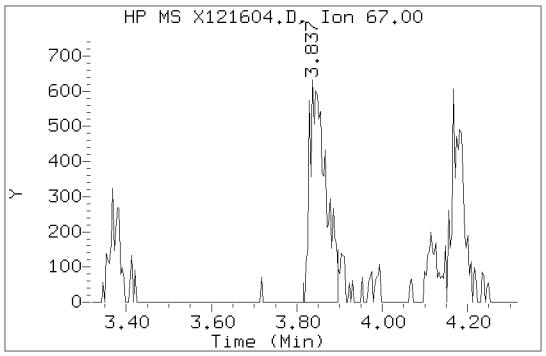

AFTER
MASS
41
AREA
3285
HEIGHT
2668
27-Dec-2022
16:07
linh
pham



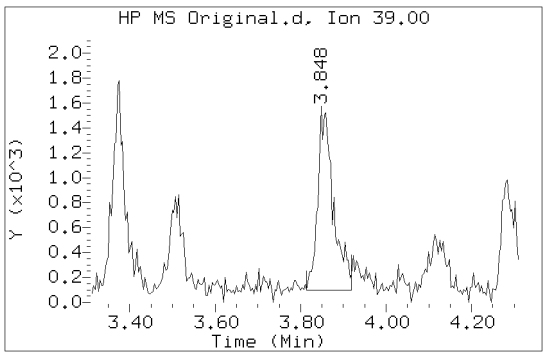

BEFORE
MASS
67
AREA
1649
HEIGHT
632
27-Dec-2022
16:03
linh
pham



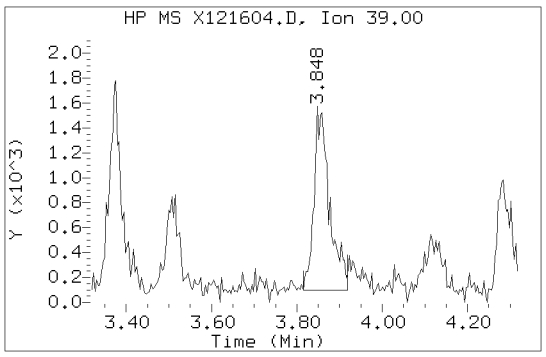

AFTER
MASS
67
AREA
1649
HEIGHT
632
27-Dec-2022
16:07
linh
pham




BEFORE
MASS
39
AREA
3700
HEIGHT
1473
27-Dec-2022
16:03
linh
pham



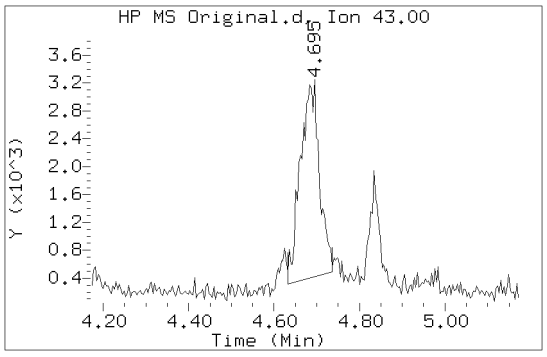

AFTER
MASS
39
AREA
3700
HEIGHT
1473
27-Dec-2022
16:07
linh
pham



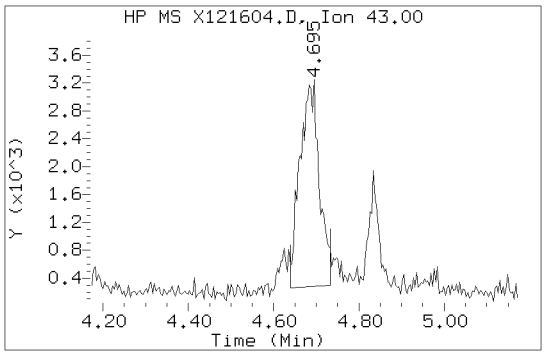

## Isobutyl Alcohol (78-83-1)

Reason Code:

BEFORE
MASS
43
AREA
8847
HEIGHT
2826
27-Dec-2022
16:03
linh
pham




AFTER
MASS
43
AREA
9436
HEIGHT
2966
27-Dec-2022
16:07
linh
pham

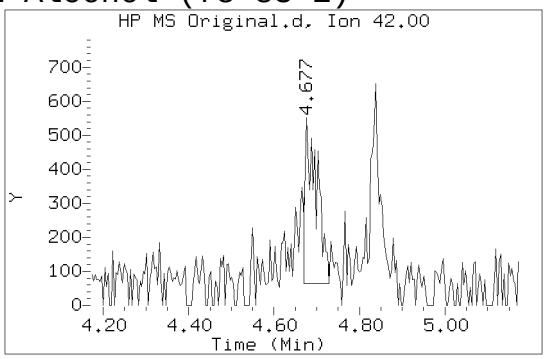


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121604.D
Inj Date : 16-DEC-2022 12:41
InstruID : voa6.i
LabSampID : VSTD001

## Isobutyl Alcohol (78-83-1)

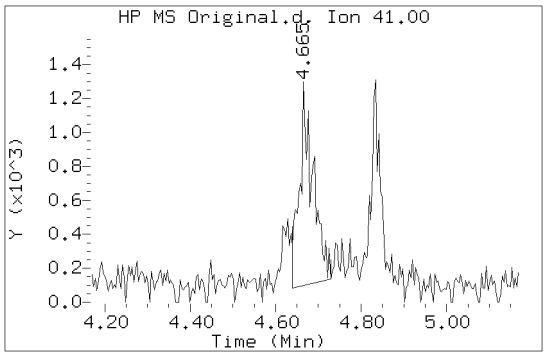
### BEFORE

MASS
42
AREA
953
HEIGHT
488
27-Dec-2022
16:03
linh
pham




### BEFORE

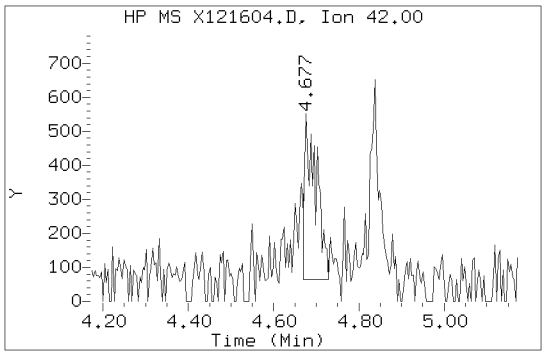
MASS
41
AREA
2650
HEIGHT
1200
27-Dec-2022
16:03
linh
pham




### Reason Code:

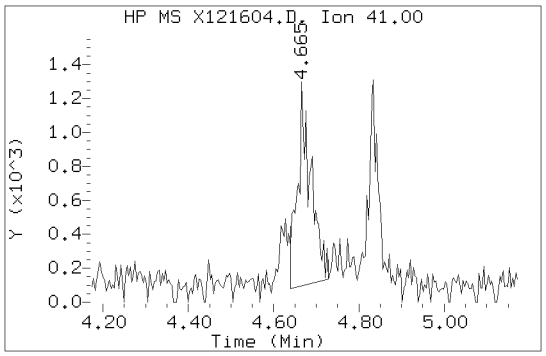
### AFTER

MASS
42
AREA
953
HEIGHT
488
27-Dec-2022
16:07
linh
pham




### AFTER

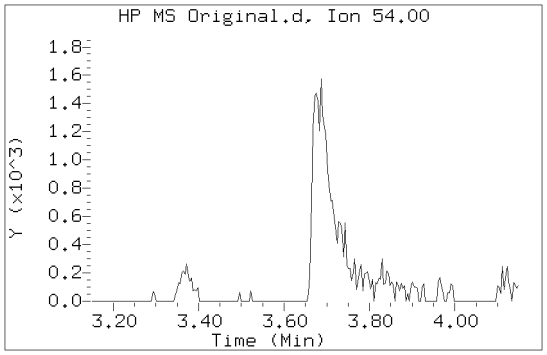
MASS
41
AREA
2656
HEIGHT
1201
27-Dec-2022
16:07
linh
pham




## Propionitrile (107-12-0)

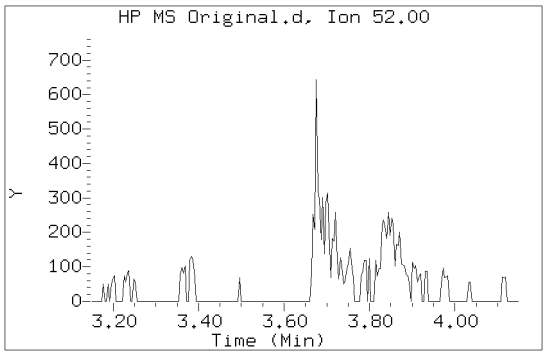
### BEFORE

MASS
54
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham




### BEFORE

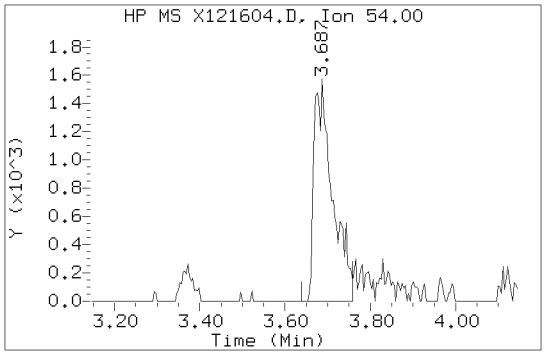
MASS
52
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham




### Reason Code:

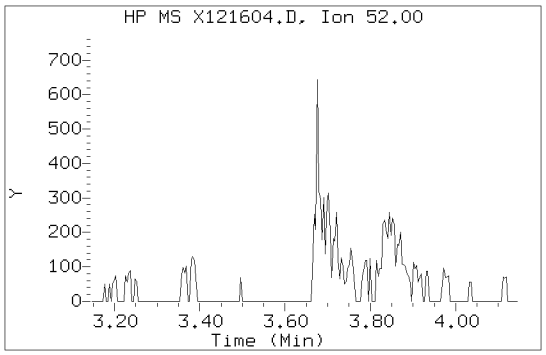
### AFTER

MASS
54
AREA
4742
HEIGHT
1574
27-Dec-2022
16:07
linh
pham




### AFTER

MASS
52
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham



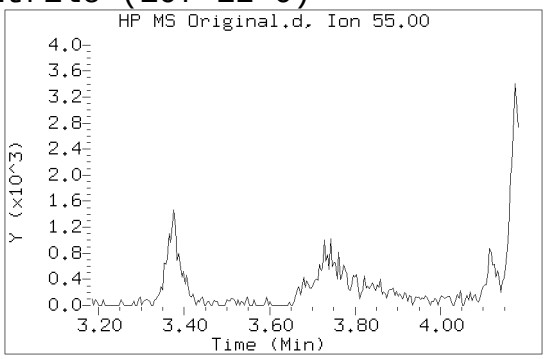
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121604.D
Inj Date : 16-DEC-2022 12:41
InstruID : voa6.i
LabSampID : VSTD001

## Propionitrile (107-12-0)

Reason Code:

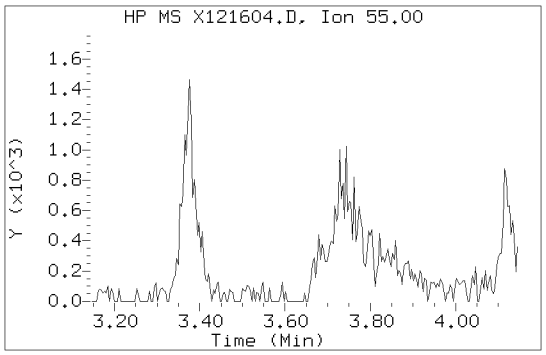
**BEFORE**

MASS
55
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
55
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham

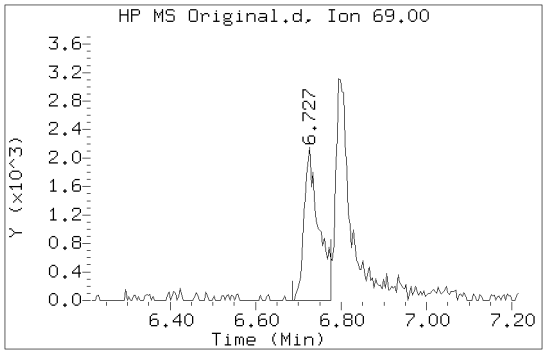



## Ethyl Methacrylate (97-63-2)

Reason Code:

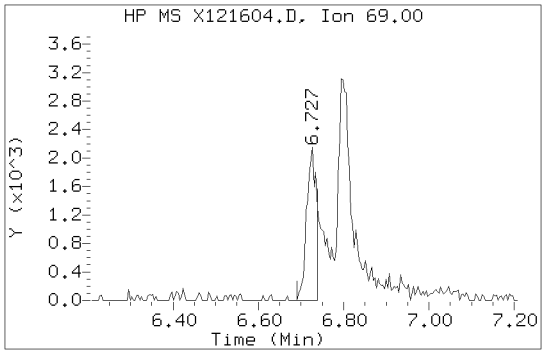
**BEFORE**

MASS
69
AREA
5177
HEIGHT
2156
27-Dec-2022
16:03
linh
pham



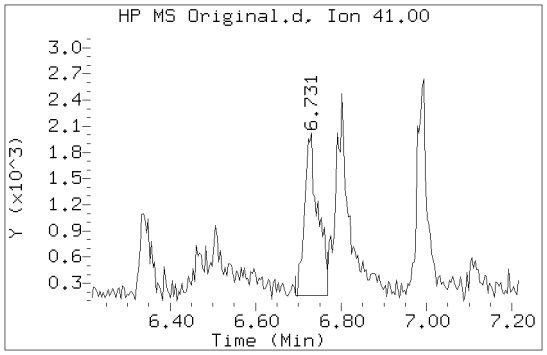

**AFTER**

MASS
69
AREA
3303
HEIGHT
2156
27-Dec-2022
16:07
linh
pham



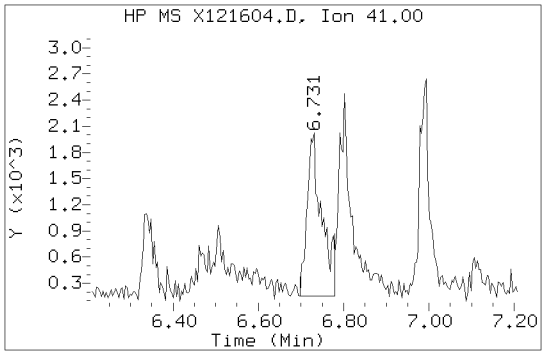

**BEFORE**

MASS
41
AREA
4059
HEIGHT
1867
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
41
AREA
4485
HEIGHT
1872
27-Dec-2022
16:07
linh
pham

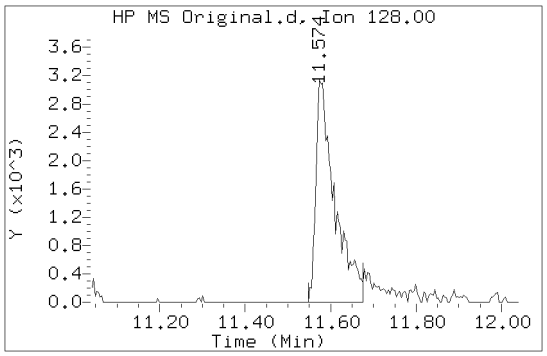



## Naphthalene (91-20-3)

Reason Code:

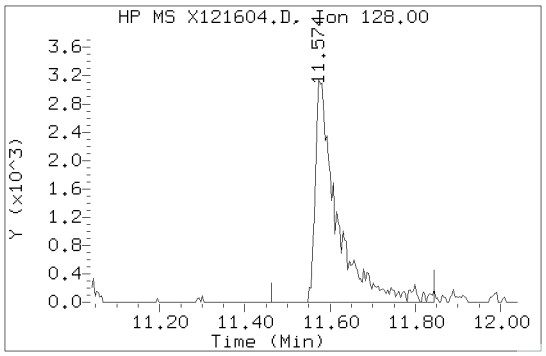
**BEFORE**

MASS
128
AREA
9627
HEIGHT
3139
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
128
AREA
11288
HEIGHT
3139
27-Dec-2022
16:07
linh
pham



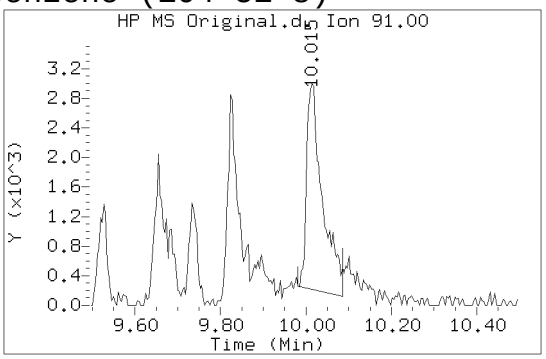
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121604.D
Inj Date : 16-DEC-2022 12:41
InstruID : voa6.i
LabSampID : VSTD001

## n-Butylbenzene (104-51-8)

Reason Code:

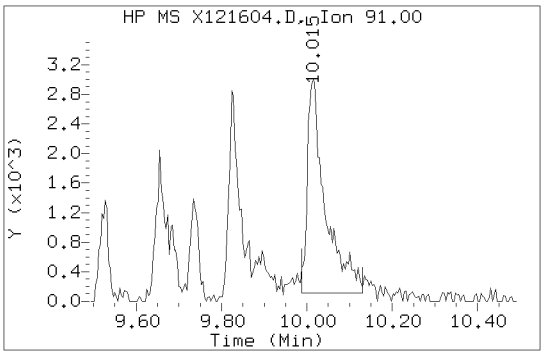
**BEFORE**

MASS
91
AREA
7194
HEIGHT
2783
27-Dec-2022
16:03
linh
pham



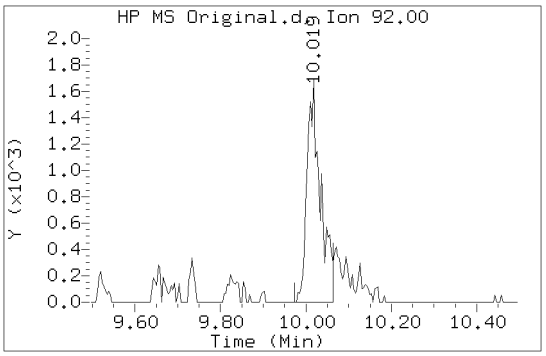

**AFTER**

MASS
91
AREA
8459
HEIGHT
2887
27-Dec-2022
16:07
linh
pham



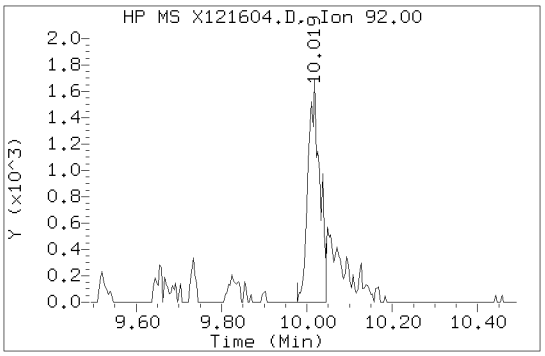

**BEFORE**

MASS
92
AREA
3696
HEIGHT
1686
27-Dec-2022
16:03
linh
pham



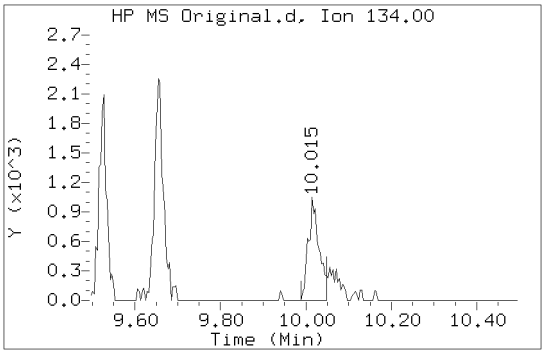

**AFTER**

MASS
92
AREA
3188
HEIGHT
1686
27-Dec-2022
16:07
linh
pham



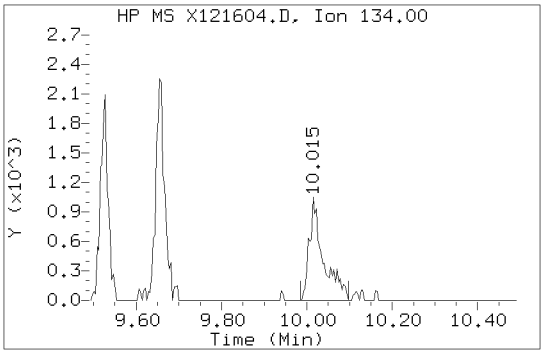

**BEFORE**

MASS
134
AREA
1829
HEIGHT
1051
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
134
AREA
2397
HEIGHT
1051
27-Dec-2022
16:07
linh
pham

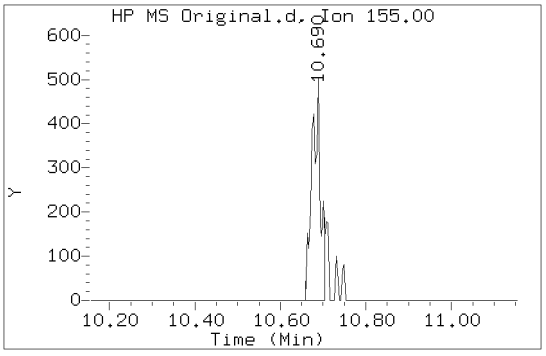



## 1,2-Dibromo-3-Chloropropane (96-12-8)

Reason Code:

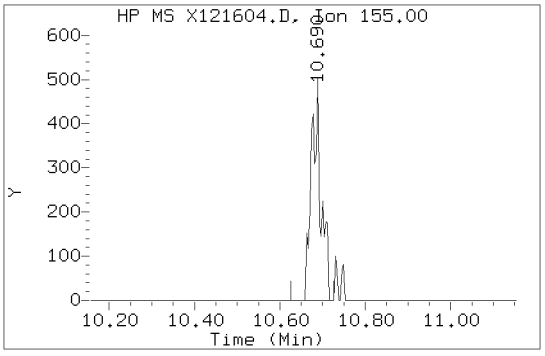
**BEFORE**

MASS
155
AREA
699
HEIGHT
502
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
155
AREA
778
HEIGHT
502
27-Dec-2022
16:07
linh
pham



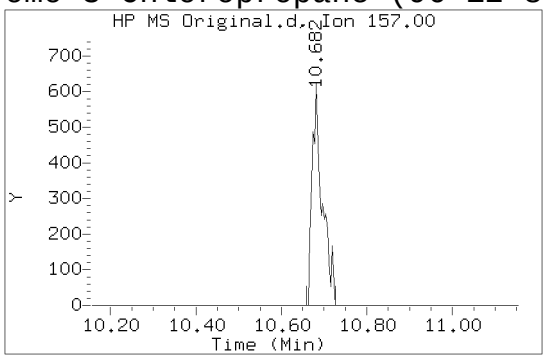
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121604.D
Inj Date : 16-DEC-2022 12:41
InstruID : voa6.i
LabSampID : VSTD001

## 1,2-Dibromo-3-Chloropropane (96-12-8)

Reason Code:

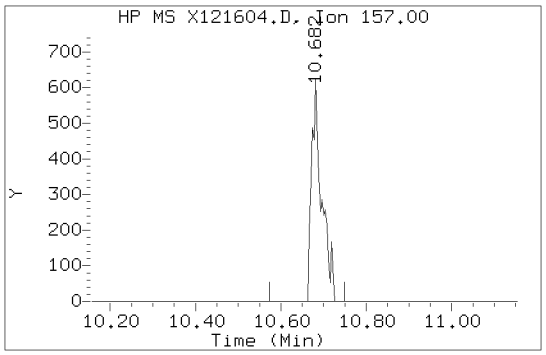
**BEFORE**

MASS
157
AREA
1023
HEIGHT
622
27-Dec-2022
16:03
linh
pham



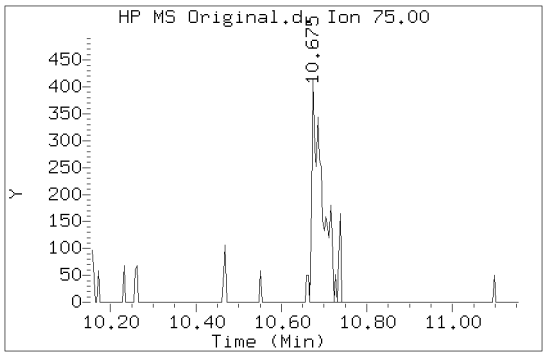

**AFTER**

MASS
157
AREA
1023
HEIGHT
622
27-Dec-2022
16:07
linh
pham



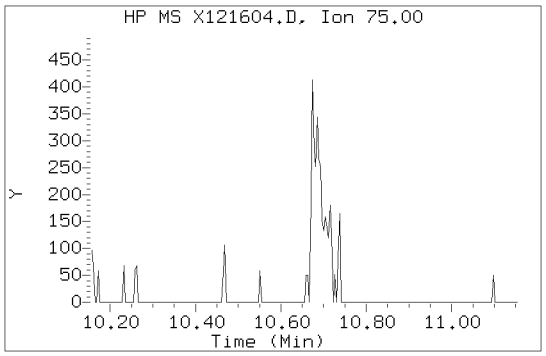

**BEFORE**

MASS
75
AREA
742
HEIGHT
413
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
75
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham

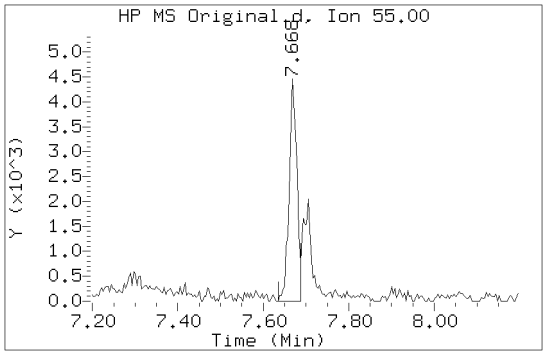



## 1-Chlorohexane (544-10-5)

Reason Code:

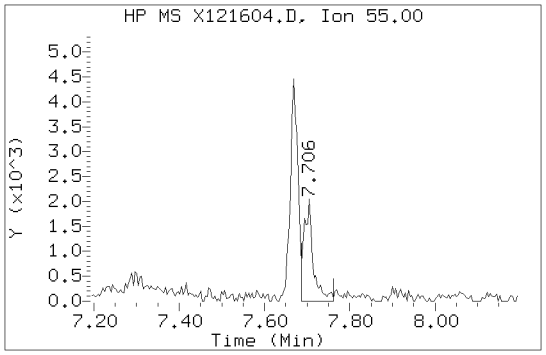
**BEFORE**

MASS
55
AREA
5660
HEIGHT
4460
27-Dec-2022
16:03
linh
pham



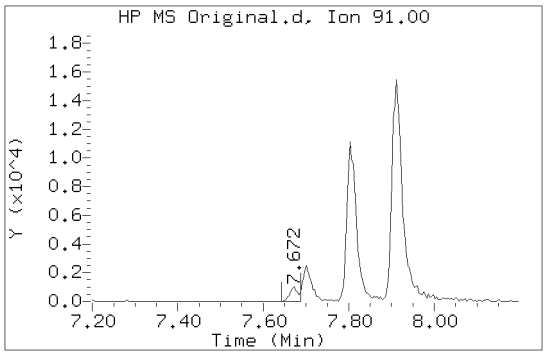

**AFTER**

MASS
55
AREA
3155
HEIGHT
2048
27-Dec-2022
16:07
linh
pham



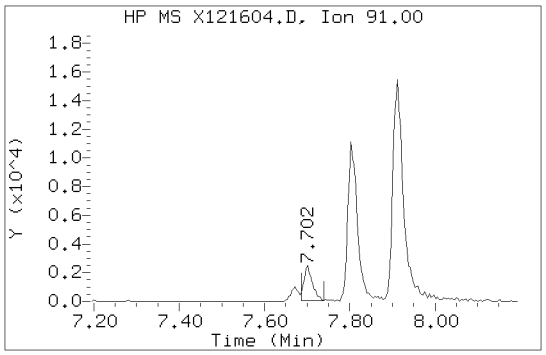

**BEFORE**

MASS
91
AREA
1392
HEIGHT
1029
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
91
AREA
3448
HEIGHT
2478
27-Dec-2022
16:07
linh
pham

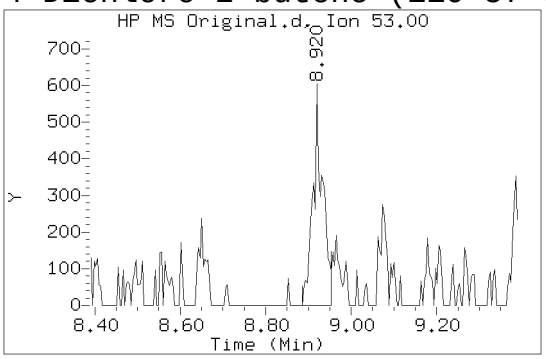


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121604.D
Inj Date : 16-DEC-2022 12:41
InstruID : voa6.i
LabSampID : VSTD001

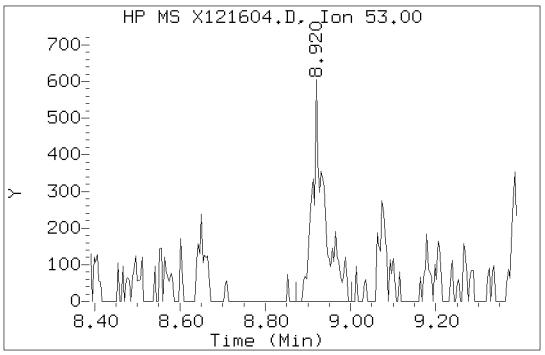
## trans-1,4-Dichloro-2-butene (110-57-6)

Reason Code:

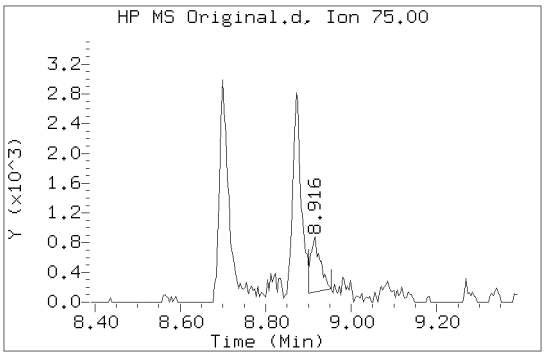
**BEFORE**
MASS
53
AREA
956
HEIGHT
605
27-Dec-2022
16:03
linh
pham



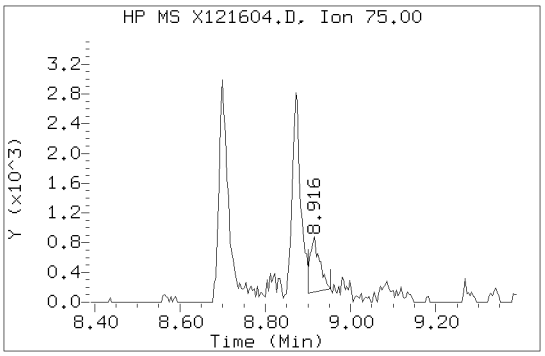

**AFTER**
MASS
53
AREA
1196
HEIGHT
605
27-Dec-2022
16:07
linh
pham




**BEFORE**
MASS
75
AREA
1166
HEIGHT
745
27-Dec-2022
16:03
linh
pham



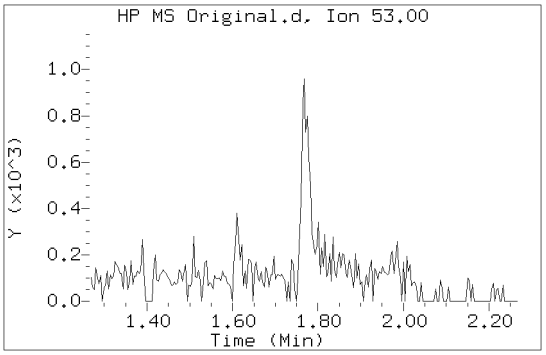

**AFTER**
MASS
75
AREA
1166
HEIGHT
745
27-Dec-2022
16:07
linh
pham



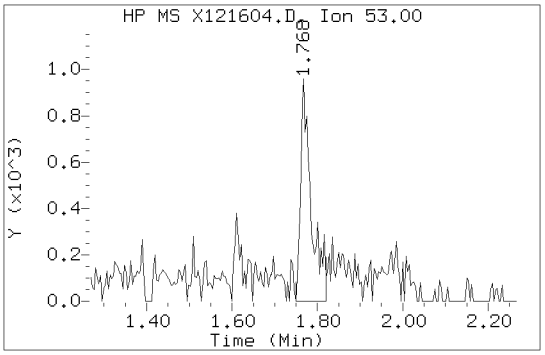

## Chloroprene (126-99-8)

Reason Code:

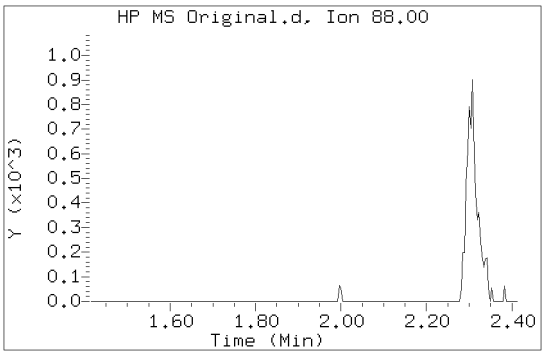
**BEFORE**
MASS
53
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



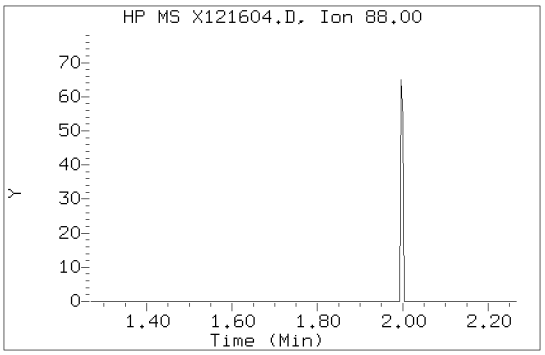

**AFTER**
MASS
53
AREA
1686
HEIGHT
959
27-Dec-2022
16:07
linh
pham




**BEFORE**
MASS
88
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham




**AFTER**
MASS
88
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham

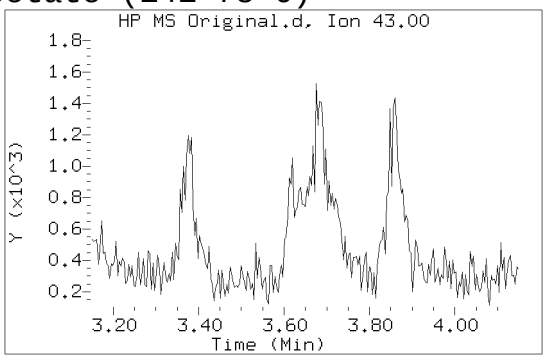


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121604.D
Inj Date : 16-DEC-2022 12:41
InstruID : voa6.i
LabSampID : VSTD001

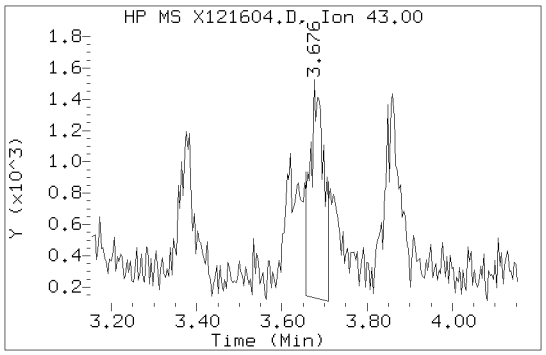
## Ethyl Acetate (141-78-6)

Reason Code:

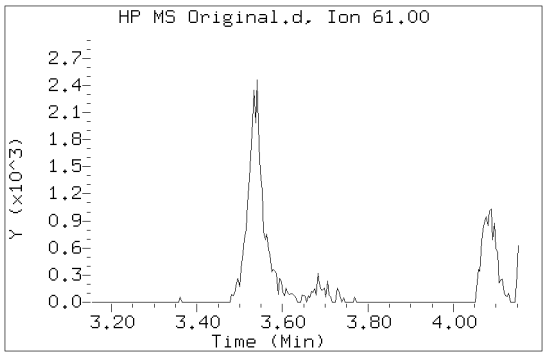
**BEFORE**
MASS
43
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



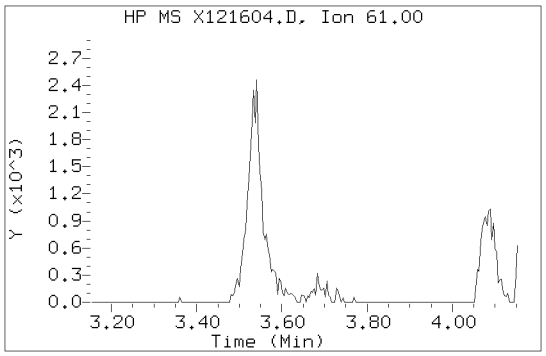

**AFTER**
MASS
43
AREA
3144
HEIGHT
1392
27-Dec-2022
16:07
linh
pham



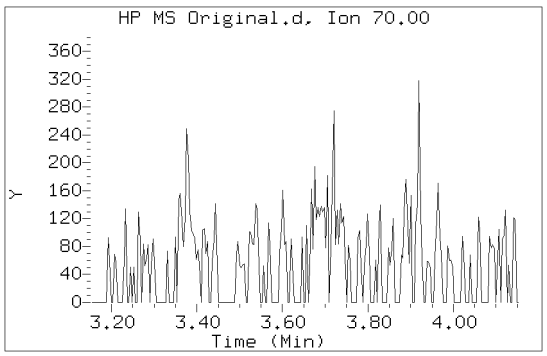

**BEFORE**
MASS
61
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



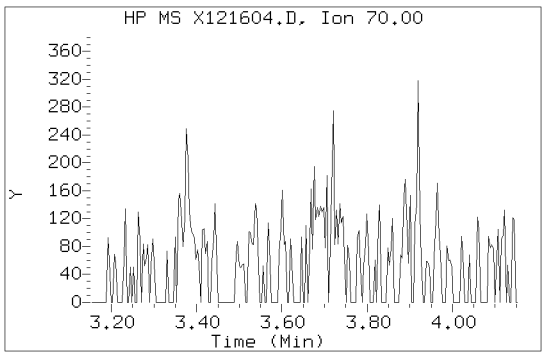

**AFTER**
MASS
61
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham




**BEFORE**
MASS
70
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



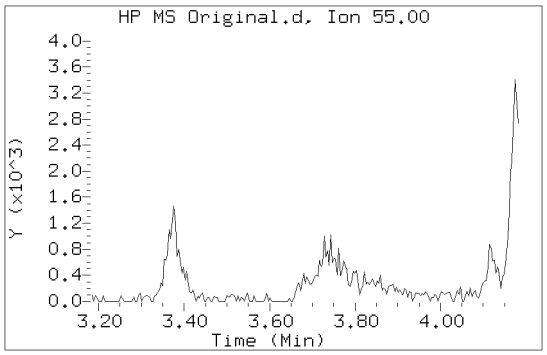

**AFTER**
MASS
70
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham



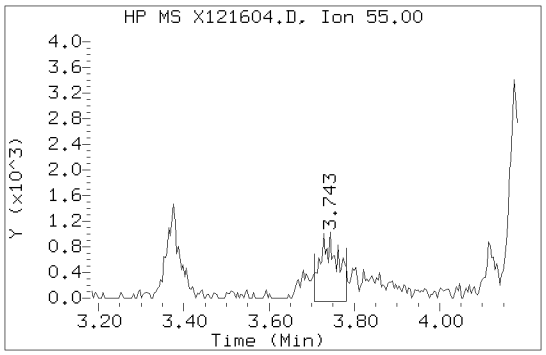

## Methyl Acrylate (96-33-3)

Reason Code:

**BEFORE**
MASS
55
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham




**AFTER**
MASS
55
AREA
3084
HEIGHT
1078
27-Dec-2022
16:07
linh
pham



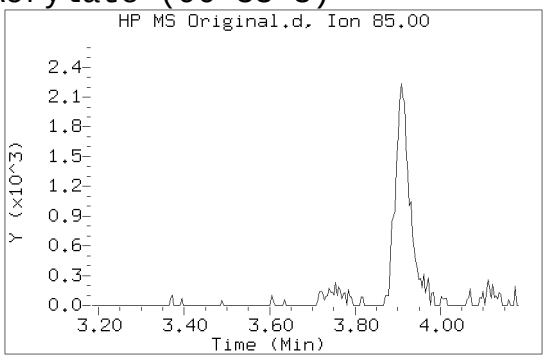
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121604.D
Inj Date : 16-DEC-2022 12:41
InstruID : voa6.i
LabSampID : VSTD001

## Methyl Acrylate (96-33-3)

Reason Code:

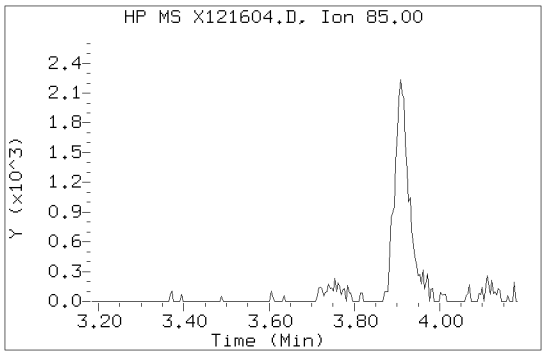
**BEFORE**

MASS
85
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
85
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham

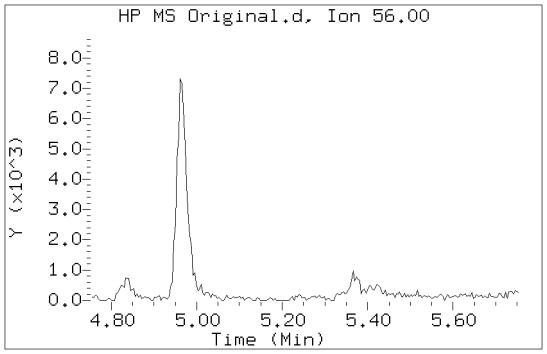



## n-Butanol (71-36-3)

Reason Code:

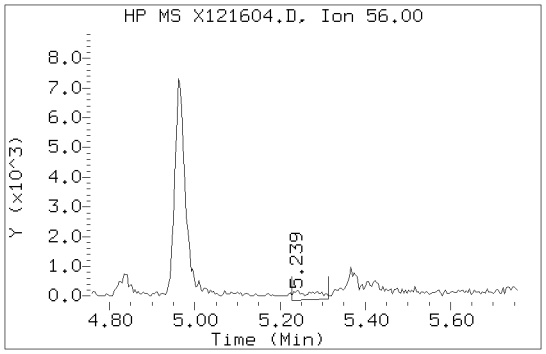
**BEFORE**

MASS
56
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



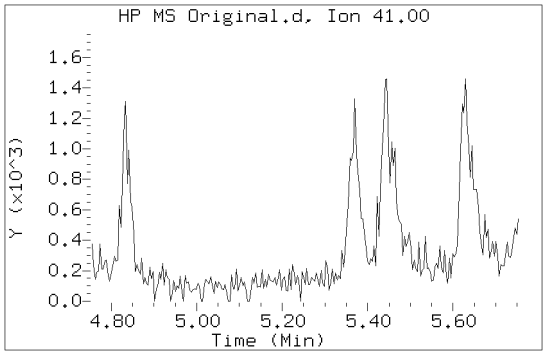

**AFTER**

MASS
56
AREA
1171
HEIGHT
317
27-Dec-2022
16:07
linh
pham



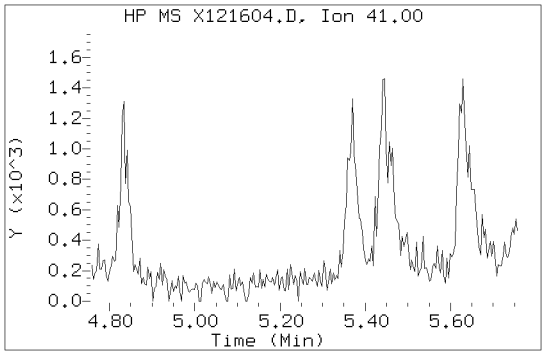

**BEFORE**

MASS
41
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
41
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham

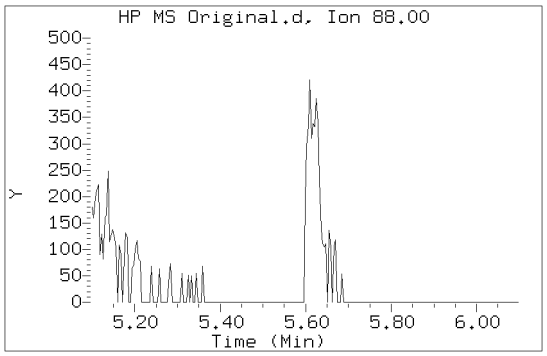



## 1,4-Dioxane ()

Reason Code:

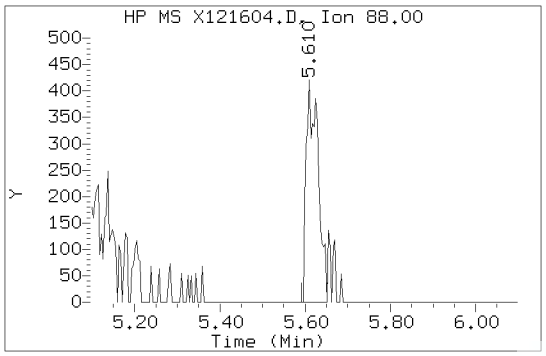
**BEFORE**

MASS
88
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
88
AREA
820
HEIGHT
421
27-Dec-2022
16:07
linh
pham

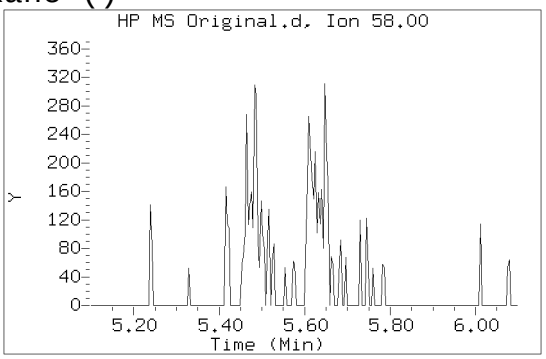


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121604.D
Inj Date : 16-DEC-2022 12:41
InstruID : voa6.i
LabSampID : VSTD001

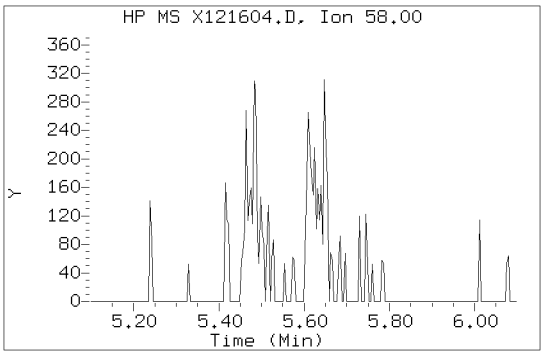
## 1,4-Dioxane ()

Reason Code:

BEFORE
MASS
58
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



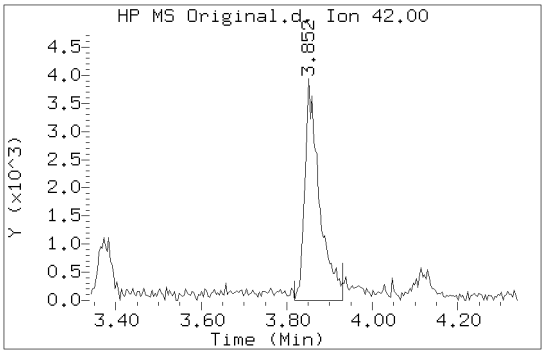

AFTER
MASS
58
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham



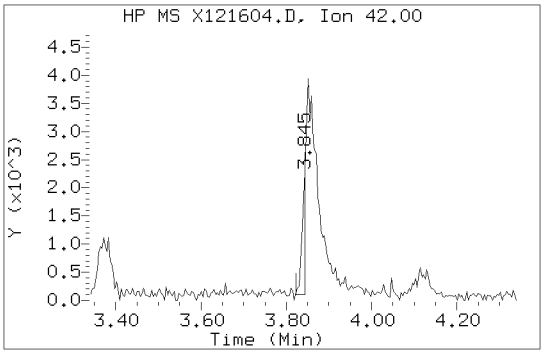

## Tetrahydrofuran (109-99-9)

Reason Code:

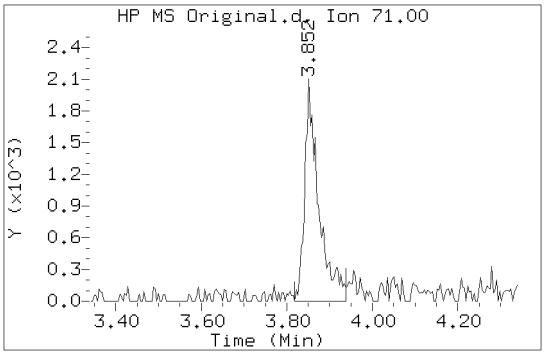
BEFORE
MASS
42
AREA
9396
HEIGHT
3939
27-Dec-2022
16:03
linh
pham



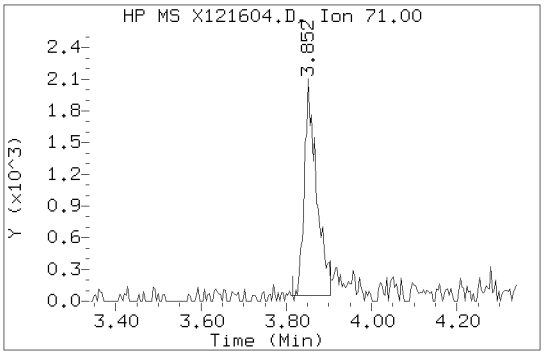

AFTER
MASS
42
AREA
1361
HEIGHT
2190
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linh
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BEFORE
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71
AREA
4781
HEIGHT
2103
27-Dec-2022
16:03
linh
pham



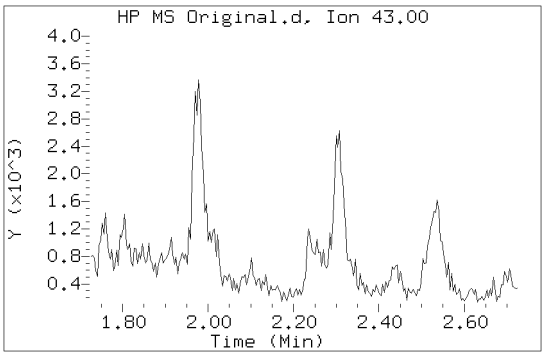

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71
AREA
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HEIGHT
2046
27-Dec-2022
16:07
linh
pham



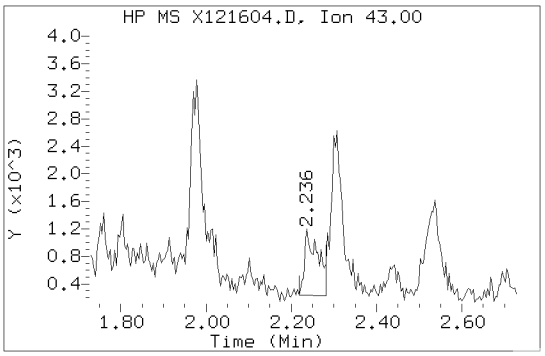

## Methyl Acetate (79-20-9)

Reason Code:

BEFORE
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43
AREA
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HEIGHT
0
27-Dec-2022
16:03
linh
pham




AFTER
MASS
43
AREA
2127
HEIGHT
968
27-Dec-2022
16:07
linh
pham

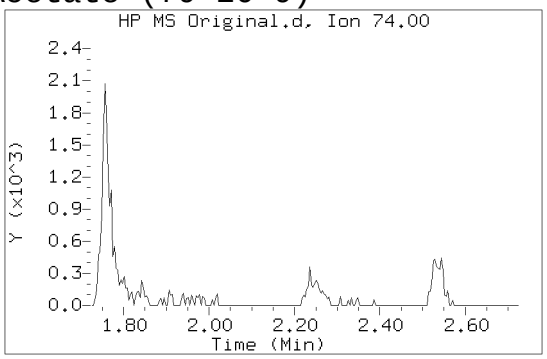


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Inj Date : 16-DEC-2022 12:41
InstruID : voa6.i
LabSampID : VSTD001

## Methyl Acetate (79-20-9)

**BEFORE**

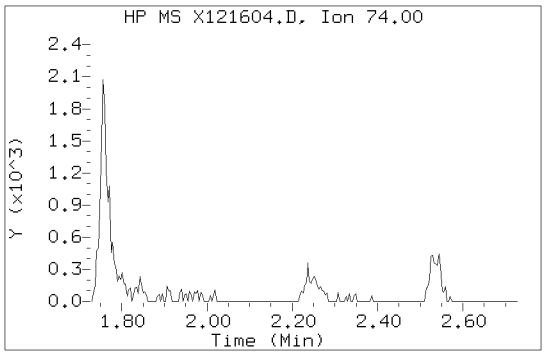
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AREA
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HEIGHT
0
27-Dec-2022
16:03
linh
pham




Reason Code:

**AFTER**

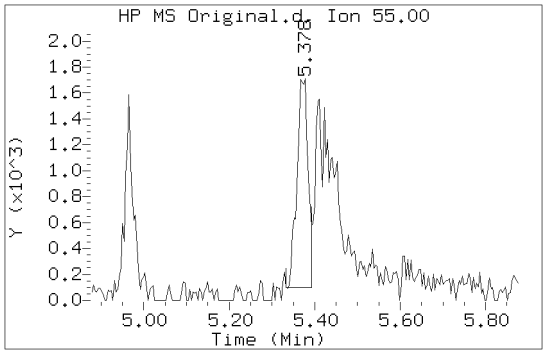
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74
AREA
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HEIGHT
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27-Dec-2022
16:07
linh
pham




## Methylcyclohexane (108-87-2)

**BEFORE**

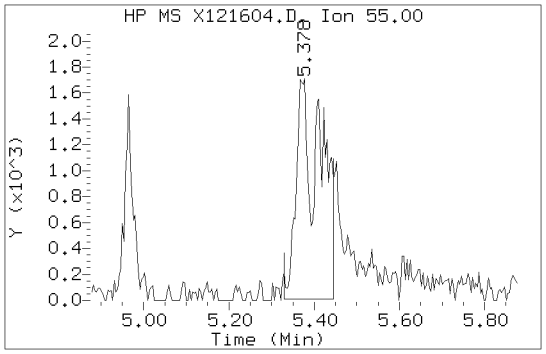
MASS
55
AREA
2998
HEIGHT
1612
27-Dec-2022
16:03
linh
pham




Reason Code:

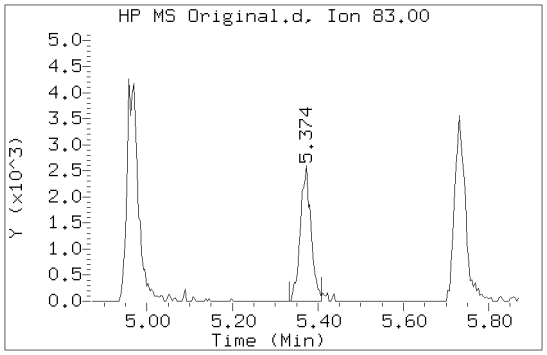
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MASS
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AREA
6848
HEIGHT
1699
27-Dec-2022
16:07
linh
pham



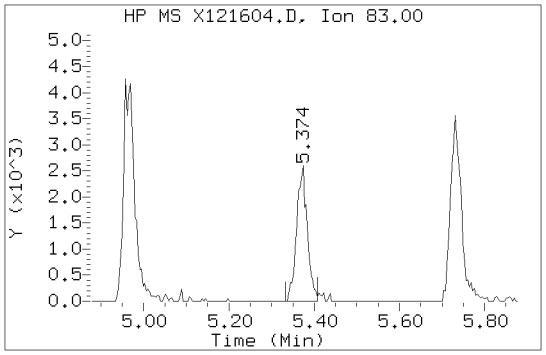

**BEFORE**

MASS
83
AREA
4577
HEIGHT
2601
27-Dec-2022
16:03
linh
pham




**AFTER**

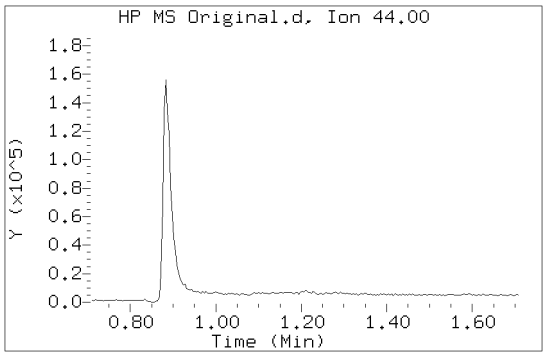
MASS
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AREA
4577
HEIGHT
2601
27-Dec-2022
16:07
linh
pham




## Acetaldehyde (75-07-0)

**BEFORE**

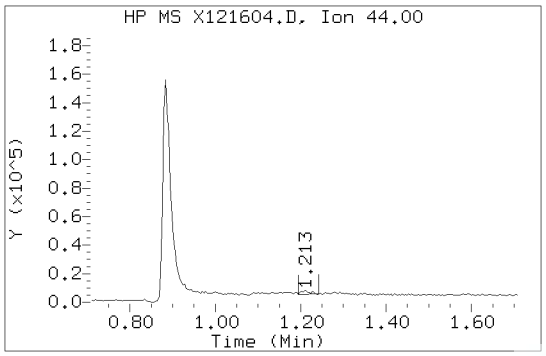
MASS
44
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham




Reason Code:

**AFTER**

MASS
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AREA
3384
HEIGHT
2655
27-Dec-2022
16:07
linh
pham

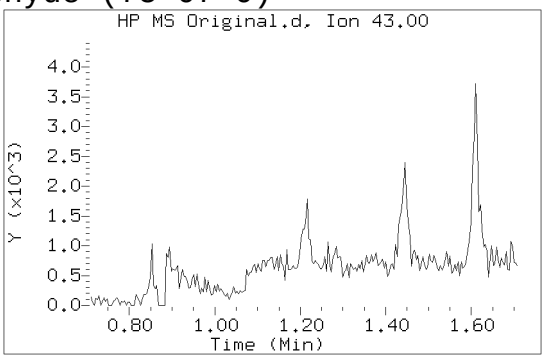


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Inj Date : 16-DEC-2022 12:41
InstruID : voa6.i
LabSampID : VSTD001

## Acetaldehyde (75-07-0)

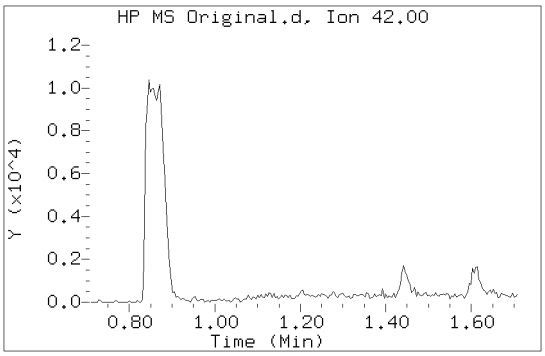
### BEFORE

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43
AREA
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HEIGHT
0
27-Dec-2022
16:03
linh
pham




### BEFORE

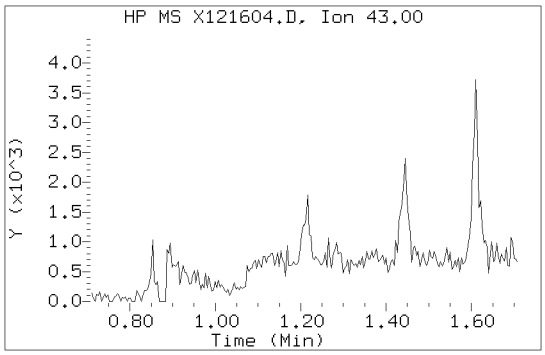
MASS
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AREA
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HEIGHT
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27-Dec-2022
16:03
linh
pham




Reason Code:

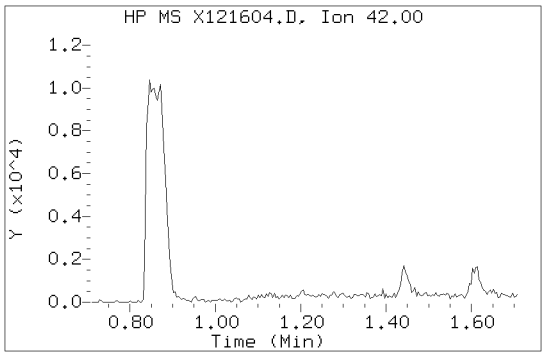
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43
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham




### AFTER

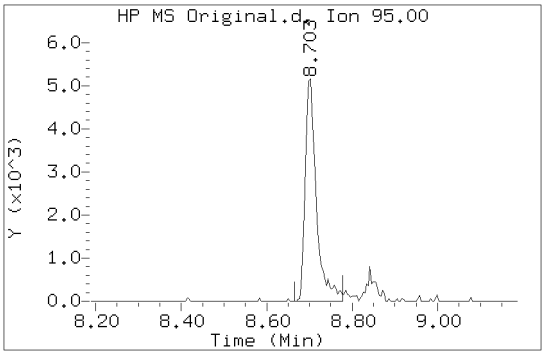
MASS
42
AREA
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HEIGHT
0
27-Dec-2022
16:07
linh
pham




## 4-Bromofluorobenzene (460-00-4)

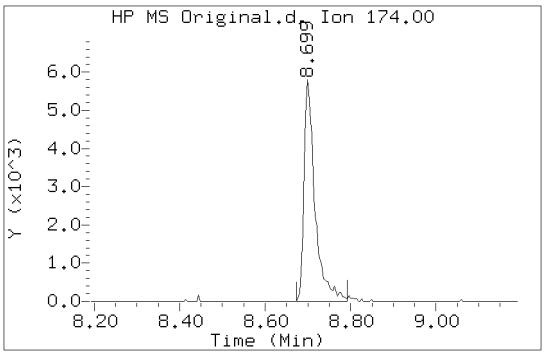
### BEFORE

MASS
95
AREA
9514
HEIGHT
5159
27-Dec-2022
16:03
linh
pham




### BEFORE

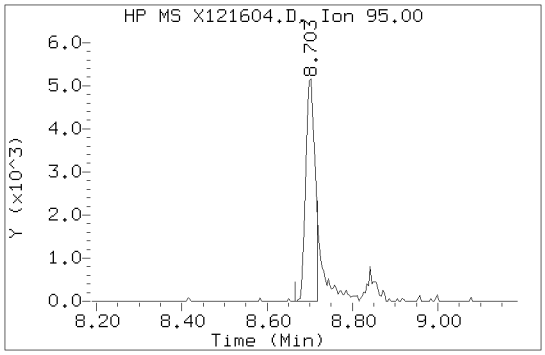
MASS
174
AREA
10505
HEIGHT
5802
27-Dec-2022
16:03
linh
pham




Reason Code:

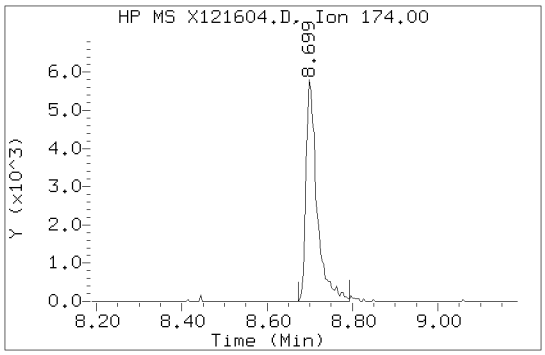
### AFTER

MASS
95
AREA
7790
HEIGHT
5159
27-Dec-2022
16:07
linh
pham




### AFTER

MASS
174
AREA
10505
HEIGHT
5802
27-Dec-2022
16:07
linh
pham



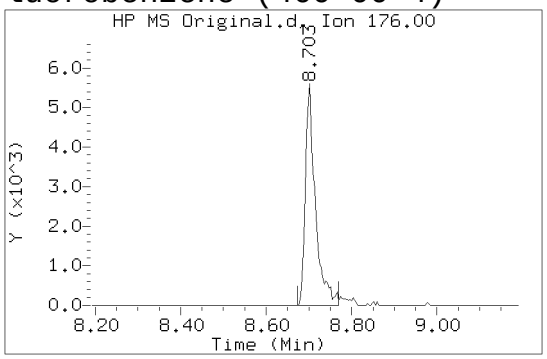
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Inj Date : 16-DEC-2022 12:41
InstruID : voa6.i
LabSampID : VSTD001

4-Bromofluorobenzene (460-00-4)

Reason Code:

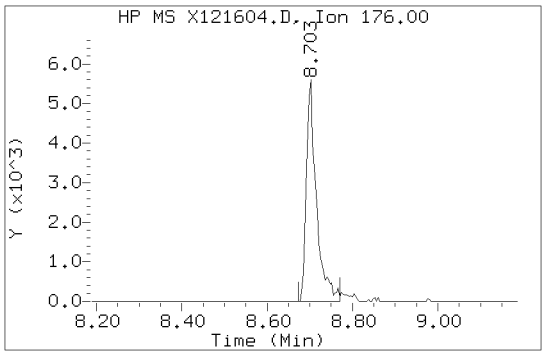
BEFORE

MASS
176
AREA
9226
HEIGHT
5603
27-Dec-2022
16:03
linh
pham




AFTER

MASS
176
AREA
9226
HEIGHT
5603
27-Dec-2022
16:07
linh
pham



Data File: \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121605.D  Page 1
Report Date: 27-Dec-2022 16:07

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121605.D
Lab Smp Id: VSTD002  Client Smp ID: VSTD002
Inj Date  : 16-DEC-2022 13:02
Operator  : PC  Inst ID: voa6.i
Smp Info  : VSTD002;VSTD002;1;4;
Misc Info : V6;WATER;0;1;
Comment   :
Method    : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\8260W.m
Meth Date : 27-Dec-2022 16:07 voa6.i  Quant Type: ISTD
Cal Date  : 16-DEC-2022 12:41  Cal File: X121604.D
Als bottle: 6  Calibration Sample, Level: 4
Dil Factor: 1.00000
Integrator: HP RTE  Compound Sublist: 08260V6.sub
Target Version:  4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

| Name | Value | Description |
|---|---|---|
| DF | 1.000 | Dilution Factor |
| Uf | 5.000 | ng unit correction factor |
| Vo | 5.000 | sample purged |
| Cpnd Variable | | Local Compound Variable |

| Compounds | QUANT SIG MASS | RT | EXP RT | REL RT | RESPONSE | AMOUNTS CAL-AMT ( ug/l) | ON-COL ( ug/l) |
|---|---|---|---|---|---|---|---|
| * 1 Pentafluorobenzene | 168 | 4.178 | 4.178 | (1.000) | 456374 | 50.0000 | |
| 135 1,4-Dioxane | 88 | 5.610 | 5.610 | (1.343) | 1409 | 40.0000 | 33.77(M) |
| 140 1,3-Butadiene | 54 | 1.160 | 1.160 | (0.278) | 5733 | 2.00000 | 1.83 |
| 25 Methacrylonitrile | 41 | 3.859 | 3.859 | (0.924) | 6388 | 2.00000 | 1.97(M) |
| 12 Isobutyl Alcohol | 43 | 4.684 | 4.684 | (1.121) | 20629 | 40.0000 | 40.18(M) |
| 13 Acetonitrile | 39 | 2.198 | 2.198 | (0.526) | 7764 | 20.0000 | 18.69 |
| 14 Allyl Chloride | 41 | 2.206 | 2.206 | (0.528) | 14911 | 2.00000 | 1.88 |
| 4 Propionitrile | 54 | 3.675 | 3.675 | (0.880) | 8651 | 20.0000 | 18.57 |
| 136 n-Hexane | 57 | 2.768 | 2.768 | (0.663) | 5898 | 2.00000 | 1.79 |
| 72 trans-1,4-Dichloro-2-butene | 53 | 8.920 | 8.920 | (1.163) | 2690 | 2.00000 | 1.92(M) |
| 194 Acetaldehyde | 44 | 1.212 | 1.212 | (0.290) | 5661 | 8.00000 | (M) |
| 23 Chloroprene | 53 | 1.771 | 1.771 | (0.424) | 3126 | 2.00000 | 2.01(M) |
| 145 alpha-Methylstyrene | 118 | 9.268 | 9.268 | (0.959) | 14447 | 2.00000 | 1.84 |
| 200 Dimethyl Disulfide | 94 | 6.202 | 6.202 | (0.808) | 15964 | 2.00000 | 1.82 |
| 139 Diethyl ether | 59 | 1.756 | 1.756 | (0.420) | 6354 | 2.00000 | 2.08 |
| 130 Ethyl Acetate | 43 | 3.675 | 3.675 | (0.880) | 7422 | 2.00000 | 2.08(M) |
| 40 Methyl Methacrylate | 41 | 5.617 | 5.617 | (1.345) | 6185 | 2.00000 | 1.98 |
| 49 Ethyl Methacrylate | 69 | 6.715 | 6.715 | (1.353) | 6546 | 2.00000 | 2.03 |
| 132 n-Butanol | 56 | 5.343 | 5.343 | (1.279) | 2004 | 40.0000 | 74.77(TM) |
| 142 Tetrahydrofuran | 42 | 3.848 | 3.848 | (0.921) | 2867 | 4.00000 | 2.04(M) |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 150 | Allyl alcohol | 57 | 2.768 | 2.768 (0.663) | 5898 | 40.0000 | 33.27 |
| 166 | 1,2,3-Trimethylbenzene | 105 | 9.733 | 9.733 (1.007) | 35687 | 2.00000 | 2.10 |

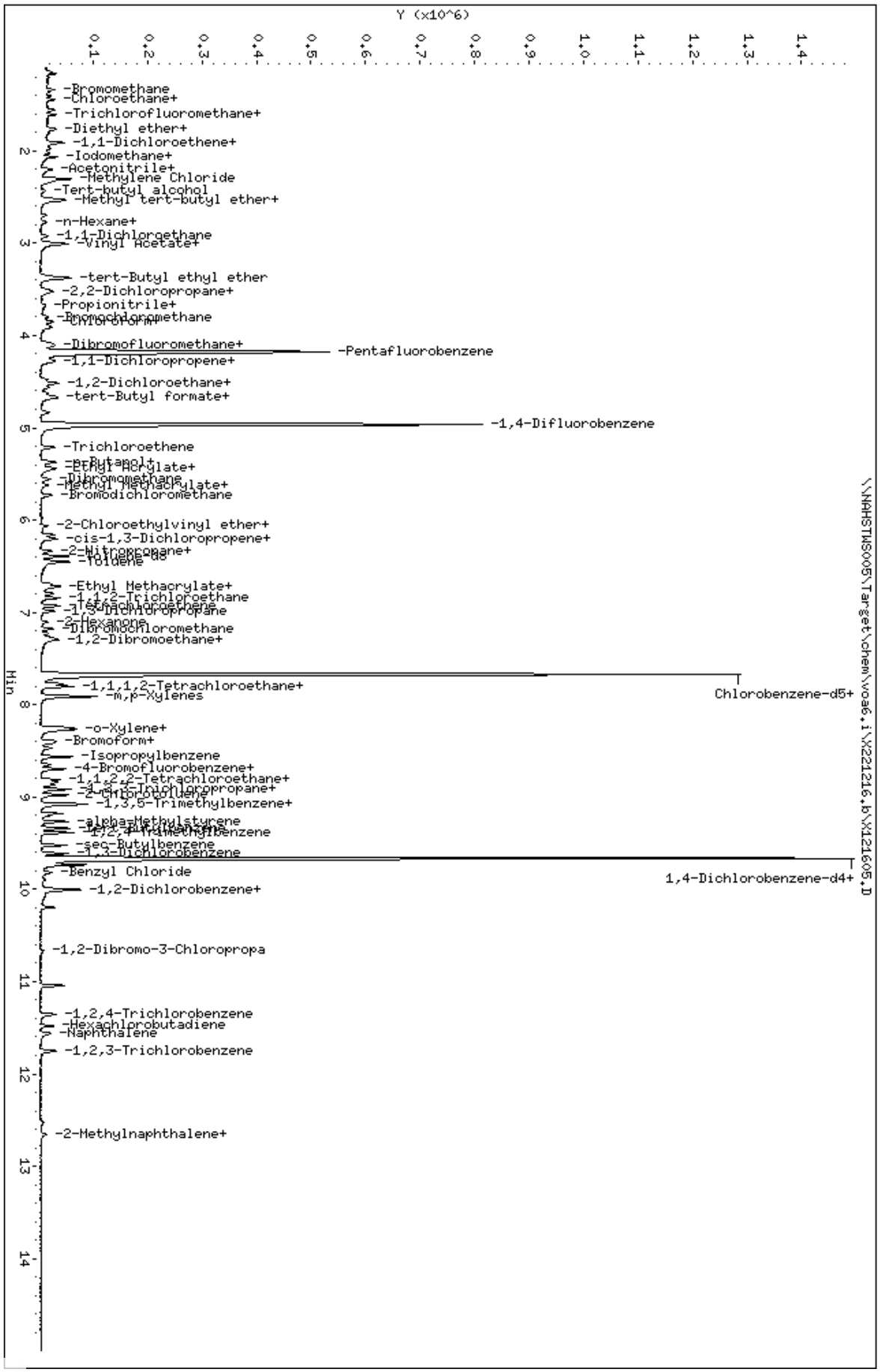
| | Compounds | QUANT SIG MASS | RT | EXP RT | REL RT | RESPONSE | AMOUNTS CAL-AMT ( ug/l) | ON-COL ( ug/l) |
|---|---|---|---|---|---|---|---|---|
| | 131 Methyl Acrylate | 55 | 3.720 | 3.720 | (0.891) | 5443 | 2.00000 | 1.75(M) |
| | 162 Butyl acrylate | 55 | 8.267 | 8.267 | (1.078) | 15015 | 2.00000 | 1.77 |
| | 2 Dichlorodifluoromethane | 85 | 0.969 | 0.969 | (0.232) | 6239 | 2.00000 | 2.33 |
| | 3 Chloromethane | 50 | 1.077 | 1.077 | (0.258) | 8057 | 2.00000 | 4.07 |
| | 5 Vinyl Chloride | 62 | 1.141 | 1.141 | (0.273) | 7263 | 2.00000 | 1.82 |
| | 6 Bromomethane | 94 | 1.340 | 1.340 | (0.321) | 5996 | 2.00000 | 3.68(M) |
| | 7 Chloroethane | 64 | 1.400 | 1.400 | (0.335) | 5667 | 2.00000 | 2.04(M) |
| | 8 Trichlorofluoromethane | 101 | 1.561 | 1.561 | (0.374) | 10463 | 2.00000 | 1.87 |
| | 9 Acrolein | 56 | 1.441 | 1.441 | (0.345) | 1317 | 4.00000 | 6.92(M) |
| | 10 Acetone | 43 | 1.973 | 1.973 | (0.472) | 7041 | 4.00000 | 5.46(M) |
| | 11 1,1-Dichloroethene | 96 | 1.910 | 1.910 | (0.457) | 6862 | 2.00000 | 1.98 |
| | 15 Iodomethane | 142 | 2.022 | 2.022 | (0.484) | 8702 | 4.00000 | 5.23 |
| | 16 Acrylonitrile | 53 | 2.554 | 2.554 | (0.611) | 4557 | 4.00000 | 3.87(M) |
| | 17 Methylene Chloride | 84 | 2.303 | 2.303 | (0.551) | 9194 | 2.00000 | 1.93(M) |
| | 18 Methyl tert-butyl ether | 73 | 2.536 | 2.536 | (0.607) | 23231 | 2.00000 | 2.04 |
| | 19 Carbon Disulfide | 76 | 2.067 | 2.067 | (0.495) | 34948 | 4.00000 | 3.85 |
| | 20 trans-1,2-Dichloroethene | 96 | 2.532 | 2.532 | (0.606) | 7113 | 2.00000 | 1.83 |
| | 21 Vinyl Acetate | 43 | 3.008 | 3.008 | (0.720) | 38835 | 4.00000 | 3.90 |
| | 22 1,1-Dichloroethane | 63 | 2.922 | 2.922 | (0.699) | 12778 | 2.00000 | 1.87 |
| | 24 2-Butanone | 43 | 3.604 | 3.604 | (0.863) | 5418 | 4.00000 | 6.89(M) |
| | 26 2,2-Dichloropropane | 77 | 3.507 | 3.507 | (0.839) | 11048 | 2.00000 | 1.91 |
| | 27 cis-1,2-Dichloroethene | 96 | 3.529 | 3.529 | (0.845) | 9675 | 2.00000 | 2.05 |
| | 28 Chloroform | 83 | 3.908 | 3.908 | (0.935) | 15581 | 2.00000 | 2.04 |
| | 29 Bromochloromethane | 128 | 3.803 | 3.803 | (0.910) | 5134 | 2.00000 | 1.98 |
| $ | 30 Dibromofluoromethane | 113 | 4.106 | 4.106 | (0.983) | 9050 | 2.00000 | 1.90 |
| | 31 1,1,1-Trichloroethane | 97 | 4.080 | 4.080 | (0.977) | 10962 | 2.00000 | 1.81 |
| | 32 1,1-Dichloropropene | 75 | 4.286 | 4.286 | (0.863) | 9042 | 2.00000 | 1.86 |
| | 33 1,2-Dichloroethane | 62 | 4.560 | 4.560 | (0.918) | 10812 | 2.00000 | 1.92 |
| | 34 Carbon Tetrachloride | 117 | 4.264 | 4.264 | (0.859) | 11092 | 2.00000 | 2.13(M) |
| $ | 35 1,2-Dichloroethane-d4 | 65 | 4.477 | 4.477 | (1.072) | 9783 | 2.00000 | 2.37 |
| * | 36 1,4-Difluorobenzene | 114 | 4.965 | 4.965 | (1.000) | 684444 | 50.0000 | |
| | 37 Benzene | 78 | 4.515 | 4.515 | (0.909) | 32394 | 2.00000 | 1.98 |
| | 38 Trichloroethene | 130 | 5.216 | 5.216 | (1.051) | 9277 | 2.00000 | 2.00 |
| | 39 Bromodichloromethane | 83 | 5.733 | 5.733 | (1.155) | 11961 | 2.00000 | 1.94 |
| | 41 2-Chloroethylvinyl ether | 63 | 6.059 | 6.059 | (1.220) | 6648 | 4.00000 | 3.80 |
| | 42 1,2-Dichloropropane | 63 | 5.441 | 5.441 | (1.096) | 8129 | 2.00000 | 1.86(M) |
| | 44 Dibromomethane | 93 | 5.553 | 5.553 | (1.119) | 6110 | 2.00000 | 2.06 |
| | 45 4-Methyl-2-Pentanone | 43 | 6.337 | 6.337 | (0.826) | 14771 | 4.00000 | 4.26 |
| | 46 cis-1,3-Dichloropropene | 75 | 6.161 | 6.161 | (1.241) | 13738 | 2.00000 | 1.90 |
| * | 47 Chlorobenzene-d5 | 117 | 7.671 | 7.671 | (1.000) | 647809 | 50.0000 | |
| $ | 48 Toluene-d8 | 98 | 6.393 | 6.393 | (0.833) | 31289 | 2.00000 | 1.95 |
| | 50 Toluene | 91 | 6.453 | 6.453 | (0.841) | 35620 | 2.00000 | 1.98 |
| | 51 trans-1,3-Dichloropropene | 75 | 6.693 | 6.693 | (1.348) | 10969 | 2.00000 | 1.83 |
| | 52 2-Hexanone | 43 | 7.105 | 7.105 | (0.926) | 9314 | 4.00000 | 3.95 |
| | 53 1,1,2-Trichloroethane | 83 | 6.843 | 6.843 | (0.892) | 7537 | 2.00000 | 2.09 |
| | 54 1,3-Dichloropropane | 76 | 6.989 | 6.989 | (0.911) | 14049 | 2.00000 | 1.98 |
| | 55 Dibromochloromethane | 129 | 7.180 | 7.180 | (0.936) | 10210 | 2.00000 | 1.96 |
| | 56 Tetrachloroethene | 164 | 6.929 | 6.929 | (0.903) | 7331 | 2.00000 | 1.97 |
| | 57 1,2-Dibromoethane | 107 | 7.263 | 7.263 | (0.947) | 8477 | 2.00000 | 1.88 |
| | 58 1-Chlorohexane | 55 | 7.697 | 7.697 | (1.550) | 5855 | 2.00000 | 1.77(MH) |
| | 59 Chlorobenzene | 112 | 7.694 | 7.694 | (1.003) | 24558 | 2.00000 | 1.93 |
| | 60 1,1,1,2-Tetrachloroethane | 131 | 7.772 | 7.772 | (1.013) | 9378 | 2.00000 | 1.98 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 61 Ethylbenzene | 106 | 7.802 | 7.802 (1.017) | 11791 | 2.00000 | 1.97 |
| 62 m,p-Xylenes | 106 | 7.911 | 7.911 (1.031) | 29170 | 4.00000 | 3.78 |

| | Compounds | QUANT SIG MASS | RT | EXP RT | REL RT | RESPONSE | AMOUNTS CAL-AMT ( ug/l) | ON-COL ( ug/l) |
|---|---|---|---|---|---|---|---|---|
| | 63 o-Xylene | 106 | 8.249 | 8.249 | (1.075) | 14764 | 2.00000 | 1.93 |
| | 64 Styrene | 104 | 8.271 | 8.271 | (1.078) | 22967 | 2.00000 | 1.80 |
| | 66 Bromoform | 173 | 8.417 | 8.417 | (1.097) | 6949 | 2.00000 | 1.93(T) |
| | 67 Isopropylbenzene | 105 | 8.563 | 8.563 | (1.116) | 32641 | 2.00000 | 1.87 |
| | 68 1,1,2,2-Tetrachloroethane | 83 | 8.841 | 8.841 | (0.915) | 11741 | 2.00000 | 2.08 |
| $ | 69 4-Bromofluorobenzene | 95 | 8.698 | 8.698 | (1.134) | 13631 | 2.00000 | 2.33 |
| * | 70 1,4-Dichlorobenzene-d4 | 152 | 9.662 | 9.662 | (1.000) | 352851 | 50.0000 | |
| | 71 1,2,3-Trichloropropane | 75 | 8.867 | 8.867 | (0.918) | 7514 | 2.00000 | 1.91 |
| | 73 n-Propylbenzene | 91 | 8.916 | 8.916 | (0.923) | 34981 | 2.00000 | 1.78 |
| | 74 Bromobenzene | 156 | 8.815 | 8.815 | (0.912) | 11721 | 2.00000 | 2.02 |
| | 75 1,3,5-Trimethylbenzene | 105 | 9.073 | 9.073 | (0.939) | 27917 | 2.00000 | 1.93 |
| | 76 2-Chlorotoluene | 91 | 8.980 | 8.980 | (0.929) | 26853 | 2.00000 | 2.09 |
| | 77 4-Chlorotoluene | 91 | 9.077 | 9.077 | (0.939) | 28173 | 2.00000 | 1.92 |
| | 78 tert-Butylbenzene | 119 | 9.336 | 9.336 | (0.966) | 22104 | 2.00000 | 1.87 |
| | 79 1,2,4-Trimethylbenzene | 105 | 9.384 | 9.384 | (0.971) | 28377 | 2.00000 | 1.86 |
| | 81 sec-Butylbenzene | 105 | 9.519 | 9.519 | (0.985) | 27643 | 2.00000 | 1.75 |
| | 82 p-Isopropyltoluene | 119 | 9.651 | 9.651 | (0.999) | 24966 | 2.00000 | 1.77 |
| | 83 1,3-Dichlorobenzene | 146 | 9.613 | 9.613 | (0.995) | 18708 | 2.00000 | 1.94 |
| | 84 1,4-Dichlorobenzene | 146 | 9.684 | 9.684 | (1.002) | 20552 | 2.00000 | 1.96 |
| | 86 Benzyl Chloride | 91 | 9.819 | 9.819 | (1.280) | 12783 | 2.00000 | 3.88 |
| | 87 n-Butylbenzene | 91 | 10.003 | 10.003 | (1.035) | 19853 | 2.00000 | 3.18(M) |
| | 88 1,2-Dichlorobenzene | 146 | 9.999 | 9.999 | (1.035) | 18921 | 2.00000 | 1.91 |
| | 89 1,2-Dibromo-3-Chloropropane | 155 | 10.678 | 10.678 | (1.105) | 1619 | 2.00000 | 1.88(M) |
| | 90 1,2,4-Trichlorobenzene | 180 | 11.352 | 11.352 | (1.175) | 11764 | 2.00000 | 1.88(M) |
| | 91 Hexachlorobutadiene | 225 | 11.480 | 11.480 | (1.188) | 3970 | 2.00000 | 1.39 |
| | 92 Naphthalene | 128 | 11.559 | 11.559 | (1.196) | 26250 | 2.00000 | 1.84(M) |
| | 93 1,2,3-Trichlorobenzene | 180 | 11.750 | 11.750 | (1.216) | 11288 | 2.00000 | 1.88 |
| M | 94 1,2-Dichloroethylene (total) | 96 | | | | 16788 | 4.00000 | |
| M | 95 Xylenes (total) | 106 | | | | 43934 | 6.00000 | |
| | 141 Cyclohexane | 56 | 4.125 | 4.125 | (0.987) | 7375 | 2.00000 | 2.82(H) |
| | 138 Freon TF | 101 | 1.917 | 1.917 | (0.459) | 6025 | 2.00000 | 1.79 |
| | 147 Methylcyclohexane | 55 | 5.373 | 5.373 | (1.082) | 16016 | 2.00000 | 1.91(M) |
| | 146 Methyl Acetate | 43 | 2.247 | 2.247 | (0.538) | 4149 | 2.00000 | 2.02 |
| | 148 Tert-Butyl alcohol | 59 | 2.434 | 2.434 | (0.583) | 12015 | 40.0000 | 38.02(a) |
| | 149 Isopropyl Alcohol | 45 | 2.101 | 2.101 | (0.503) | 5607 | 40.0000 | 33.97 |

## QC Flag Legend

T - Target compound detected outside RT window.
a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.
H - Operator selected an alternate compound hit.



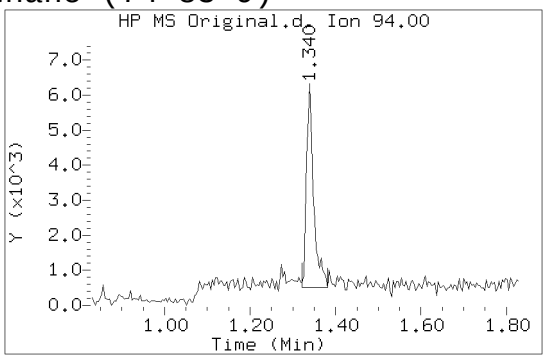

Data File: \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121605.D
Date : 16-DEC-2022 13:02
Client ID: VSTD002
Sample Info: VSTD002;VSTD002;1;4;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121605.D
Inj Date : 16-DEC-2022 13:02
InstruID : voa6.i
LabSampID : VSTD002

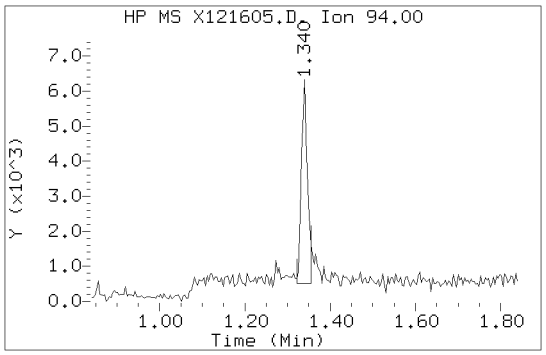
## Bromomethane (74-83-9)

**BEFORE**
MASS
94
AREA
6762
HEIGHT
5808
27-Dec-2022
16:03
linh
pham

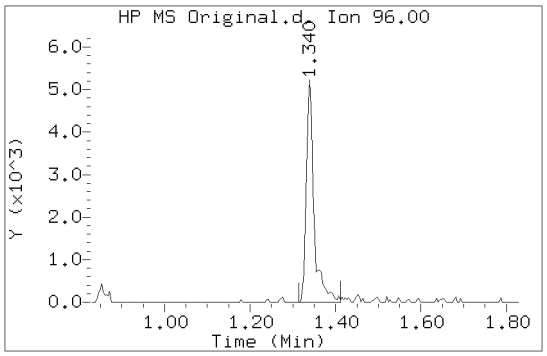



**AFTER**
MASS
94
AREA
5996
HEIGHT
5808
27-Dec-2022
16:07
linh
pham

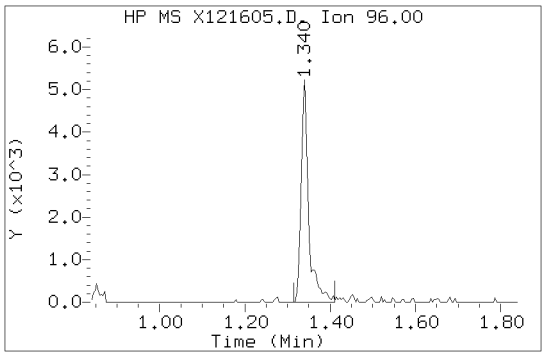
Reason Code:




**BEFORE**
MASS
96
AREA
6661
HEIGHT
5227
27-Dec-2022
16:03
linh
pham

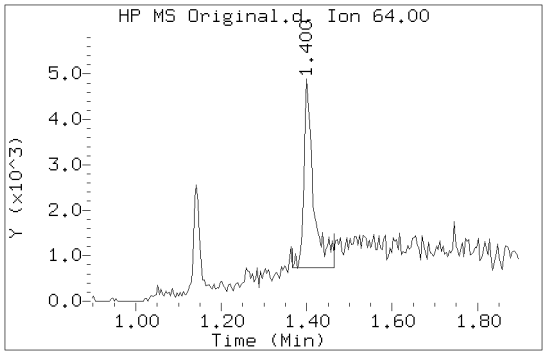



**AFTER**
MASS
96
AREA
6661
HEIGHT
5227
27-Dec-2022
16:07
linh
pham



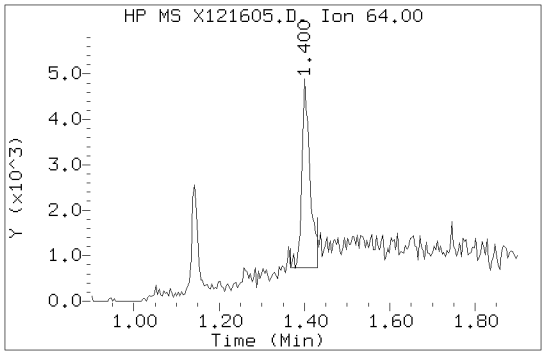

## Chloroethane (75-00-3)

**BEFORE**
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64
AREA
6641
HEIGHT
4162
27-Dec-2022
16:03
linh
pham

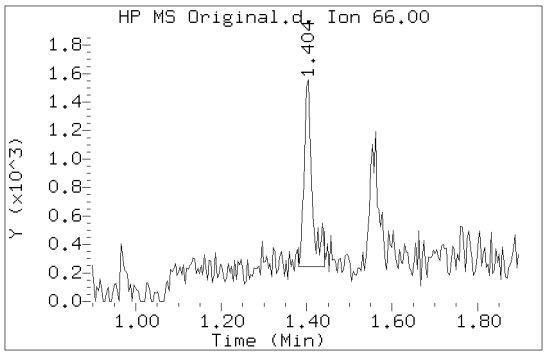



**AFTER**
MASS
64
AREA
5667
HEIGHT
4162
27-Dec-2022
16:07
linh
pham

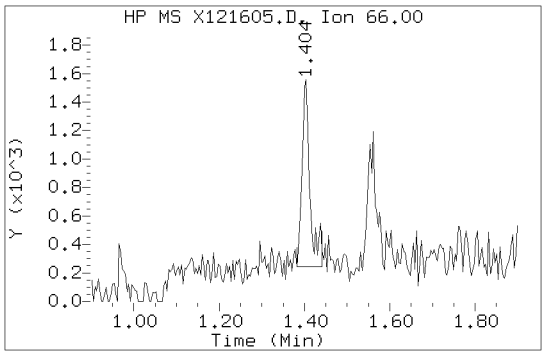
Reason Code:




**BEFORE**
MASS
66
AREA
1745
HEIGHT
1315
27-Dec-2022
16:03
linh
pham




**AFTER**
MASS
66
AREA
1745
HEIGHT
1315
27-Dec-2022
16:07
linh
pham



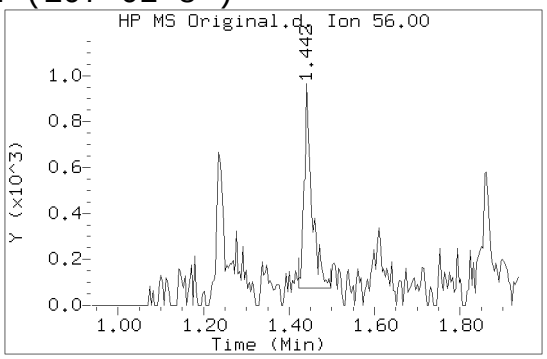
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Inj Date : 16-DEC-2022 13:02
InstruID : voa6.i
LabSampID : VSTD002

## Acrolein (107-02-8 )

Reason Code:

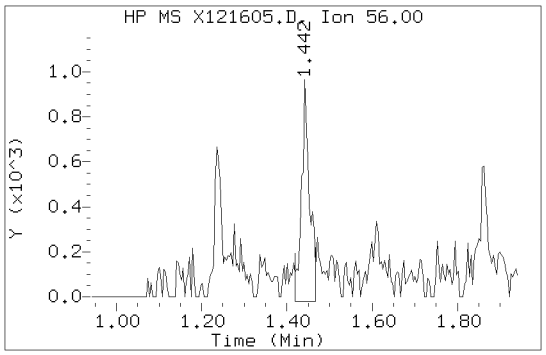
BEFORE

MASS
56
AREA
1122
HEIGHT
890
27-Dec-2022
16:03
linh
pham



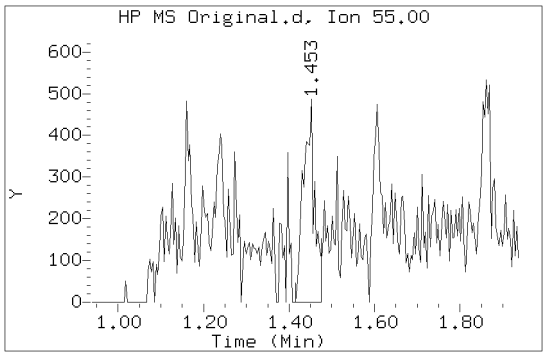

AFTER

MASS
56
AREA
1317
HEIGHT
985
27-Dec-2022
16:07
linh
pham



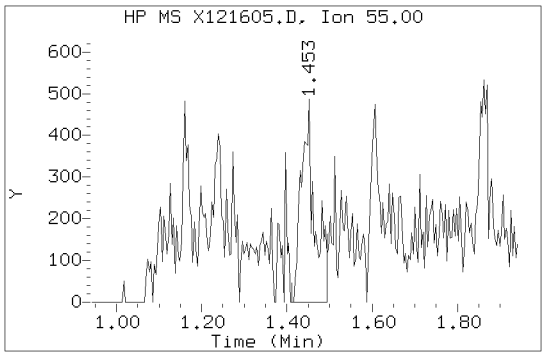

BEFORE

MASS
55
AREA
885
HEIGHT
487
27-Dec-2022
16:03
linh
pham




AFTER

MASS
55
AREA
1067
HEIGHT
487
27-Dec-2022
16:07
linh
pham

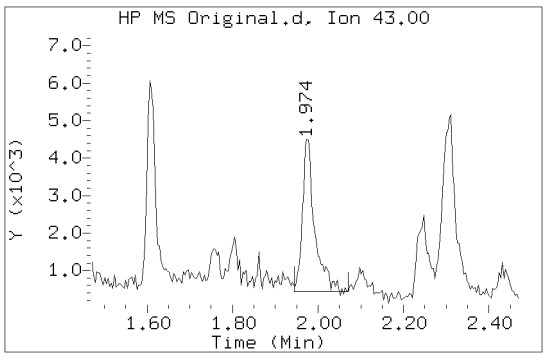



## Acetone (67-64-1)

Reason Code:

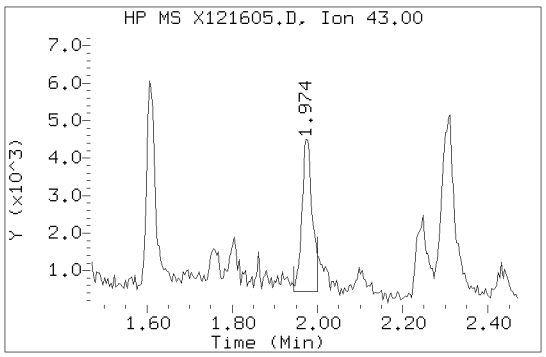
BEFORE

MASS
43
AREA
8369
HEIGHT
4066
27-Dec-2022
16:03
linh
pham



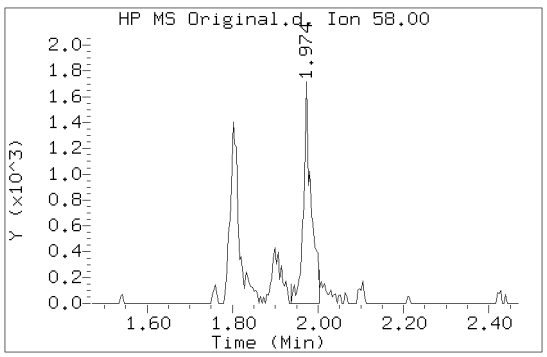

AFTER

MASS
43
AREA
7041
HEIGHT
4066
27-Dec-2022
16:07
linh
pham



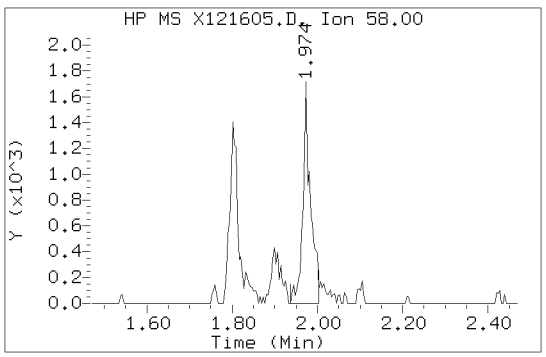

BEFORE

MASS
58
AREA
2165
HEIGHT
1717
27-Dec-2022
16:03
linh
pham




AFTER

MASS
58
AREA
2165
HEIGHT
1717
27-Dec-2022
16:07
linh
pham



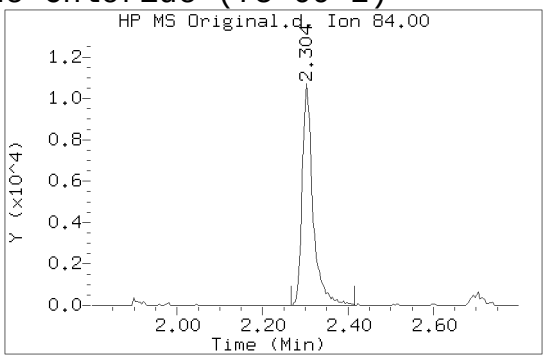
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Inj Date : 16-DEC-2022 13:02
InstruID : voa6.i
LabSampID : VSTD002

## Methylene Chloride (75-09-2)

Reason Code:

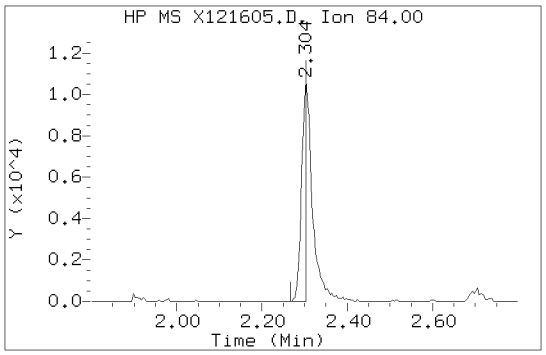
**BEFORE**

MASS
84
AREA
19299
HEIGHT
10710
27-Dec-2022
16:03
linh
pham



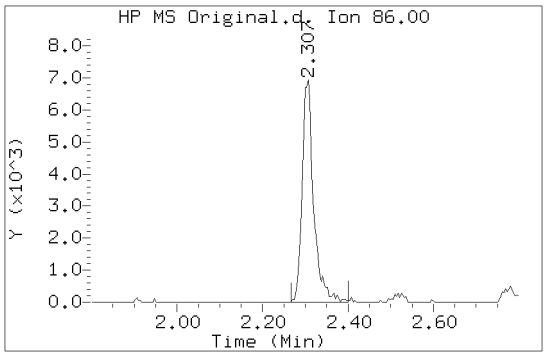

**AFTER**

MASS
84
AREA
9194
HEIGHT
10710
27-Dec-2022
16:07
linh
pham



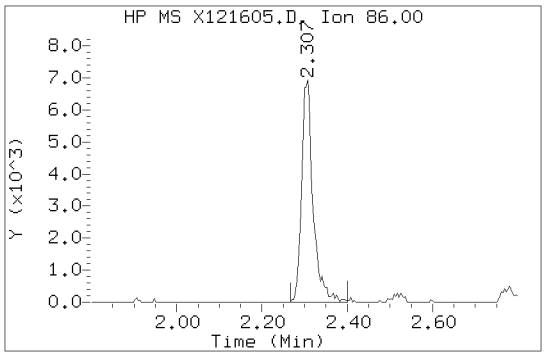

**BEFORE**

MASS
86
AREA
13231
HEIGHT
6936
27-Dec-2022
16:03
linh
pham



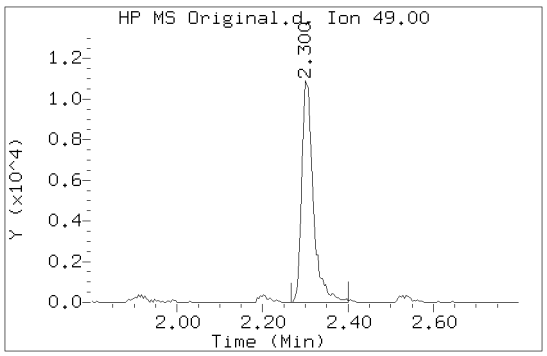

**AFTER**

MASS
86
AREA
13231
HEIGHT
6936
27-Dec-2022
16:07
linh
pham



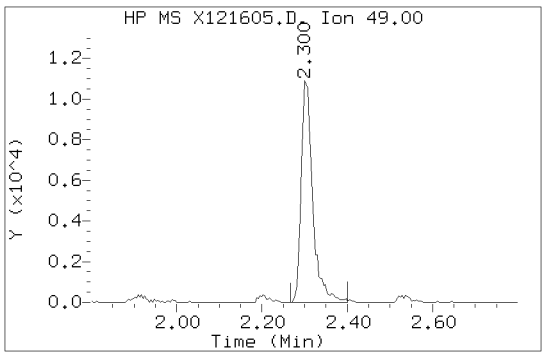

**BEFORE**

MASS
49
AREA
21067
HEIGHT
10905
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
49
AREA
21067
HEIGHT
10905
27-Dec-2022
16:07
linh
pham

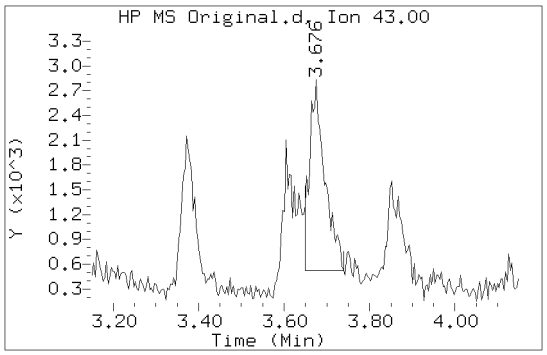



## 2-Butanone (78-93-3)

Reason Code:

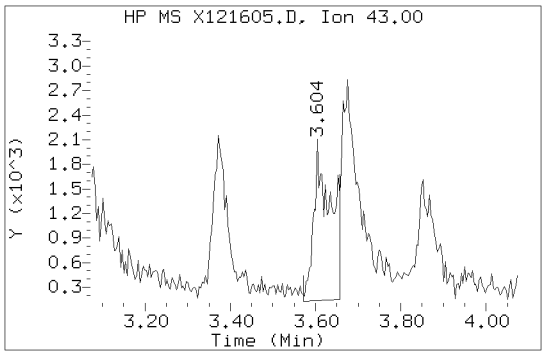
**BEFORE**

MASS
43
AREA
5778
HEIGHT
2307
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
43
AREA
5418
HEIGHT
1969
27-Dec-2022
16:07
linh
pham



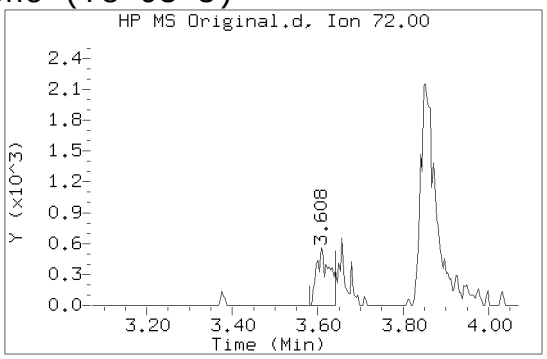
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121605.D
Inj Date : 16-DEC-2022 13:02
InstruID : voa6.i
LabSampID : VSTD002

## 2-Butanone (78-93-3)

Reason Code:

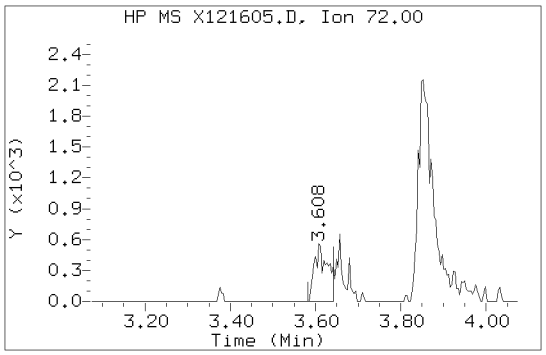
**BEFORE**

MASS
72
AREA
1209
HEIGHT
563
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
72
AREA
1209
HEIGHT
563
27-Dec-2022
16:07
linh
pham

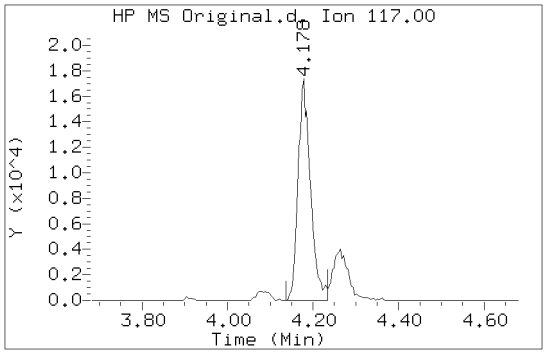



## Carbon Tetrachloride (56-23-5)

Reason Code:

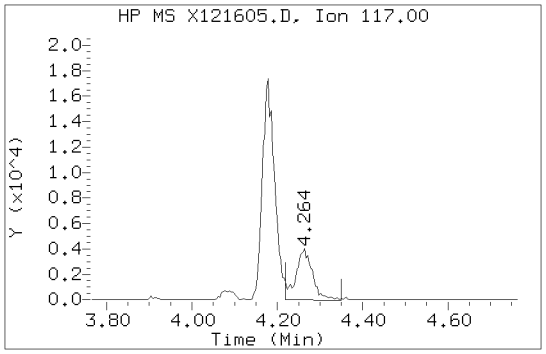
**BEFORE**

MASS
117
AREA
35555
HEIGHT
17376
27-Dec-2022
16:03
linh
pham



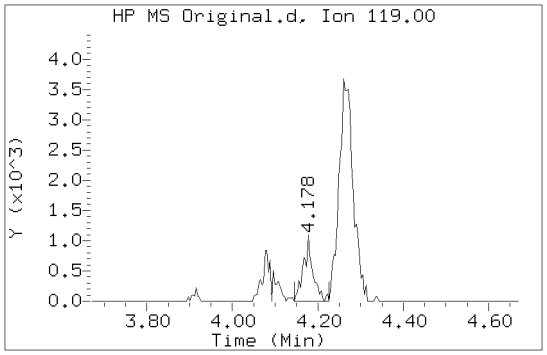

**AFTER**

MASS
117
AREA
11092
HEIGHT
4036
27-Dec-2022
16:07
linh
pham



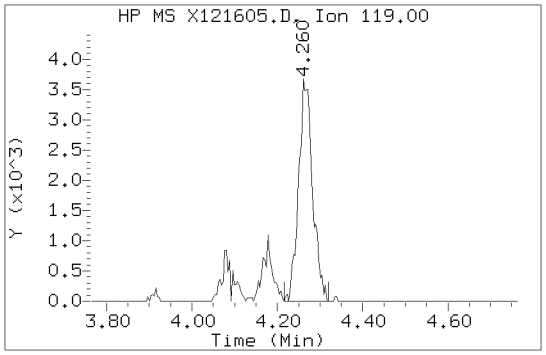

**BEFORE**

MASS
119
AREA
1692
HEIGHT
1100
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
119
AREA
8494
HEIGHT
3676
27-Dec-2022
16:07
linh
pham

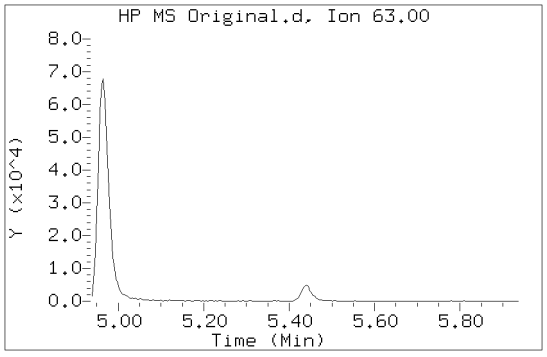



## 1,2-Dichloropropane (78-87-5)

Reason Code:

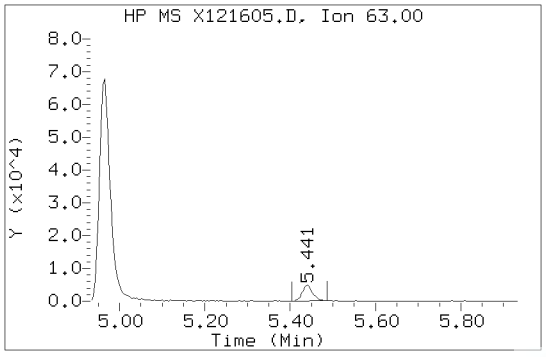
**BEFORE**

MASS
63
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
63
AREA
8129
HEIGHT
4705
27-Dec-2022
16:07
linh
pham



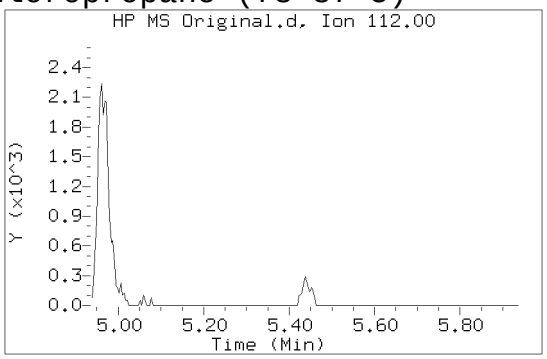
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121605.D
Inj Date : 16-DEC-2022 13:02
InstruID : voa6.i
LabSampID : VSTD002

## 1,2-Dichloropropane (78-87-5)

Reason Code:

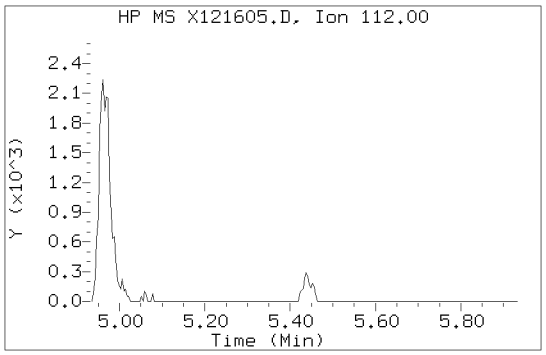
**BEFORE**

MASS
112
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
112
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham

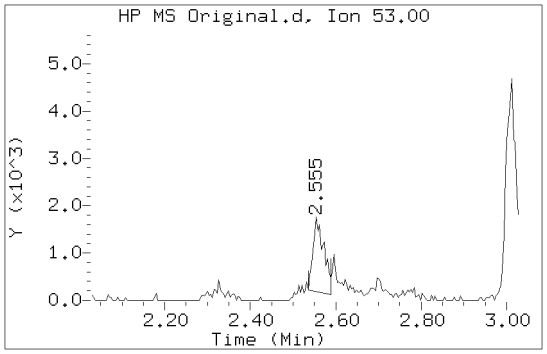



## Acrylonitrile (107-13-1)

Reason Code:

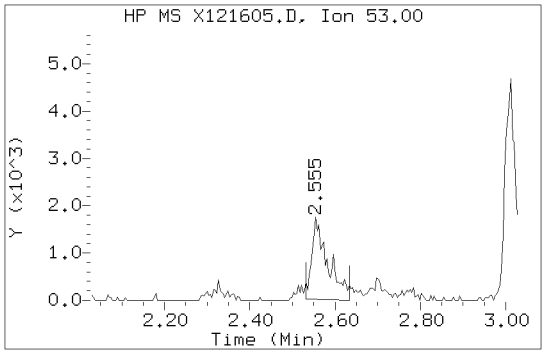
**BEFORE**

MASS
53
AREA
2810
HEIGHT
1577
27-Dec-2022
16:03
linh
pham



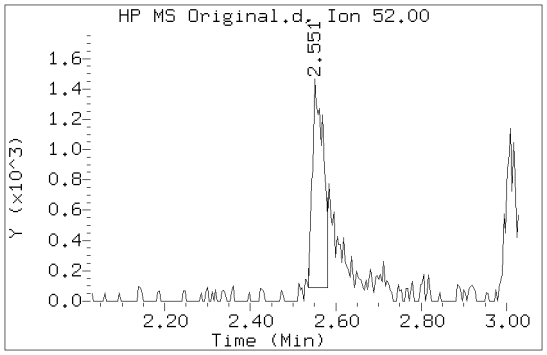

**AFTER**

MASS
53
AREA
4557
HEIGHT
1735
27-Dec-2022
16:07
linh
pham



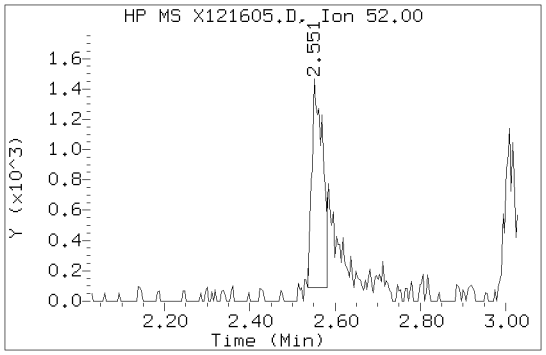

**BEFORE**

MASS
52
AREA
2408
HEIGHT
1379
27-Dec-2022
16:03
linh
pham



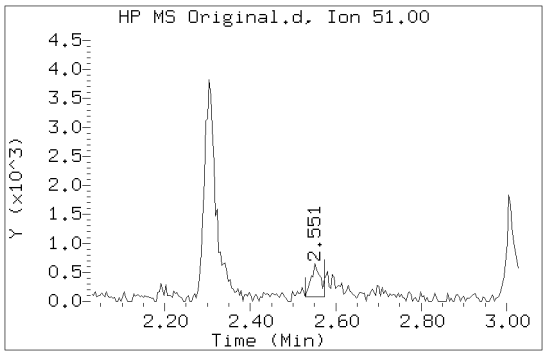

**AFTER**

MASS
52
AREA
2408
HEIGHT
1379
27-Dec-2022
16:07
linh
pham



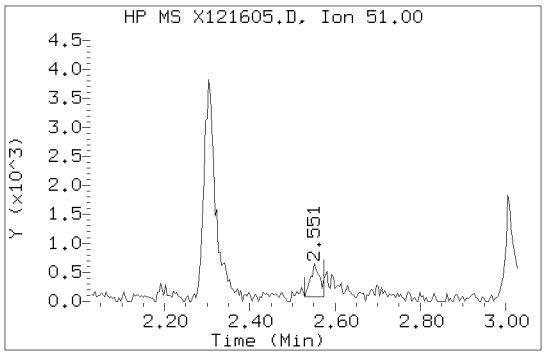

**BEFORE**

MASS
51
AREA
876
HEIGHT
575
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
51
AREA
876
HEIGHT
575
27-Dec-2022
16:07
linh
pham

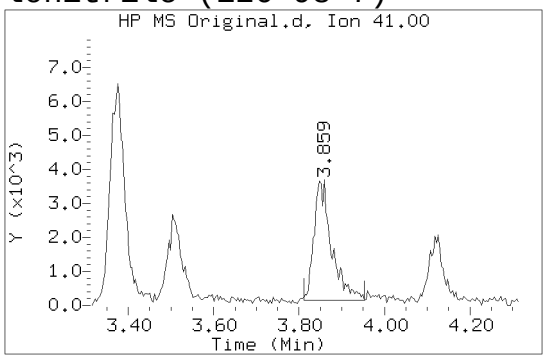


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121605.D
Inj Date : 16-DEC-2022 13:02
InstruID : voa6.i
LabSampID : VSTD002

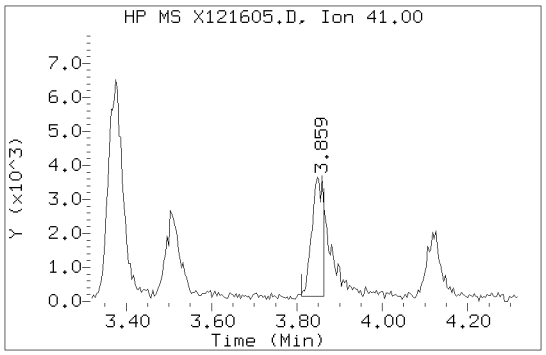
## Methacrylonitrile (126-98-7)

Reason Code:

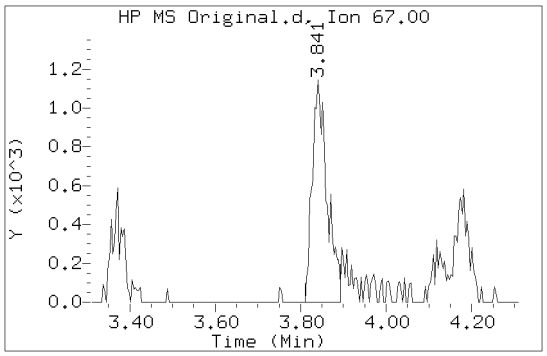
BEFORE
MASS
41
AREA
10013
HEIGHT
3544
27-Dec-2022
16:03
linh
pham



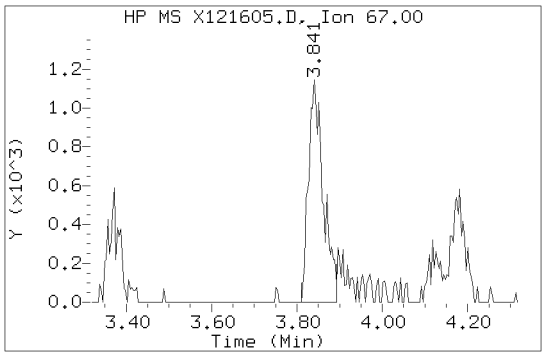

AFTER
MASS
41
AREA
6388
HEIGHT
3544
27-Dec-2022
16:07
linh
pham



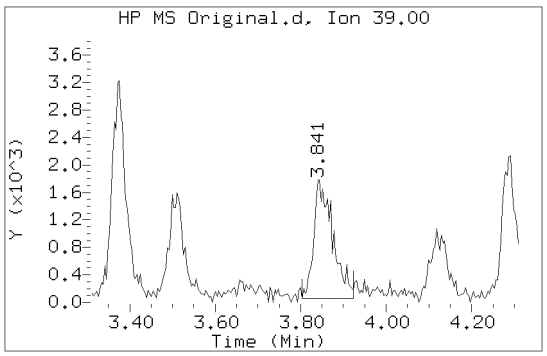

BEFORE
MASS
67
AREA
2751
HEIGHT
1145
27-Dec-2022
16:03
linh
pham



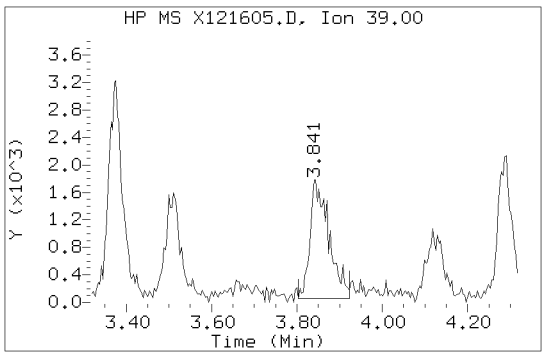

AFTER
MASS
67
AREA
2751
HEIGHT
1145
27-Dec-2022
16:07
linh
pham




BEFORE
MASS
39
AREA
5310
HEIGHT
1724
27-Dec-2022
16:03
linh
pham



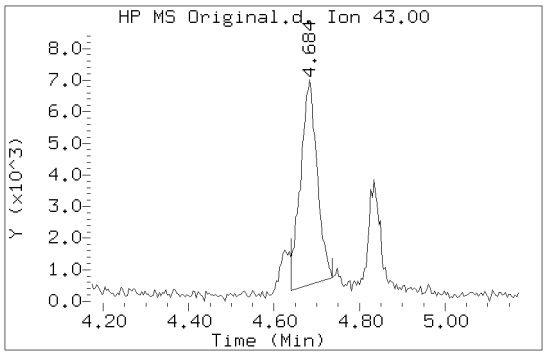

AFTER
MASS
39
AREA
5310
HEIGHT
1724
27-Dec-2022
16:07
linh
pham



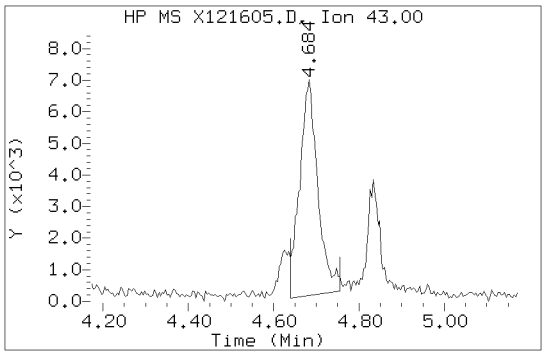

## Isobutyl Alcohol (78-83-1)

Reason Code:

BEFORE
MASS
43
AREA
17811
HEIGHT
6479
27-Dec-2022
16:03
linh
pham




AFTER
MASS
43
AREA
20629
HEIGHT
6832
27-Dec-2022
16:07
linh
pham



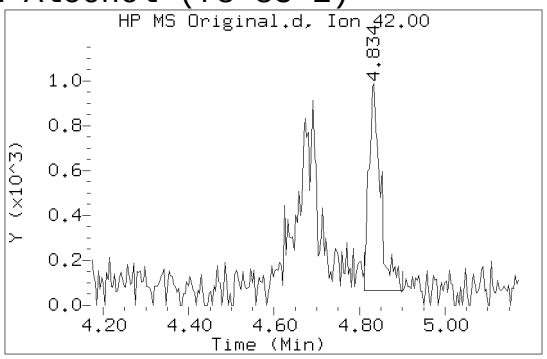
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121605.D
Inj Date : 16-DEC-2022 13:02
InstruID : voa6.i
LabSampID : VSTD002

## Isobutyl Alcohol (78-83-1)

Reason Code:

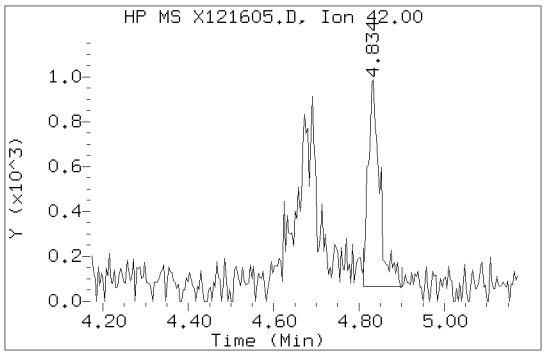
**BEFORE**

MASS
42
AREA
1728
HEIGHT
920
27-Dec-2022
16:03
linh
pham



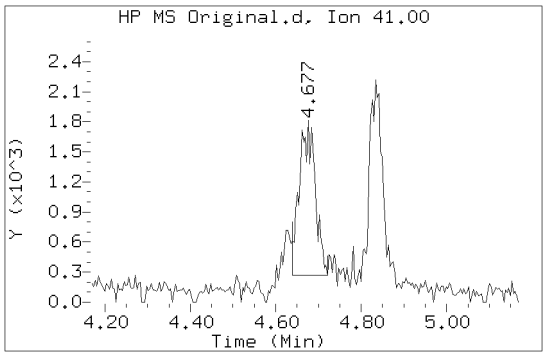

**AFTER**

MASS
42
AREA
1728
HEIGHT
920
27-Dec-2022
16:07
linh
pham



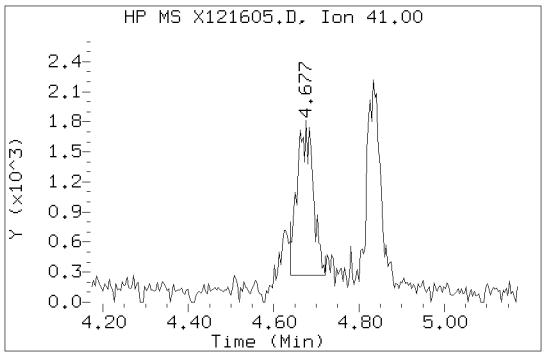

**BEFORE**

MASS
41
AREA
4067
HEIGHT
1547
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
41
AREA
4067
HEIGHT
1547
27-Dec-2022
16:07
linh
pham

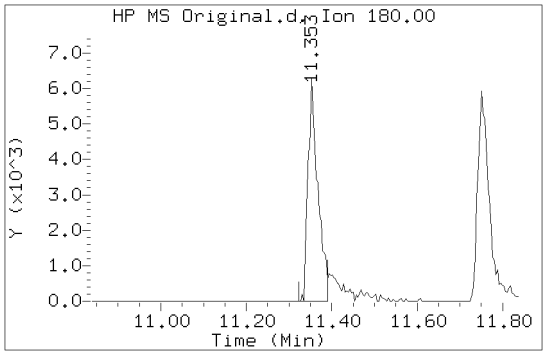



## 1,2,4-Trichlorobenzene (120-82-1)

Reason Code:

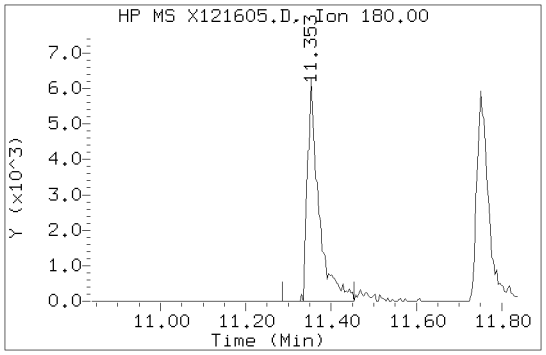
**BEFORE**

MASS
180
AREA
10131
HEIGHT
6269
27-Dec-2022
16:03
linh
pham



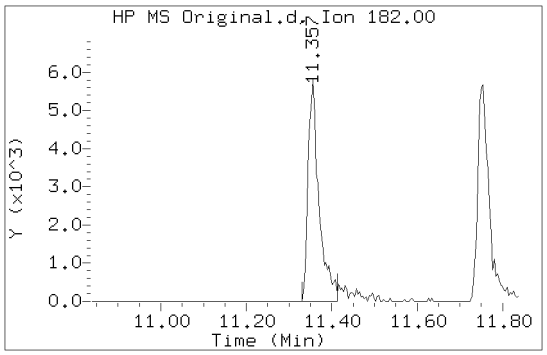

**AFTER**

MASS
180
AREA
11764
HEIGHT
6269
27-Dec-2022
16:07
linh
pham



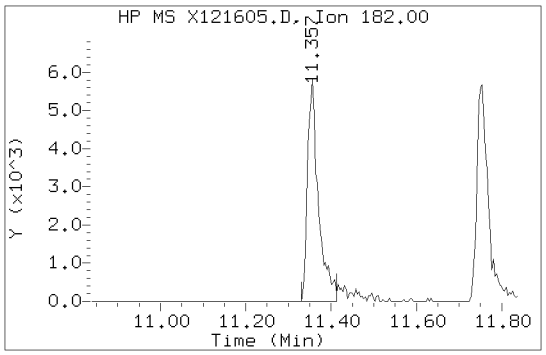

**BEFORE**

MASS
182
AREA
10317
HEIGHT
5807
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
182
AREA
10317
HEIGHT
5807
27-Dec-2022
16:07
linh
pham



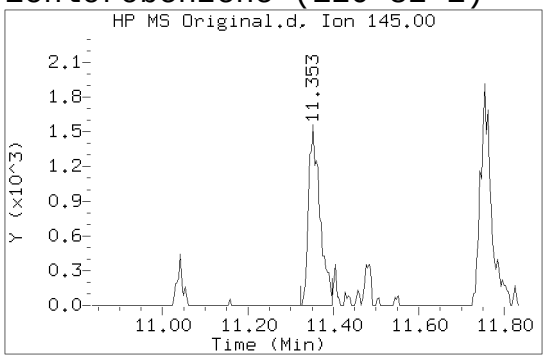
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121605.D
Inj Date : 16-DEC-2022 13:02
InstruID : voa6.i
LabSampID : VSTD002

## 1,2,4-Trichlorobenzene (120-82-1)

Reason Code:

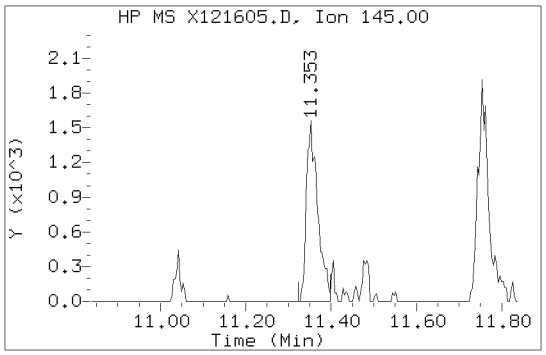
**BEFORE**

MASS
145
AREA
2887
HEIGHT
1565
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
145
AREA
2887
HEIGHT
1565
27-Dec-2022
16:07
linh
pham

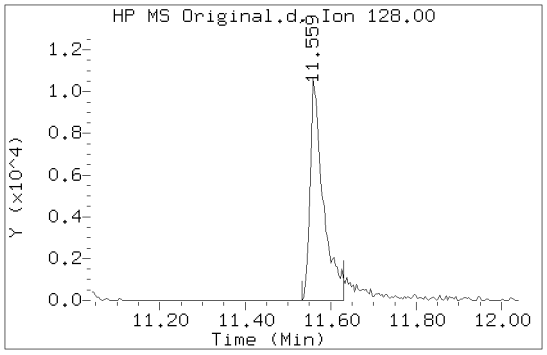



## Naphthalene (91-20-3)

Reason Code:

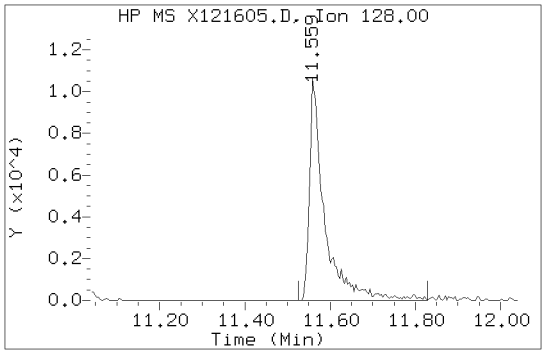
**BEFORE**

MASS
128
AREA
22581
HEIGHT
10616
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
128
AREA
26250
HEIGHT
10616
27-Dec-2022
16:07
linh
pham

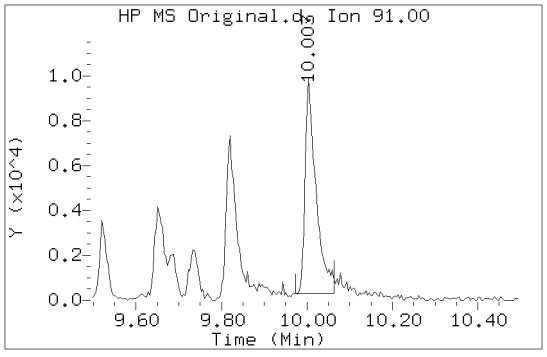



## n-Butylbenzene (104-51-8)

Reason Code:

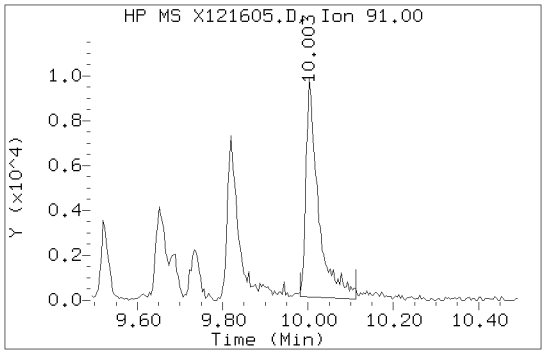
**BEFORE**

MASS
91
AREA
17181
HEIGHT
9558
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
91
AREA
19853
HEIGHT
9720
27-Dec-2022
16:07
linh
pham

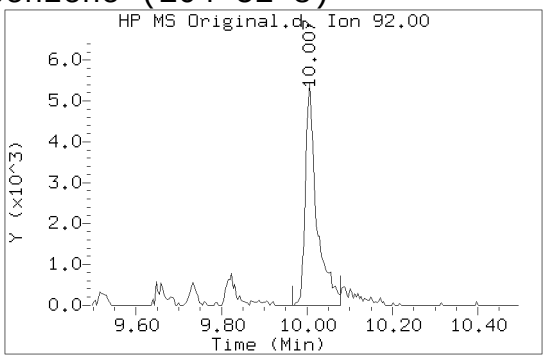


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121605.D
Inj Date : 16-DEC-2022 13:02
InstruID : voa6.i
LabSampID : VSTD002

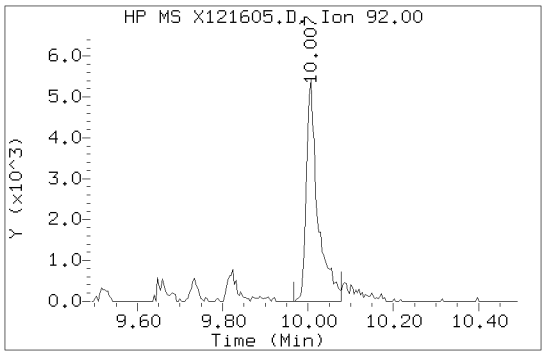
## n-Butylbenzene (104-51-8)

Reason Code:

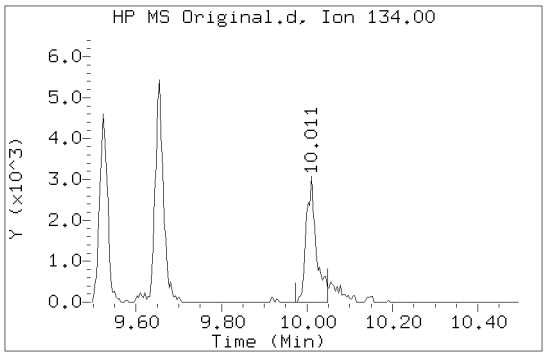
**BEFORE**
MASS
92
AREA
10185
HEIGHT
5422
27-Dec-2022
16:03
linh
pham



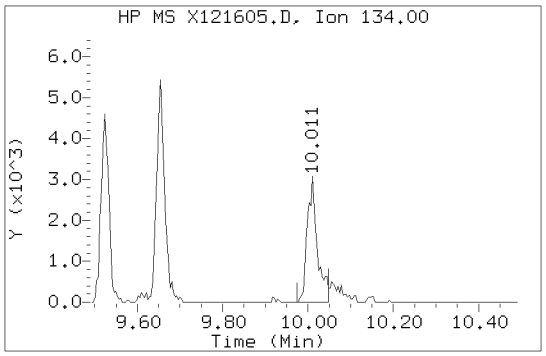

**AFTER**
MASS
92
AREA
10185
HEIGHT
5422
27-Dec-2022
16:07
linh
pham




**BEFORE**
MASS
134
AREA
5059
HEIGHT
3076
27-Dec-2022
16:03
linh
pham



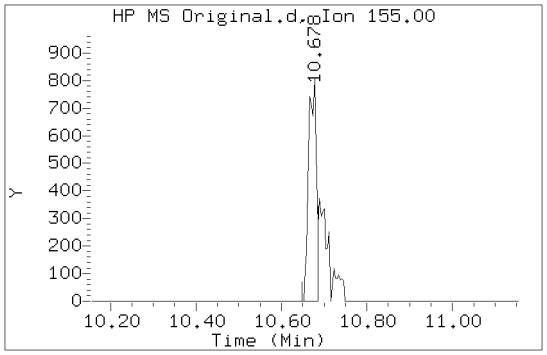

**AFTER**
MASS
134
AREA
5059
HEIGHT
3076
27-Dec-2022
16:07
linh
pham



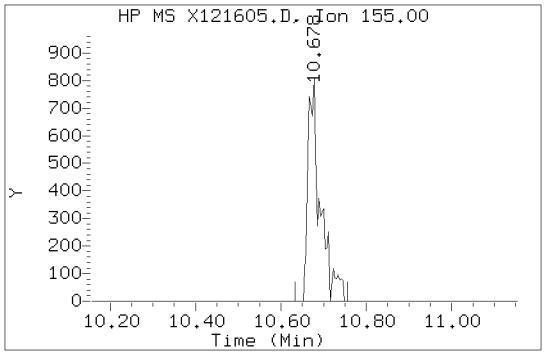

## 1,2-Dibromo-3-Chloropropane (96-12-8)

Reason Code:

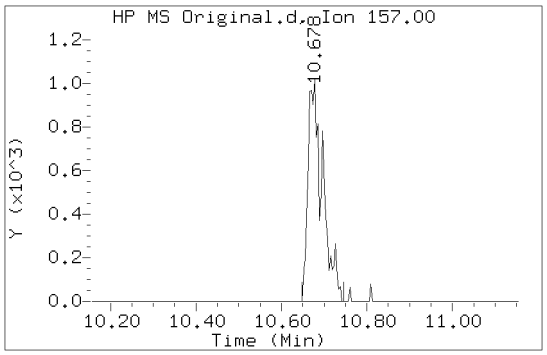
**BEFORE**
MASS
155
AREA
1026
HEIGHT
806
27-Dec-2022
16:03
linh
pham



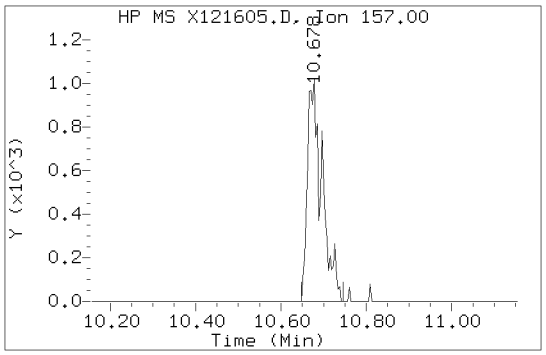

**AFTER**
MASS
155
AREA
1619
HEIGHT
806
27-Dec-2022
16:07
linh
pham




**BEFORE**
MASS
157
AREA
2422
HEIGHT
1016
27-Dec-2022
16:03
linh
pham




**AFTER**
MASS
157
AREA
2422
HEIGHT
1016
27-Dec-2022
16:07
linh
pham



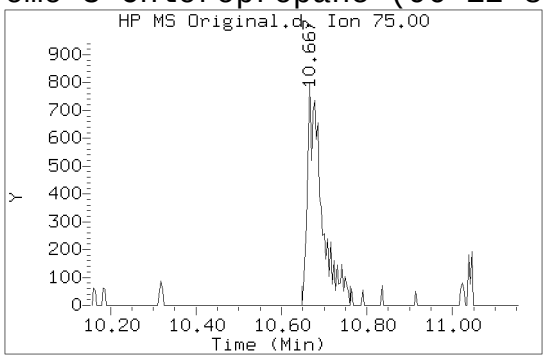
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121605.D
Inj Date : 16-DEC-2022 13:02
InstruID : voa6.i
LabSampID : VSTD002

## 1,2-Dibromo-3-Chloropropane (96-12-8)

Reason Code:

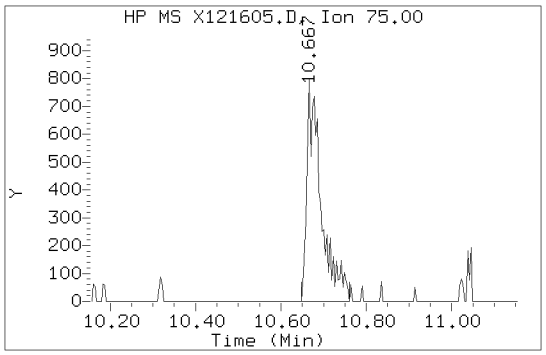
**BEFORE**

MASS
75
AREA
1843
HEIGHT
796
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
75
AREA
1843
HEIGHT
796
27-Dec-2022
16:07
linh
pham

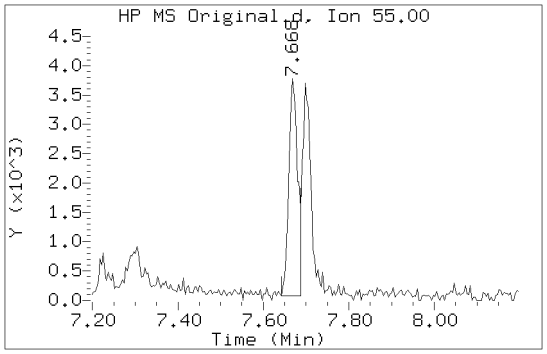



## 1-Chlorohexane (544-10-5)

Reason Code:

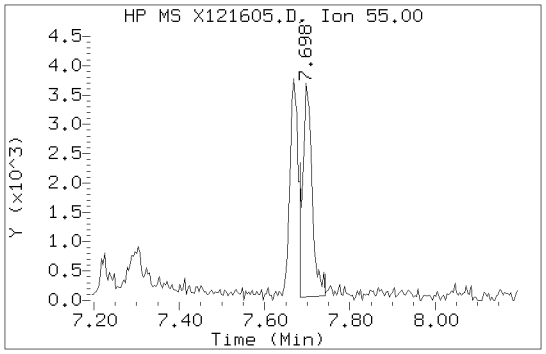
**BEFORE**

MASS
55
AREA
5357
HEIGHT
3703
27-Dec-2022
16:03
linh
pham



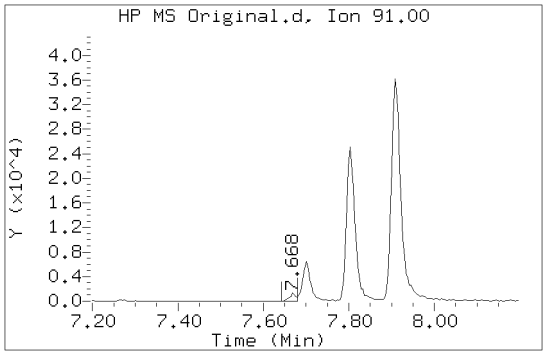

**AFTER**

MASS
55
AREA
5855
HEIGHT
3647
27-Dec-2022
16:07
linh
pham



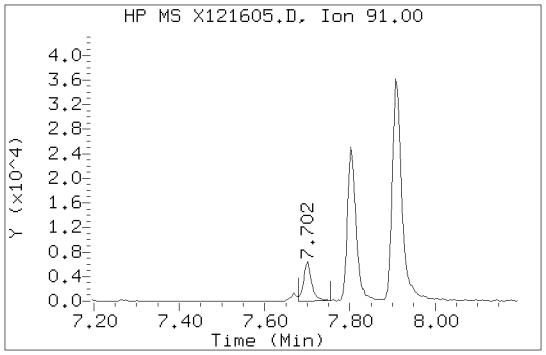

**BEFORE**

MASS
91
AREA
1356
HEIGHT
1324
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
91
AREA
8682
HEIGHT
6440
27-Dec-2022
16:07
linh
pham

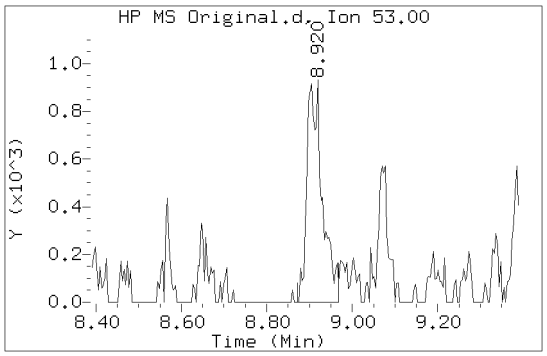



## trans-1,4-Dichloro-2-butene (110-57-6)

Reason Code:

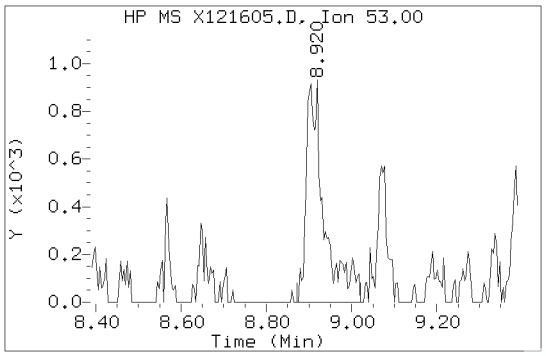
**BEFORE**

MASS
53
AREA
2313
HEIGHT
932
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
53
AREA
2690
HEIGHT
932
27-Dec-2022
16:07
linh
pham



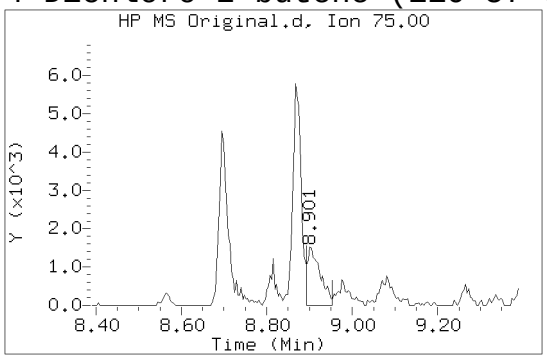
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121605.D
Inj Date : 16-DEC-2022 13:02
InstruID : voa6.i
LabSampID : VSTD002

## trans-1,4-Dichloro-2-butene (110-57-6)

Reason Code:

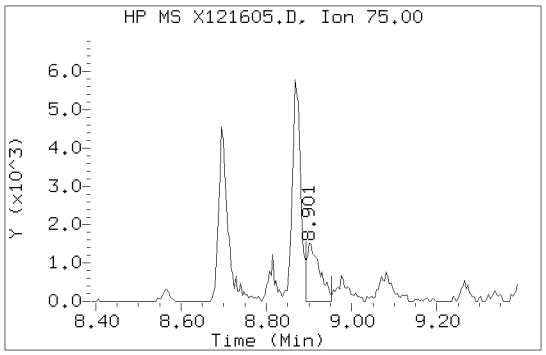
**BEFORE**

MASS
75
AREA
3228
HEIGHT
1526
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
75
AREA
3228
HEIGHT
1526
27-Dec-2022
16:07
linh
pham

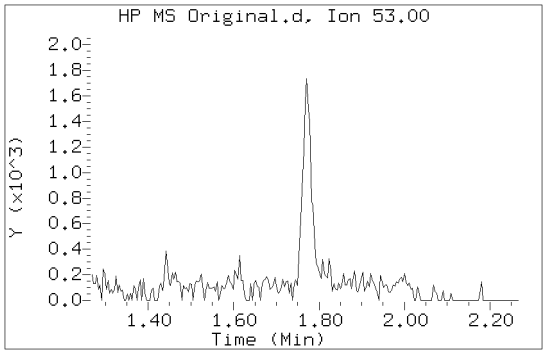



## Chloroprene (126-99-8)

Reason Code:

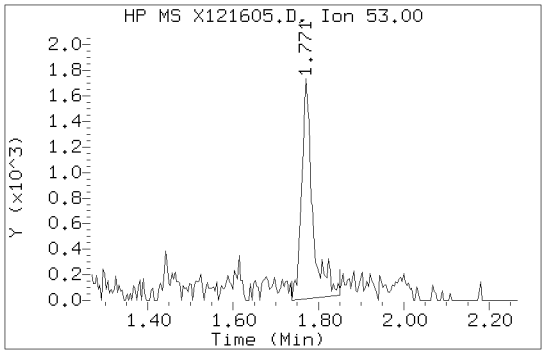
**BEFORE**

MASS
53
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



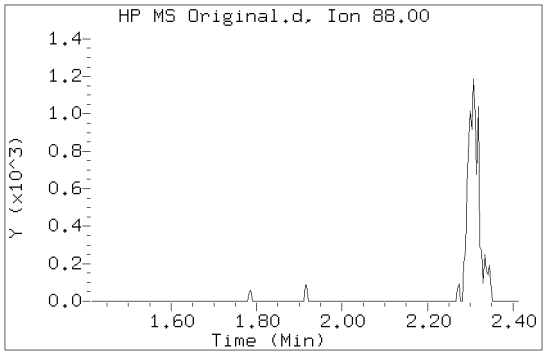

**AFTER**

MASS
53
AREA
3126
HEIGHT
1722
27-Dec-2022
16:07
linh
pham



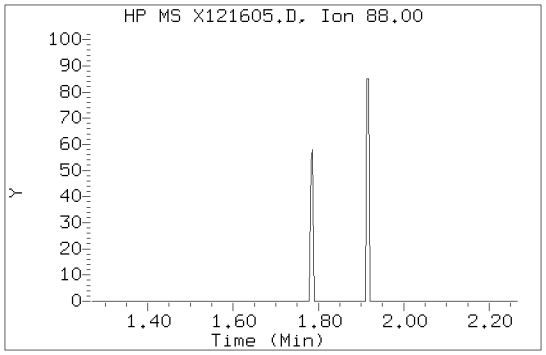

**BEFORE**

MASS
88
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
88
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham

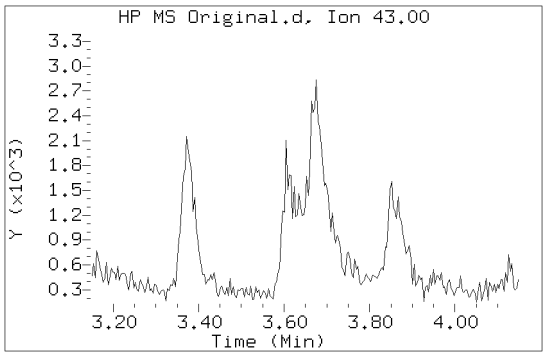



## Ethyl Acetate (141-78-6)

Reason Code:

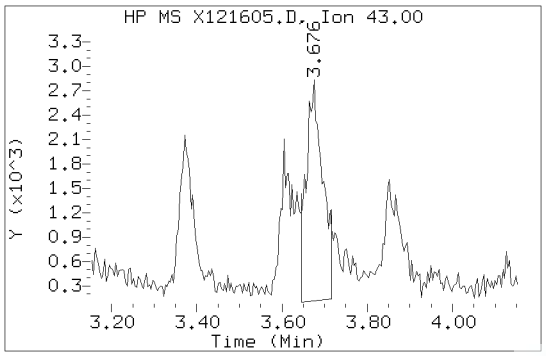
**BEFORE**

MASS
43
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham




**AFTER**

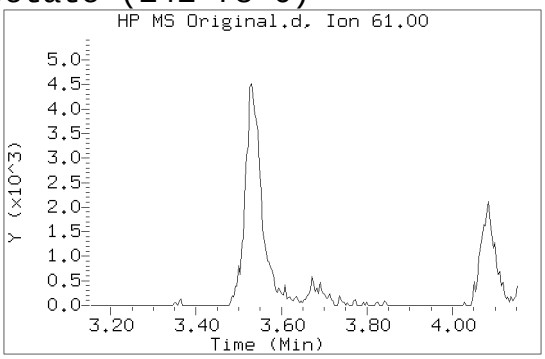
MASS
43
AREA
7422
HEIGHT
2716
27-Dec-2022
16:07
linh
pham



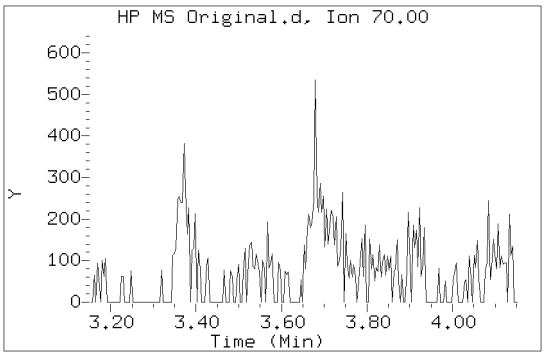
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121605.D
Inj Date : 16-DEC-2022 13:02
InstruID : voa6.i
LabSampID : VSTD002

## Ethyl Acetate (141-78-6)

**BEFORE**
MASS
61
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham

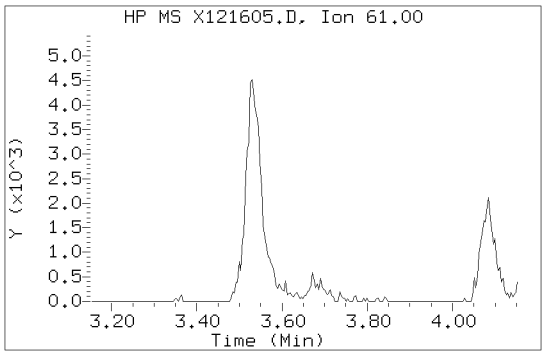



**BEFORE**
MASS
70
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham

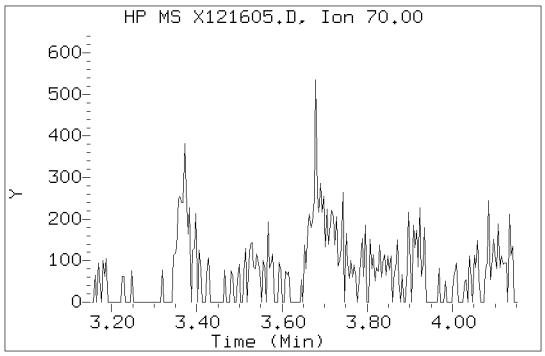



Reason Code:

**AFTER**
MASS
61
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham

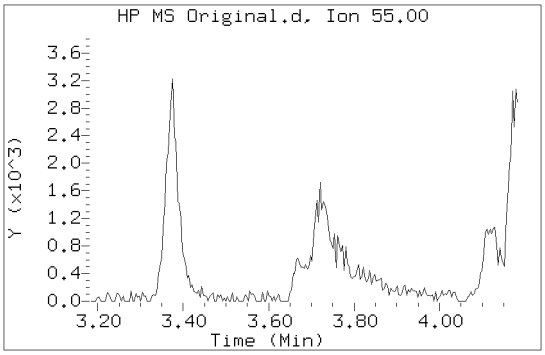



**AFTER**
MASS
70
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham

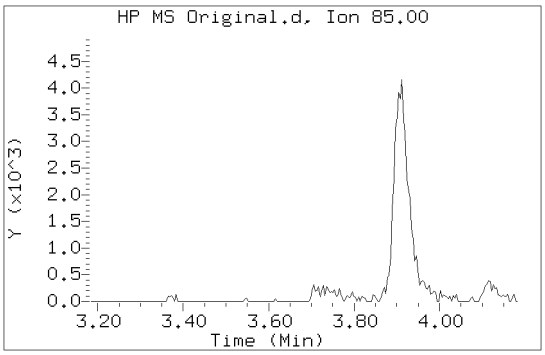



## Methyl Acrylate (96-33-3)

**BEFORE**
MASS
55
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham

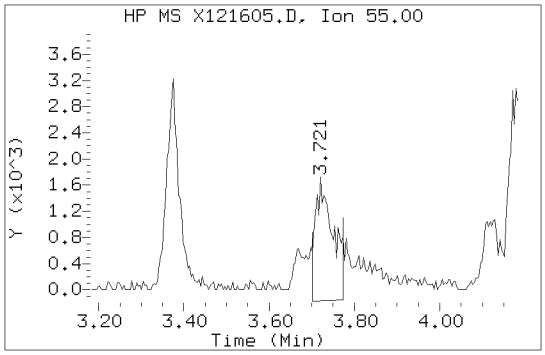



**BEFORE**
MASS
85
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham

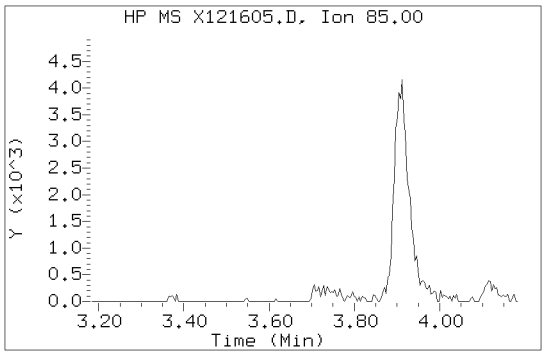



Reason Code:

**AFTER**
MASS
55
AREA
5443
HEIGHT
1892
27-Dec-2022
16:07
linh
pham




**AFTER**
MASS
85
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham



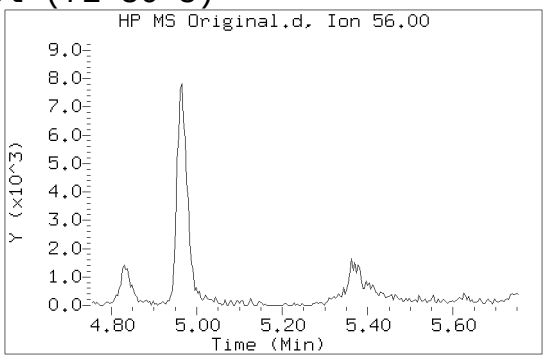
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121605.D
Inj Date : 16-DEC-2022 13:02
InstruID : voa6.i
LabSampID : VSTD002

## n-Butanol (71-36-3)

Reason Code:

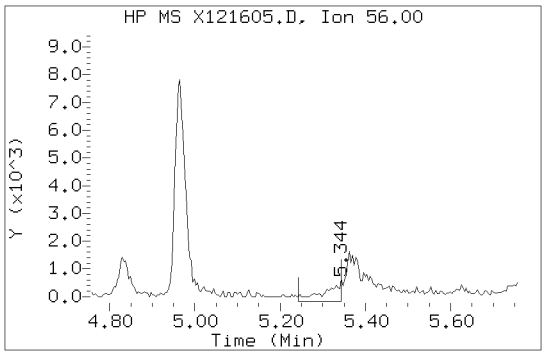
**BEFORE**

MASS
56
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



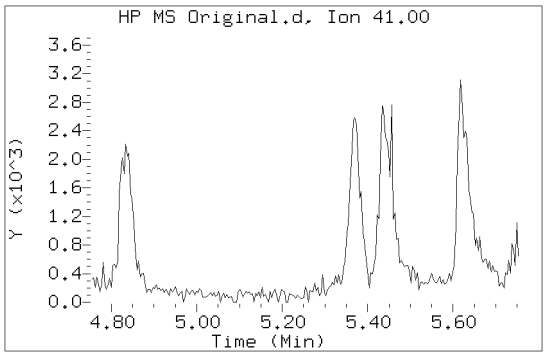

**AFTER**

MASS
56
AREA
2004
HEIGHT
808
27-Dec-2022
16:07
linh
pham



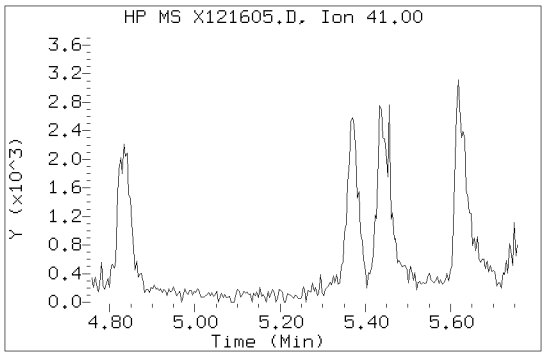

**BEFORE**

MASS
41
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
41
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham

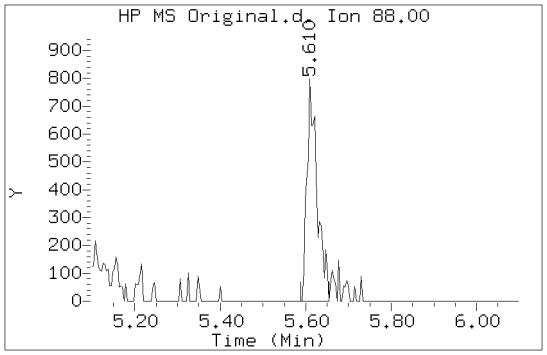



## 1,4-Dioxane ()

Reason Code:

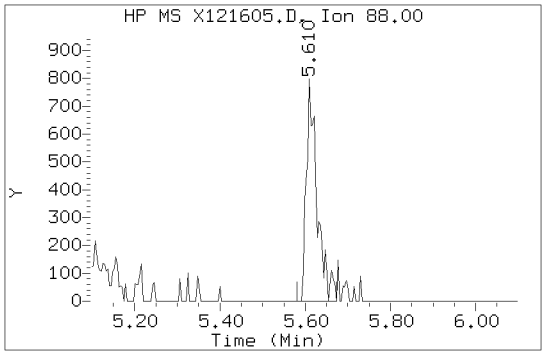
**BEFORE**

MASS
88
AREA
1335
HEIGHT
798
27-Dec-2022
16:03
linh
pham



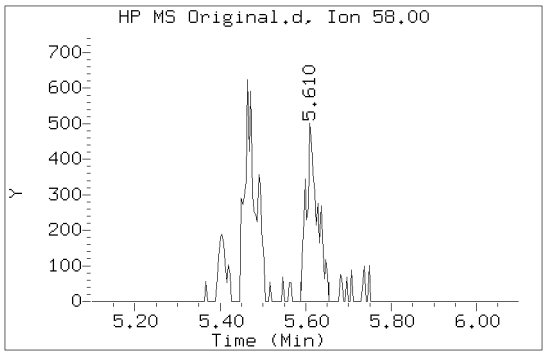

**AFTER**

MASS
88
AREA
1409
HEIGHT
798
27-Dec-2022
16:07
linh
pham



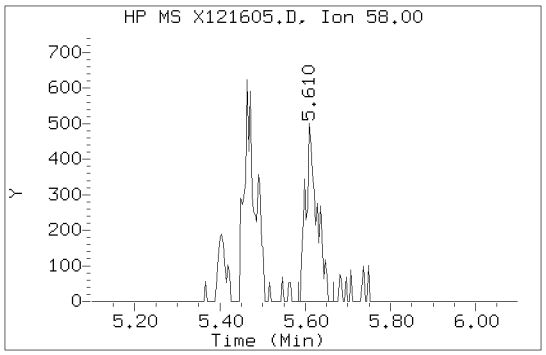

**BEFORE**

MASS
58
AREA
934
HEIGHT
501
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
58
AREA
934
HEIGHT
501
27-Dec-2022
16:07
linh
pham



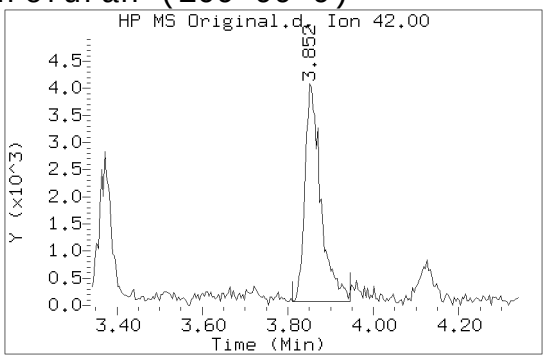
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121605.D
Inj Date : 16-DEC-2022 13:02
InstruID : voa6.i
LabSampID : VSTD002

## Tetrahydrofuran (109-99-9)

Reason Code:

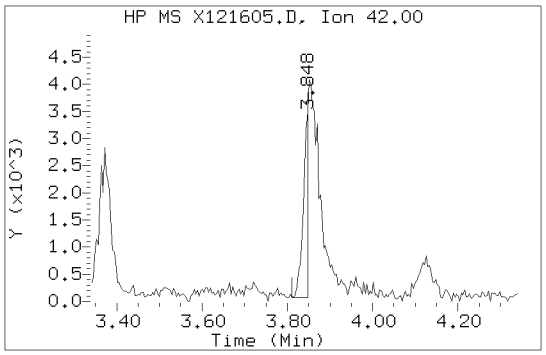
**BEFORE**

MASS
42
AREA
10469
HEIGHT
4012
27-Dec-2022
16:03
linh
pham



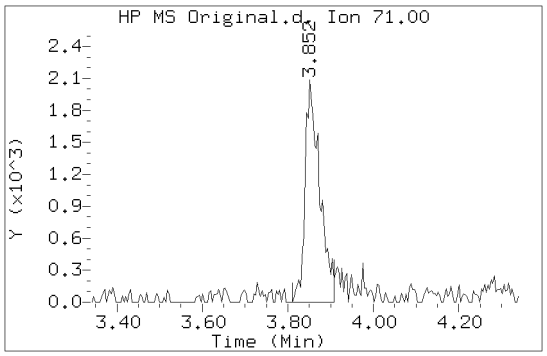

**AFTER**

MASS
42
AREA
2867
HEIGHT
3419
27-Dec-2022
16:07
linh
pham



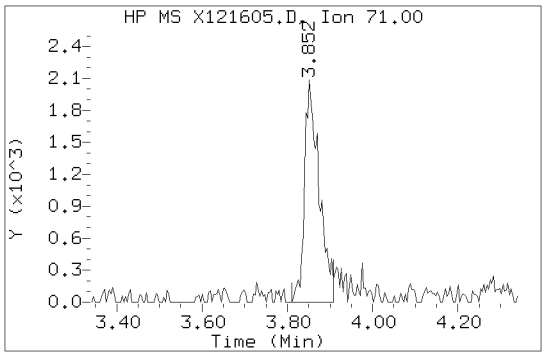

**BEFORE**

MASS
71
AREA
5020
HEIGHT
2086
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
71
AREA
5020
HEIGHT
2086
27-Dec-2022
16:07
linh
pham

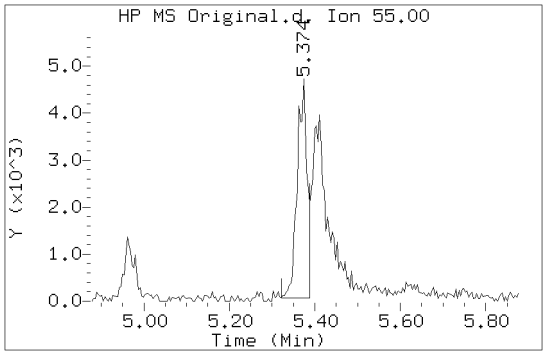



## Methylcyclohexane (108-87-2)

Reason Code:

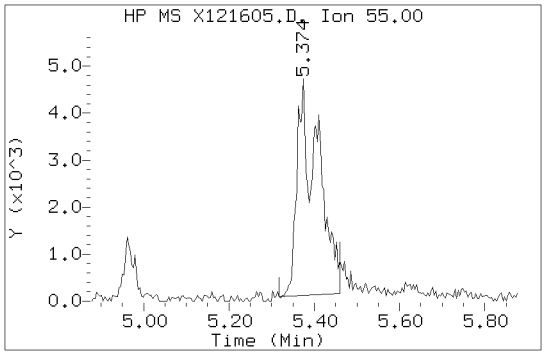
**BEFORE**

MASS
55
AREA
7676
HEIGHT
4656
27-Dec-2022
16:03
linh
pham



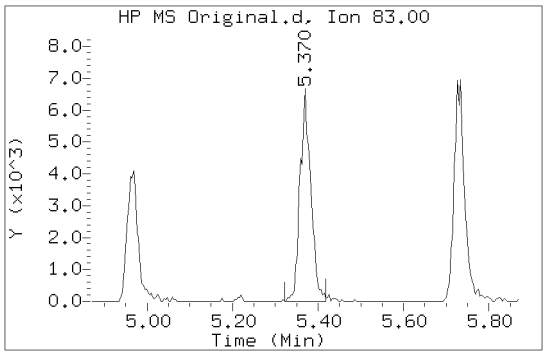

**AFTER**

MASS
55
AREA
16016
HEIGHT
4611
27-Dec-2022
16:07
linh
pham



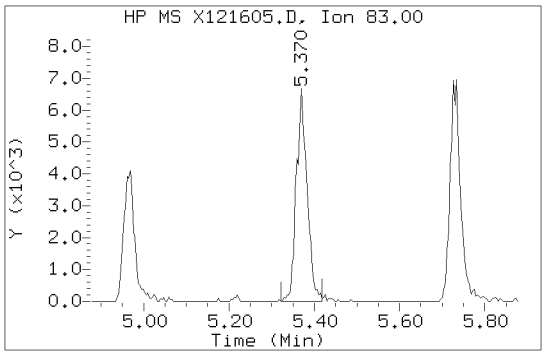

**BEFORE**

MASS
83
AREA
11881
HEIGHT
6672
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
83
AREA
11881
HEIGHT
6672
27-Dec-2022
16:07
linh
pham

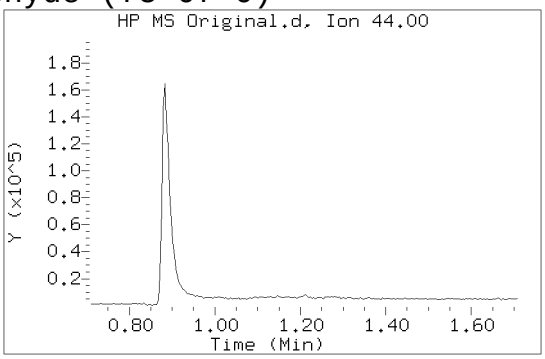


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121605.D
Inj Date : 16-DEC-2022 13:02
InstruID : voa6.i
LabSampID : VSTD002

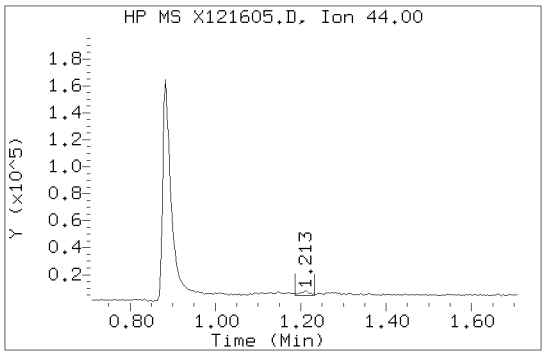
## Acetaldehyde (75-07-0)

Reason Code:

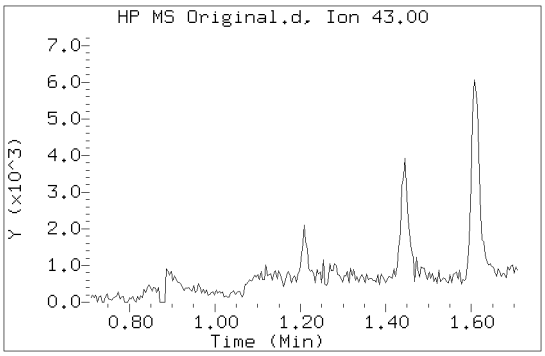
**BEFORE**
MASS
44
AREA
0
HEIGHT
0
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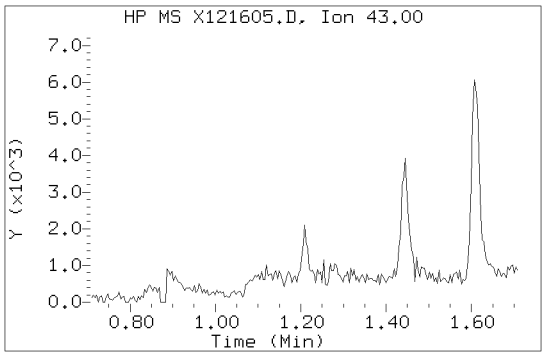

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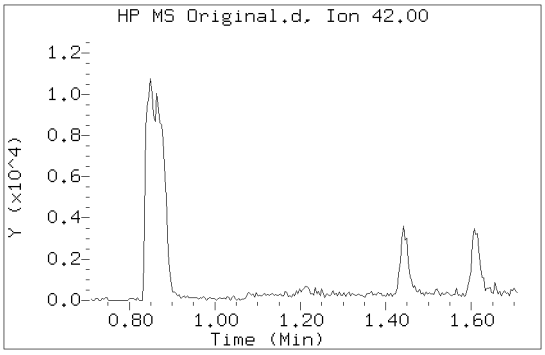

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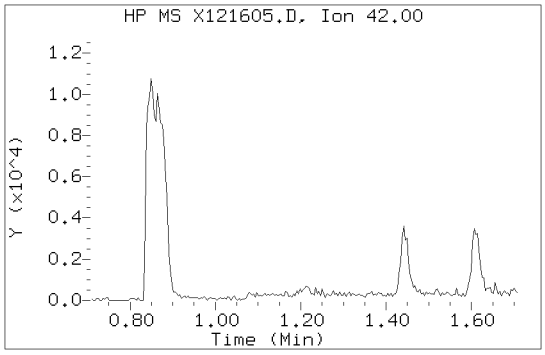

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**AFTER**
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Data File: \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121606.D  Page 1
Report Date: 27-Dec-2022 16:07

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121606.D
Lab Smp Id: VSTD005  Client Smp ID: VSTD005
Inj Date  : 16-DEC-2022 13:23
Operator  : PC  Inst ID: voa6.i
Smp Info  : VSTD005;VSTD005;1;5;
Misc Info : V6;WATER;0;1;
Comment   :
Method    : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\8260W.m
Meth Date : 27-Dec-2022 16:07 voa6.i  Quant Type: ISTD
Cal Date  : 16-DEC-2022 13:02  Cal File: X121605.D
Als bottle: 7  Calibration Sample, Level: 5
Dil Factor: 1.00000
Integrator: HP RTE  Compound Sublist: 08260V6.sub
Target Version:  4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

| Name | Value | Description |
|---|---|---|
| DF | 1.000 | Dilution Factor |
| Uf | 5.000 | ng unit correction factor |
| Vo | 5.000 | sample purged |
| Cpnd Variable | | Local Compound Variable |

| Compounds | QUANT SIG MASS | RT | EXP RT | REL RT | RESPONSE | AMOUNTS CAL-AMT ( ug/l) | ON-COL ( ug/l) |
|---|---|---|---|---|---|---|---|
| * 1 Pentafluorobenzene | 168 | 4.178 | 4.178 | (1.000) | 450664 | 50.0000 | |
| 135 1,4-Dioxane | 88 | 5.602 | 5.602 | (1.341) | 4197 | 100.000 | 101.88(M) |
| 140 1,3-Butadiene | 54 | 1.164 | 1.164 | (0.279) | 14283 | 5.00000 | 4.61 |
| 25 Methacrylonitrile | 41 | 3.840 | 3.840 | (0.919) | 15701 | 5.00000 | 4.92(M) |
| 12 Isobutyl Alcohol | 43 | 4.680 | 4.680 | (1.120) | 51624 | 100.000 | 101.84 |
| 13 Acetonitrile | 39 | 2.198 | 2.198 | (0.526) | 19635 | 50.0000 | 47.87 |
| 14 Allyl Chloride | 41 | 2.198 | 2.198 | (0.526) | 37993 | 5.00000 | 4.86 |
| 4 Propionitrile | 54 | 3.660 | 3.660 | (0.876) | 23049 | 50.0000 | 50.12 |
| 136 n-Hexane | 57 | 2.772 | 2.772 | (0.664) | 14618 | 5.00000 | 4.50 |
| 72 trans-1,4-Dichloro-2-butene | 53 | 8.901 | 8.901 | (1.161) | 6648 | 5.00000 | 4.70(M) |
| 194 Acetaldehyde | 44 | 1.209 | 1.209 | (0.289) | 6161 | 20.0000 | 0.80(M) |
| 23 Chloroprene | 53 | 1.771 | 1.771 | (0.424) | 7154 | 5.00000 | 4.66(M) |
| 145 alpha-Methylstyrene | 118 | 9.261 | 9.261 | (0.958) | 37831 | 5.00000 | 4.79 |
| 200 Dimethyl Disulfide | 94 | 6.198 | 6.198 | (0.808) | 40144 | 5.00000 | 4.53 |
| 139 Diethyl ether | 59 | 1.756 | 1.756 | (0.420) | 15119 | 5.00000 | 5.02 |
| 130 Ethyl Acetate | 43 | 3.660 | 3.660 | (0.876) | 18020 | 5.00000 | 5.12(M) |
| 40 Methyl Methacrylate | 41 | 5.617 | 5.617 | (1.345) | 15119 | 5.00000 | 4.92 |
| 49 Ethyl Methacrylate | 69 | 6.715 | 6.715 | (1.353) | 13801 | 5.00000 | 4.27 |
| 132 n-Butanol | 56 | 5.287 | 5.287 | (1.266) | 4891 | 100.000 | 125.41(M) |
| 142 Tetrahydrofuran | 42 | 3.848 | 3.848 | (0.921) | 7598 | 10.0000 | 10.82(M) |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 150 | Allyl alcohol | 57 | 2.772 | 2.772 (0.664) | 14618 | 100.000 | 83.50 |
| 166 | 1,2,3-Trimethylbenzene | 105 | 9.733 | 9.733 (1.007) | 80329 | 5.00000 | 4.68 |

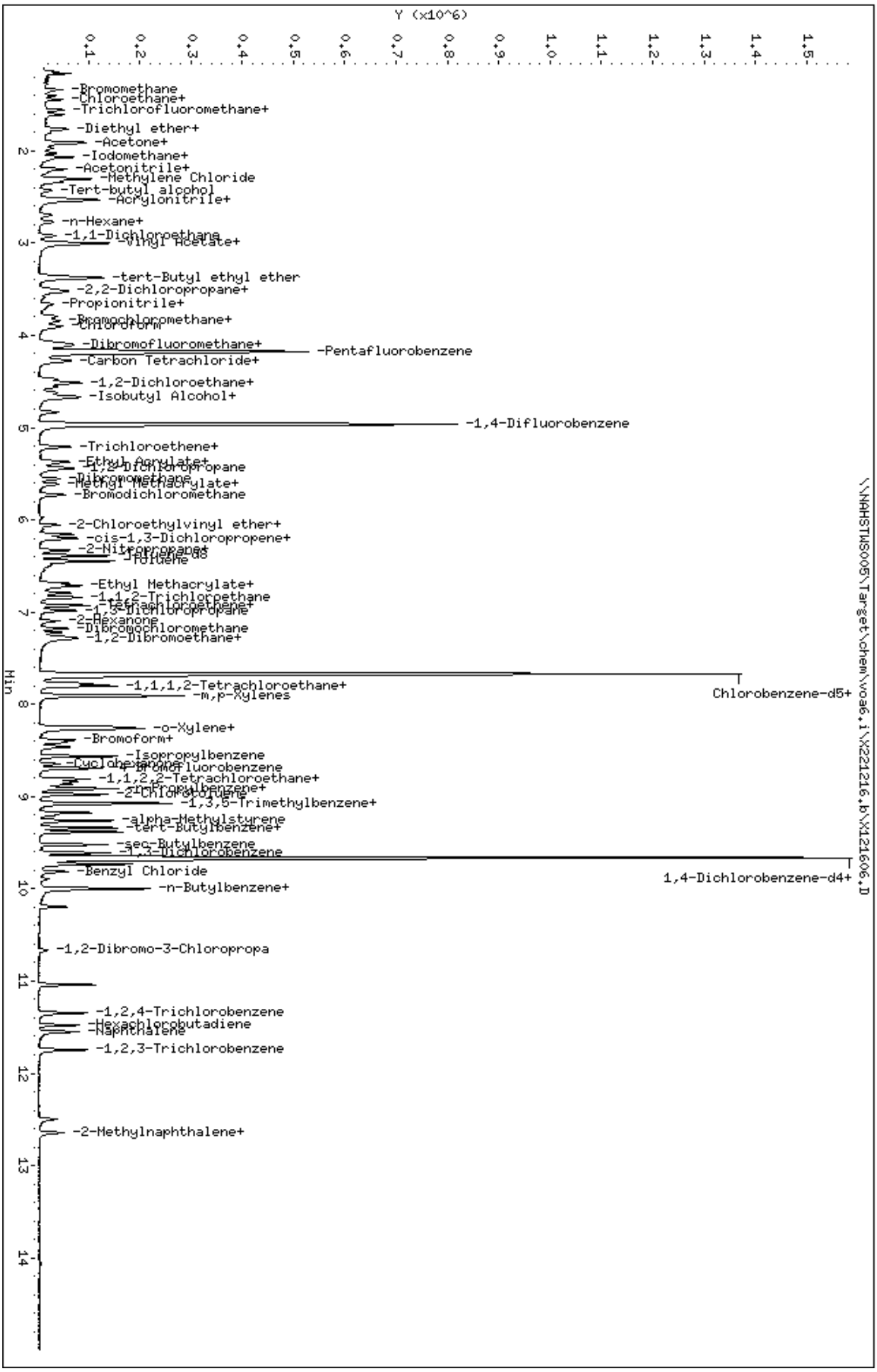
| | Compounds | QUANT SIG MASS | RT | EXP RT | REL RT | RESPONSE | AMOUNTS CAL-AMT ( ug/l) | ON-COL ( ug/l) |
|---|---|---|---|---|---|---|---|---|
| | 131 Methyl Acrylate | 55 | 3.705 | 3.705 | (0.887) | 14950 | 5.00000 | 4.88(M) |
| | 162 Butyl acrylate | 55 | 8.260 | 8.260 | (1.077) | 38320 | 5.00000 | 4.48 |
| | 2 Dichlorodifluoromethane | 85 | 0.972 | 0.972 | (0.233) | 15008 | 5.00000 | 5.11 |
| | 3 Chloromethane | 50 | 1.077 | 1.077 | (0.258) | 19623 | 5.00000 | 6.81 |
| | 5 Vinyl Chloride | 62 | 1.141 | 1.141 | (0.273) | 19002 | 5.00000 | 4.82 |
| | 6 Bromomethane | 94 | 1.336 | 1.336 | (0.320) | 15112 | 5.00000 | 6.66 |
| | 7 Chloroethane | 64 | 1.400 | 1.400 | (0.335) | 14167 | 5.00000 | 5.17 |
| | 8 Trichlorofluoromethane | 101 | 1.557 | 1.557 | (0.373) | 26620 | 5.00000 | 4.83 |
| | 9 Acrolein | 56 | 1.441 | 1.441 | (0.345) | 2699 | 10.0000 | 11.33 |
| | 10 Acetone | 43 | 1.973 | 1.973 | (0.472) | 17632 | 10.0000 | 13.91 |
| | 11 1,1-Dichloroethene | 96 | 1.910 | 1.910 | (0.457) | 16850 | 5.00000 | 4.92 |
| | 15 Iodomethane | 142 | 2.026 | 2.026 | (0.485) | 26708 | 10.0000 | 9.27 |
| | 16 Acrylonitrile | 53 | 2.551 | 2.551 | (0.611) | 11047 | 10.0000 | 9.52 |
| | 17 Methylene Chloride | 84 | 2.303 | 2.303 | (0.551) | 22932 | 5.00000 | 4.88(M) |
| | 18 Methyl tert-butyl ether | 73 | 2.532 | 2.532 | (0.606) | 56330 | 5.00000 | 5.03 |
| | 19 Carbon Disulfide | 76 | 2.067 | 2.067 | (0.495) | 85418 | 10.0000 | 9.54 |
| | 20 trans-1,2-Dichloroethene | 96 | 2.532 | 2.532 | (0.606) | 19006 | 5.00000 | 4.96 |
| | 21 Vinyl Acetate | 43 | 3.000 | 3.000 | (0.718) | 101238 | 10.0000 | 10.30 |
| | 22 1,1-Dichloroethane | 63 | 2.922 | 2.922 | (0.699) | 33810 | 5.00000 | 5.03 |
| | 24 2-Butanone | 43 | 3.600 | 3.600 | (0.862) | 11771 | 10.0000 | 11.53(H) |
| | 26 2,2-Dichloropropane | 77 | 3.507 | 3.507 | (0.839) | 27881 | 5.00000 | 4.88 |
| | 27 cis-1,2-Dichloroethene | 96 | 3.533 | 3.533 | (0.846) | 22734 | 5.00000 | 4.88 |
| | 28 Chloroform | 83 | 3.904 | 3.904 | (0.935) | 38156 | 5.00000 | 5.06 |
| | 29 Bromochloromethane | 128 | 3.799 | 3.799 | (0.909) | 13213 | 5.00000 | 5.18 |
| $ | 30 Dibromofluoromethane | 113 | 4.103 | 4.103 | (0.982) | 24255 | 5.00000 | 5.45 |
| | 31 1,1,1-Trichloroethane | 97 | 4.080 | 4.080 | (0.977) | 29017 | 5.00000 | 4.85 |
| | 32 1,1-Dichloropropene | 75 | 4.279 | 4.279 | (0.862) | 23845 | 5.00000 | 4.90(M) |
| | 33 1,2-Dichloroethane | 62 | 4.556 | 4.556 | (0.918) | 28173 | 5.00000 | 5.01 |
| | 34 Carbon Tetrachloride | 117 | 4.264 | 4.264 | (0.859) | 24171 | 5.00000 | 4.65 |
| $ | 35 1,2-Dichloroethane-d4 | 65 | 4.477 | 4.477 | (1.072) | 24938 | 5.00000 | 5.70(M) |
| * | 36 1,4-Difluorobenzene | 114 | 4.965 | 4.965 | (1.000) | 685413 | 50.0000 | |
| | 37 Benzene | 78 | 4.511 | 4.511 | (0.909) | 81981 | 5.00000 | 5.00 |
| | 38 Trichloroethene | 130 | 5.208 | 5.208 | (1.049) | 22693 | 5.00000 | 4.88 |
| | 39 Bromodichloromethane | 83 | 5.729 | 5.729 | (1.154) | 29358 | 5.00000 | 4.77 |
| | 41 2-Chloroethylvinyl ether | 63 | 6.056 | 6.056 | (1.220) | 17700 | 10.0000 | 10.12 |
| | 42 1,2-Dichloropropane | 63 | 5.437 | 5.437 | (1.095) | 21679 | 5.00000 | 4.97 |
| | 44 Dibromomethane | 93 | 5.557 | 5.557 | (1.119) | 14449 | 5.00000 | 4.88 |
| | 45 4-Methyl-2-Pentanone | 43 | 6.329 | 6.329 | (0.825) | 34912 | 10.0000 | 9.98 |
| | 46 cis-1,3-Dichloropropene | 75 | 6.161 | 6.161 | (1.241) | 35507 | 5.00000 | 4.92 |
| * | 47 Chlorobenzene-d5 | 117 | 7.668 | 7.668 | (1.000) | 654176 | 50.0000 | |
| $ | 48 Toluene-d8 | 98 | 6.389 | 6.389 | (0.833) | 81640 | 5.00000 | 5.05 |
| | 50 Toluene | 91 | 6.449 | 6.449 | (0.841) | 89594 | 5.00000 | 4.95 |
| | 51 trans-1,3-Dichloropropene | 75 | 6.689 | 6.689 | (1.347) | 28399 | 5.00000 | 4.74(M) |
| | 52 2-Hexanone | 43 | 7.094 | 7.094 | (0.925) | 24056 | 10.0000 | 10.11 |
| | 53 1,1,2-Trichloroethane | 83 | 6.839 | 6.839 | (0.892) | 18638 | 5.00000 | 5.13 |
| | 54 1,3-Dichloropropane | 76 | 6.985 | 6.985 | (0.911) | 35759 | 5.00000 | 5.00 |
| | 55 Dibromochloromethane | 129 | 7.176 | 7.176 | (0.936) | 25357 | 5.00000 | 4.84 |
| | 56 Tetrachloroethene | 164 | 6.929 | 6.929 | (0.904) | 17219 | 5.00000 | 4.60 |
| | 57 1,2-Dibromoethane | 107 | 7.263 | 7.263 | (0.947) | 23172 | 5.00000 | 5.10 |
| | 58 1-Chlorohexane | 55 | 7.698 | 7.698 | (1.550) | 15210 | 5.00000 | 4.59(MH) |
| | 59 Chlorobenzene | 112 | 7.694 | 7.694 | (1.003) | 62744 | 5.00000 | 4.89 |
| | 60 1,1,1,2-Tetrachloroethane | 131 | 7.776 | 7.776 | (1.014) | 22632 | 5.00000 | 4.74 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 61 Ethylbenzene | 106 | 7.802 | 7.802 (1.018) | 29550 | 5.00000 | 4.89 |
| 62 m,p-Xylenes | 106 | 7.907 | 7.907 (1.031) | 73283 | 10.0000 | 9.40 |

| | Compounds | QUANT SIG MASS | RT | EXP RT | REL RT | RESPONSE | AMOUNTS CAL-AMT ( ug/l) | ON-COL ( ug/l) |
|---|---|---|---|---|---|---|---|---|
| 63 | o-Xylene | 106 | 8.245 | 8.245 | (1.075) | 37189 | 5.00000 | 4.83 |
| 64 | Styrene | 104 | 8.267 | 8.267 | (1.078) | 62411 | 5.00000 | 4.84 |
| 66 | Bromoform | 173 | 8.414 | 8.414 | (1.097) | 16801 | 5.00000 | 4.63 |
| 67 | Isopropylbenzene | 105 | 8.563 | 8.563 | (1.117) | 85440 | 5.00000 | 4.86 |
| 68 | 1,1,2,2-Tetrachloroethane | 83 | 8.841 | 8.841 | (0.915) | 29807 | 5.00000 | 5.24 |
| $ 69 | 4-Bromofluorobenzene | 95 | 8.695 | 8.695 | (1.134) | 32501 | 5.00000 | 5.43 |
| * 70 | 1,4-Dichlorobenzene-d4 | 152 | 9.662 | 9.662 | (1.000) | 356340 | 50.0000 | |
| 71 | 1,2,3-Trichloropropane | 75 | 8.867 | 8.867 | (0.918) | 20685 | 5.00000 | 5.21(M) |
| 73 | n-Propylbenzene | 91 | 8.916 | 8.916 | (0.923) | 97603 | 5.00000 | 4.94 |
| 74 | Bromobenzene | 156 | 8.811 | 8.811 | (0.912) | 28887 | 5.00000 | 4.94 |
| 75 | 1,3,5-Trimethylbenzene | 105 | 9.070 | 9.070 | (0.939) | 72501 | 5.00000 | 4.97 |
| 76 | 2-Chlorotoluene | 91 | 8.976 | 8.976 | (0.929) | 65973 | 5.00000 | 5.09 |
| 77 | 4-Chlorotoluene | 91 | 9.077 | 9.077 | (0.939) | 75073 | 5.00000 | 5.08 |
| 78 | tert-Butylbenzene | 119 | 9.336 | 9.336 | (0.966) | 59375 | 5.00000 | 4.97 |
| 79 | 1,2,4-Trimethylbenzene | 105 | 9.381 | 9.381 | (0.971) | 75723 | 5.00000 | 4.93 |
| 81 | sec-Butylbenzene | 105 | 9.523 | 9.523 | (0.986) | 77577 | 5.00000 | 4.88 |
| 82 | p-Isopropyltoluene | 119 | 9.651 | 9.651 | (0.999) | 69666 | 5.00000 | 4.89 |
| 83 | 1,3-Dichlorobenzene | 146 | 9.609 | 9.609 | (0.995) | 49954 | 5.00000 | 5.14 |
| 84 | 1,4-Dichlorobenzene | 146 | 9.684 | 9.684 | (1.002) | 52655 | 5.00000 | 4.97 |
| 86 | Benzyl Chloride | 91 | 9.816 | 9.816 | (1.280) | 35254 | 5.00000 | 5.95 |
| 87 | n-Butylbenzene | 91 | 9.999 | 9.999 | (1.035) | 54831 | 5.00000 | 5.63 |
| 88 | 1,2-Dichlorobenzene | 146 | 9.995 | 9.995 | (1.035) | 50895 | 5.00000 | 5.09 |
| 89 | 1,2-Dibromo-3-Chloropropane | 155 | 10.670 | 10.670 | (1.104) | 4911 | 5.00000 | 5.49 |
| 90 | 1,2,4-Trichlorobenzene | 180 | 11.345 | 11.345 | (1.174) | 31873 | 5.00000 | 5.05 |
| 91 | Hexachlorobutadiene | 225 | 11.480 | 11.480 | (1.188) | 13454 | 5.00000 | 4.81 |
| 92 | Naphthalene | 128 | 11.551 | 11.551 | (1.196) | 72748 | 5.00000 | 5.06 |
| 93 | 1,2,3-Trichlorobenzene | 180 | 11.746 | 11.746 | (1.216) | 30274 | 5.00000 | 5.01 |
| M 94 | 1,2-Dichloroethylene (total) | 96 | | | | 41740 | 10.0000 | |
| M 95 | Xylenes (total) | 106 | | | | 110472 | 15.0000 | |
| 141 | Cyclohexane | 56 | 4.118 | 4.118 | (0.986) | 19859 | 5.00000 | 5.52(H) |
| 138 | Freon TF | 101 | 1.913 | 1.913 | (0.458) | 14845 | 5.00000 | 4.48 |
| 147 | Methylcyclohexane | 55 | 5.388 | 5.388 | (1.085) | 38650 | 5.00000 | 4.60(M) |
| 146 | Methyl Acetate | 43 | 2.236 | 2.236 | (0.535) | 8968 | 5.00000 | 4.42 |
| 148 | Tert-Butyl alcohol | 59 | 2.431 | 2.431 | (0.582) | 30525 | 100.000 | 97.81 |
| 149 | Isopropyl Alcohol | 45 | 2.097 | 2.097 | (0.502) | 16518 | 100.000 | 101.35(T) |

## QC Flag Legend

T - Target compound detected outside RT window.
M - Compound response manually integrated.
H - Operator selected an alternate compound hit.




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Sample Info: VSTD005;VSTD005;1;5;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

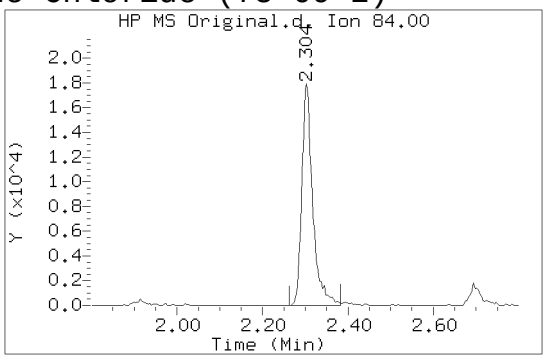
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InstruID : voa6.i
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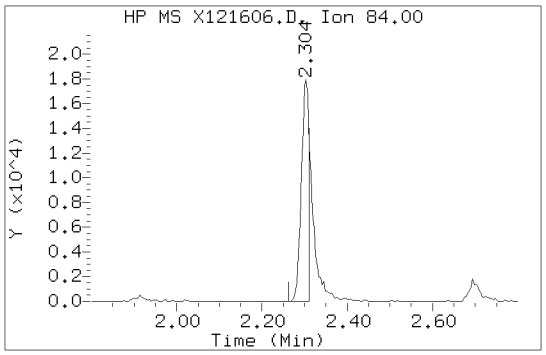
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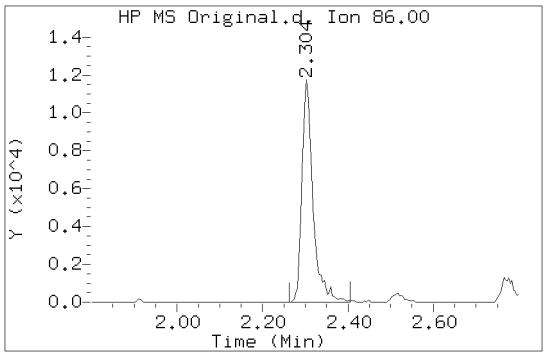
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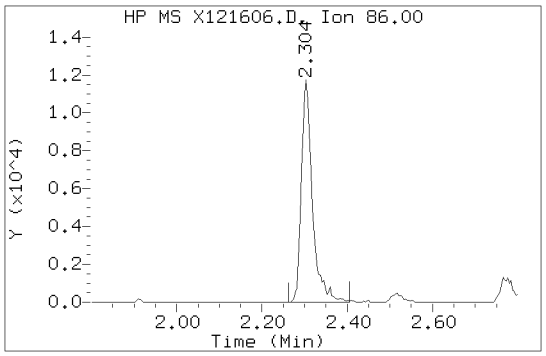

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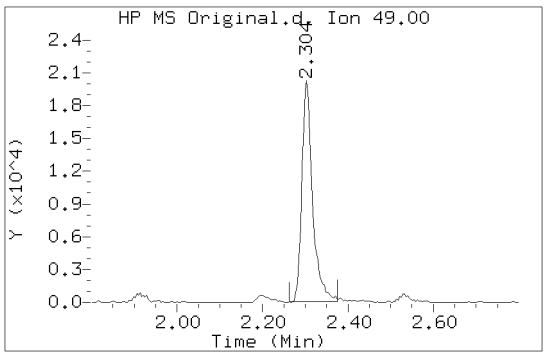

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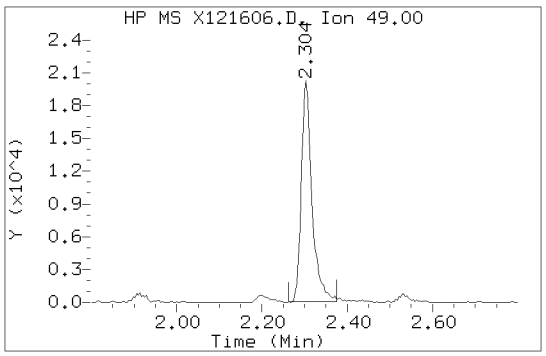

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BEFORE
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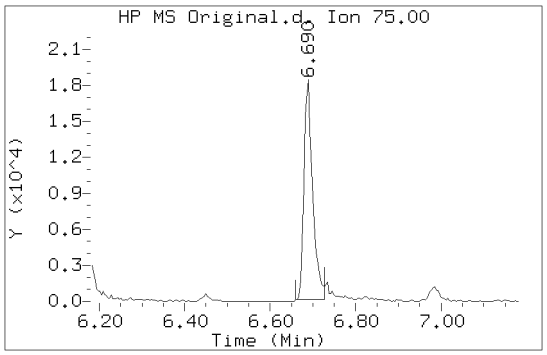

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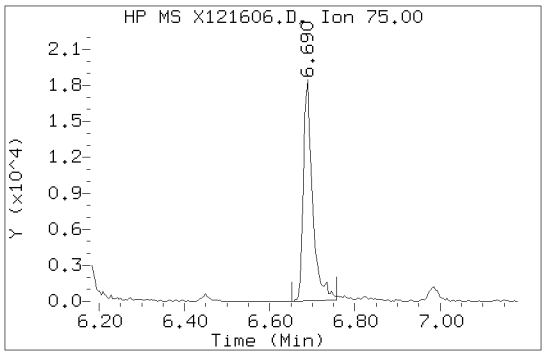

## trans-1,3-Dichloropropene (10061-02-6)

Reason Code:

BEFORE
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27-Dec-2022
16:03
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AFTER
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27-Dec-2022
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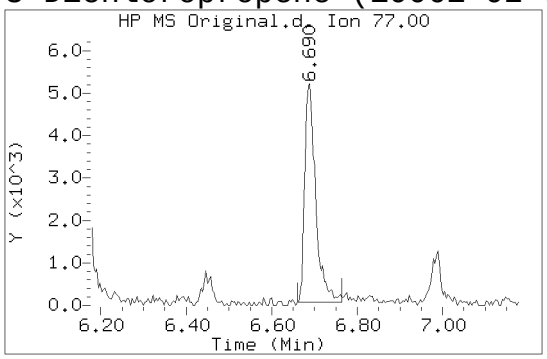


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Inj Date : 16-DEC-2022 13:23
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LabSampID : VSTD005

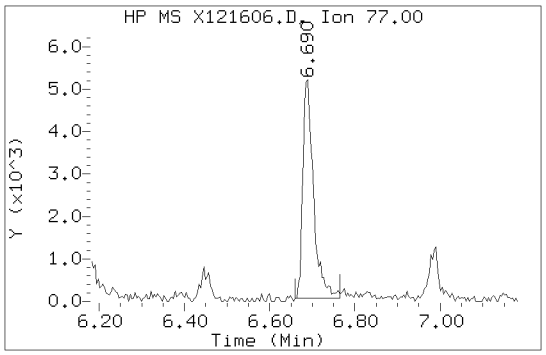
## trans-1,3-Dichloropropene (10061-02-6)

Reason Code:

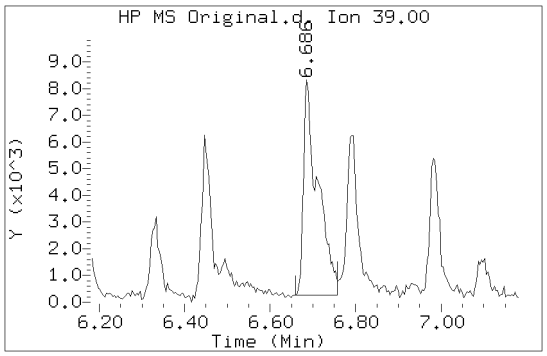
BEFORE
MASS
77
AREA
9244
HEIGHT
5154
27-Dec-2022
16:03
linh
pham



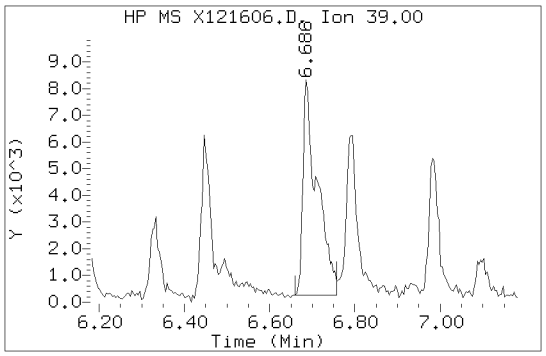

AFTER
MASS
77
AREA
9244
HEIGHT
5154
27-Dec-2022
16:07
linh
pham




BEFORE
MASS
39
AREA
19092
HEIGHT
8065
27-Dec-2022
16:03
linh
pham



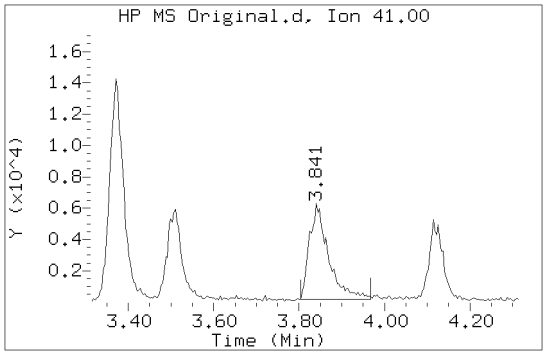

AFTER
MASS
39
AREA
19092
HEIGHT
8065
27-Dec-2022
16:07
linh
pham



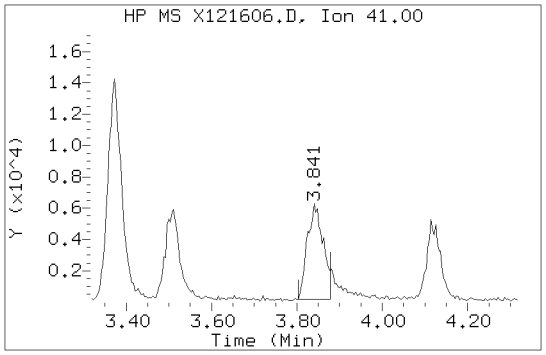

## Methacrylonitrile (126-98-7)

Reason Code:

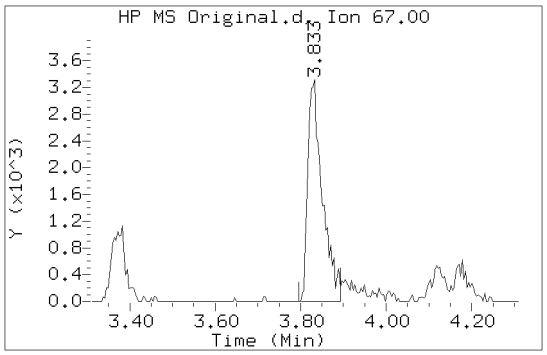
BEFORE
MASS
41
AREA
18790
HEIGHT
6109
27-Dec-2022
16:03
linh
pham



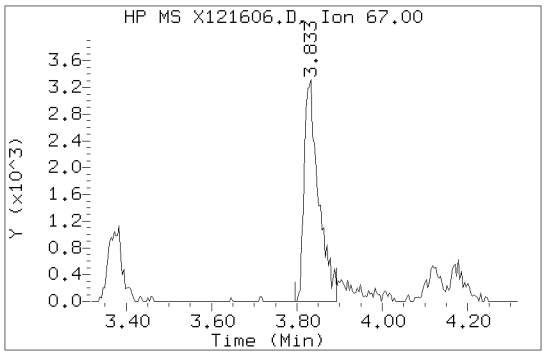

AFTER
MASS
41
AREA
15701
HEIGHT
6109
27-Dec-2022
16:07
linh
pham




BEFORE
MASS
67
AREA
7866
HEIGHT
3315
27-Dec-2022
16:03
linh
pham




AFTER
MASS
67
AREA
7866
HEIGHT
3315
27-Dec-2022
16:07
linh
pham



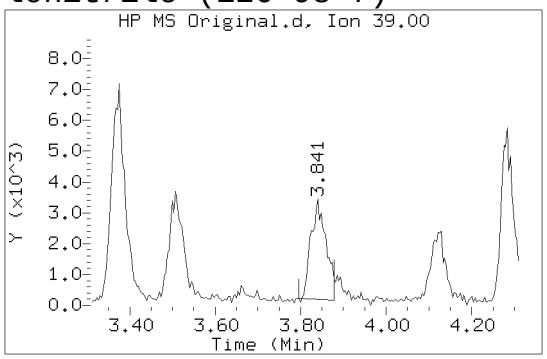
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121606.D
Inj Date : 16-DEC-2022 13:23
InstruID : voa6.i
LabSampID : VSTD005

## Methacrylonitrile (126-98-7)

Reason Code:

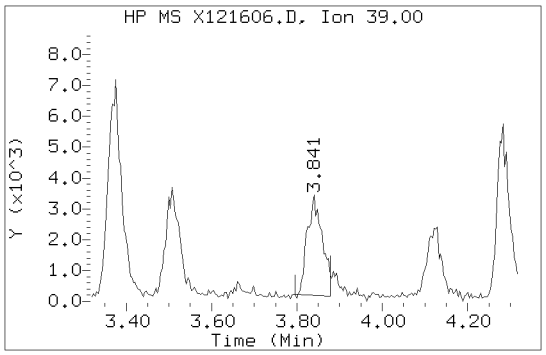
**BEFORE**

MASS
39
AREA
7951
HEIGHT
3252
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
39
AREA
7951
HEIGHT
3252
27-Dec-2022
16:07
linh
pham

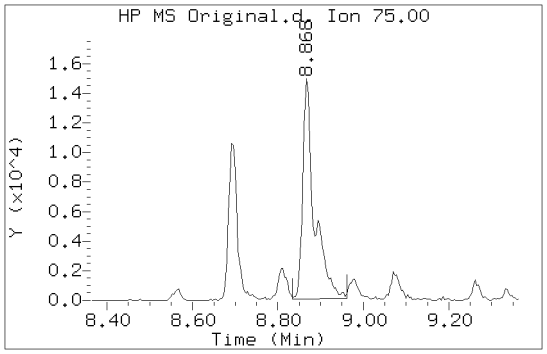



## 1,2,3-Trichloropropane (96-18-4)

Reason Code:

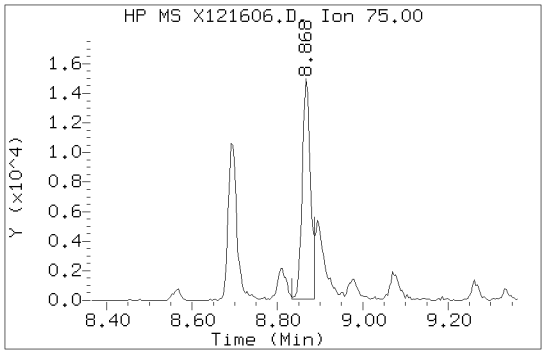
**BEFORE**

MASS
75
AREA
28905
HEIGHT
14911
27-Dec-2022
16:03
linh
pham



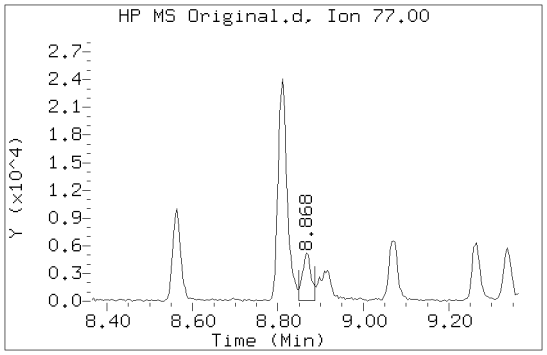

**AFTER**

MASS
75
AREA
20685
HEIGHT
14911
27-Dec-2022
16:07
linh
pham



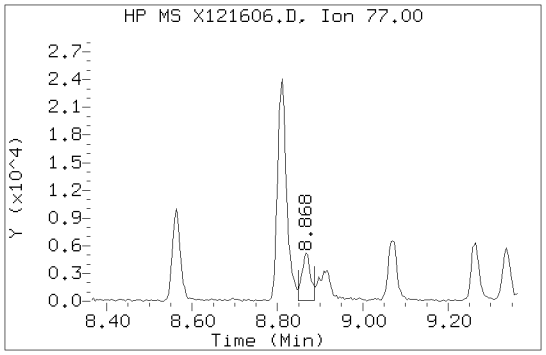

**BEFORE**

MASS
77
AREA
7524
HEIGHT
5143
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
77
AREA
7524
HEIGHT
5143
27-Dec-2022
16:07
linh
pham

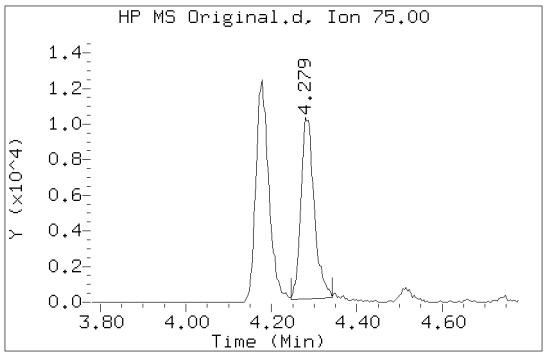



## 1,1-Dichloropropene (563-58-6)

Reason Code:

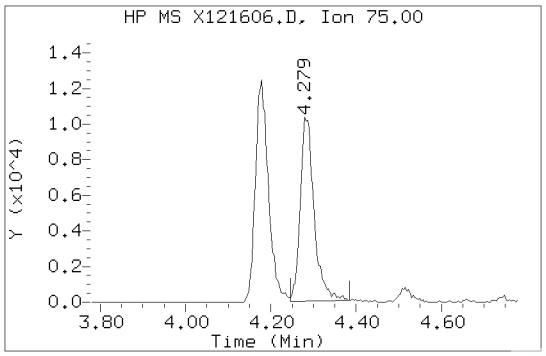
**BEFORE**

MASS
75
AREA
22411
HEIGHT
10201
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
75
AREA
23845
HEIGHT
10354
27-Dec-2022
16:07
linh
pham



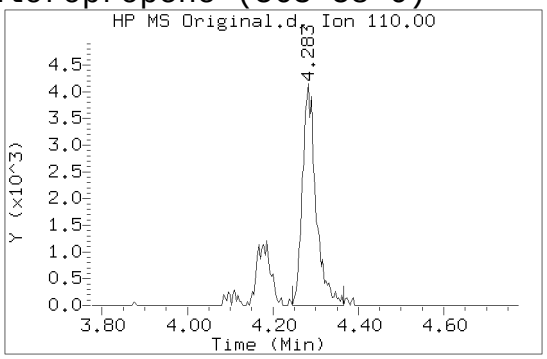
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121606.D
Inj Date : 16-DEC-2022 13:23
InstruID : voa6.i
LabSampID : VSTD005

## 1,1-Dichloropropene (563-58-6)

Reason Code:

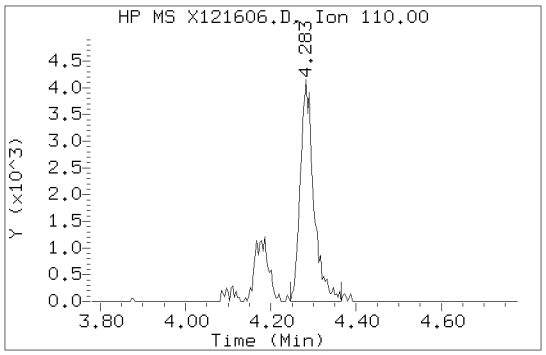
**BEFORE**

MASS
110
AREA
9244
HEIGHT
4151
27-Dec-2022
16:03
linh
pham



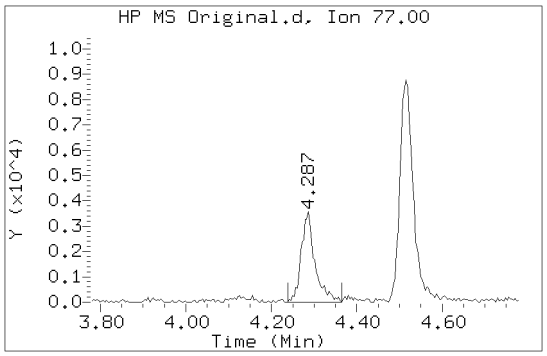

**AFTER**

MASS
110
AREA
9244
HEIGHT
4151
27-Dec-2022
16:07
linh
pham



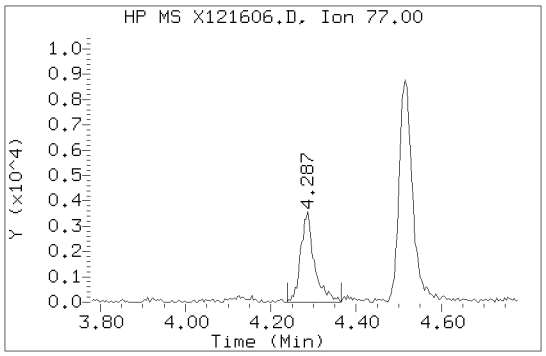

**BEFORE**

MASS
77
AREA
8083
HEIGHT
3567
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
77
AREA
8083
HEIGHT
3567
27-Dec-2022
16:07
linh
pham

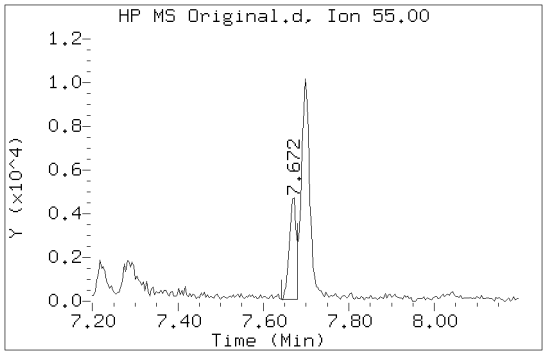



## 1-Chlorohexane (544-10-5)

Reason Code:

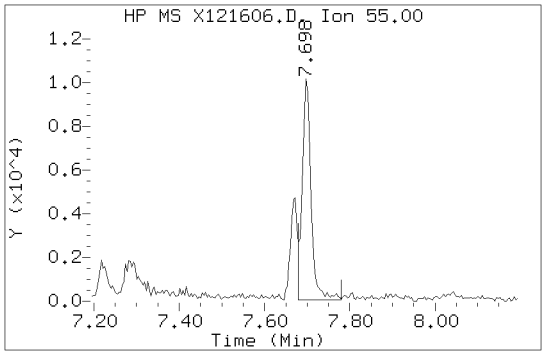
**BEFORE**

MASS
55
AREA
5371
HEIGHT
4660
27-Dec-2022
16:03
linh
pham



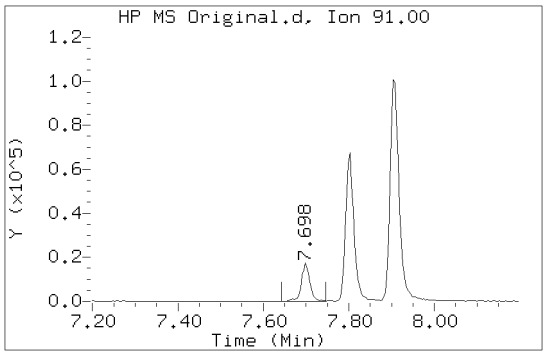

**AFTER**

MASS
55
AREA
15210
HEIGHT
10126
27-Dec-2022
16:07
linh
pham



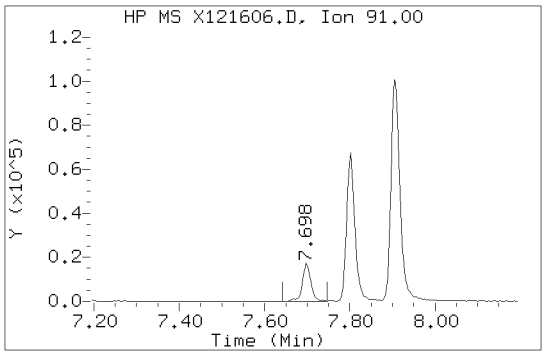

**BEFORE**

MASS
91
AREA
24578
HEIGHT
17336
27-Dec-2022
16:03
linh
pham




**AFTER**

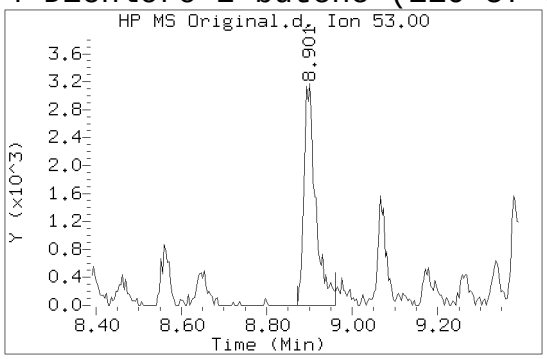
MASS
91
AREA
24578
HEIGHT
17336
27-Dec-2022
16:07
linh
pham



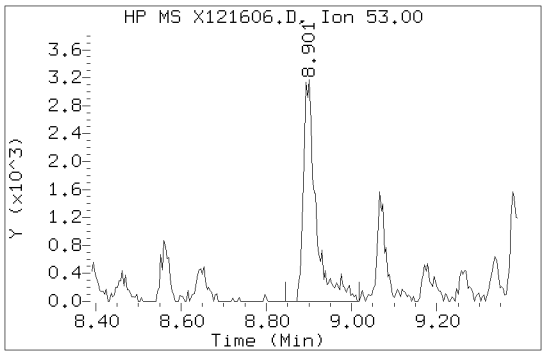
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121606.D
Inj Date : 16-DEC-2022 13:23
InstruID : voa6.i
LabSampID : VSTD005

## trans-1,4-Dichloro-2-butene (110-57-6)

**BEFORE**
MASS
53
AREA
6122
HEIGHT
3172
27-Dec-2022
16:03
linh
pham

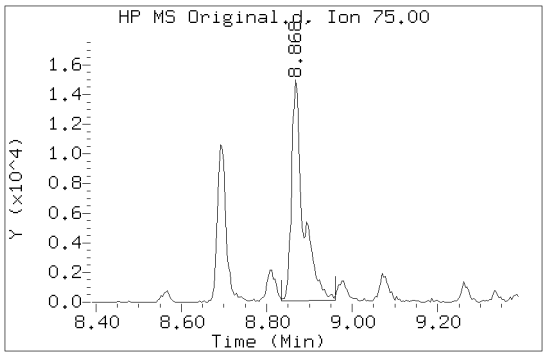



**AFTER**
MASS
53
AREA
6648
HEIGHT
3172
27-Dec-2022
16:07
linh
pham

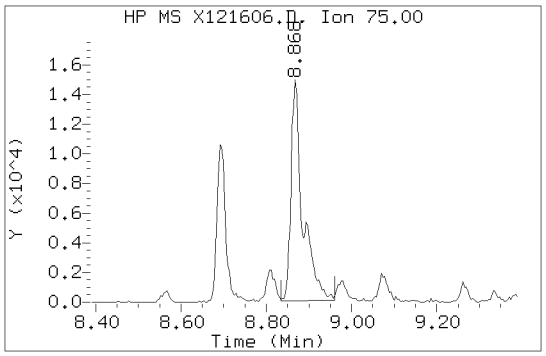



Reason Code:

**BEFORE**
MASS
75
AREA
28905
HEIGHT
14911
27-Dec-2022
16:03
linh
pham



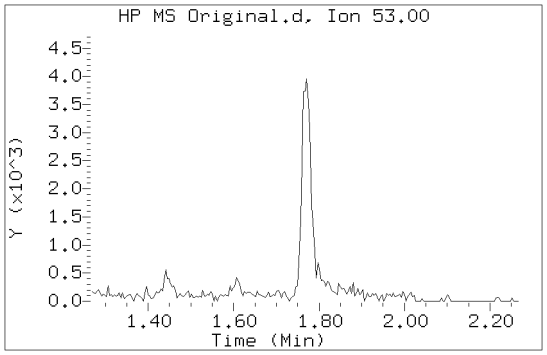

**AFTER**
MASS
75
AREA
28905
HEIGHT
14911
27-Dec-2022
16:07
linh
pham



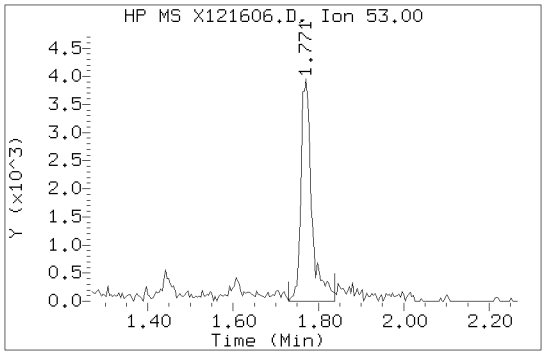

Reason Code:

## Chloroprene (126-99-8)

**BEFORE**
MASS
53
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham

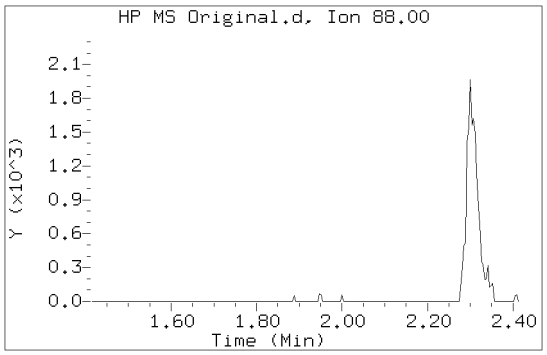



**AFTER**
MASS
53
AREA
7154
HEIGHT
3955
27-Dec-2022
16:07
linh
pham

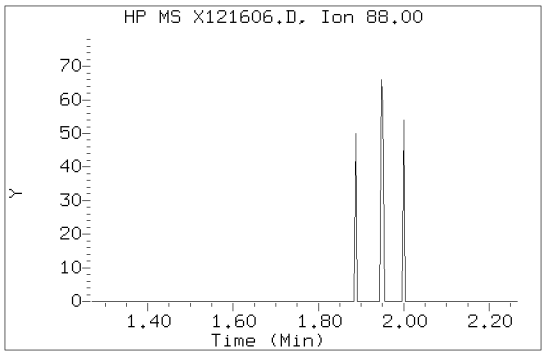



Reason Code:

**BEFORE**
MASS
88
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham




**AFTER**
MASS
88
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham



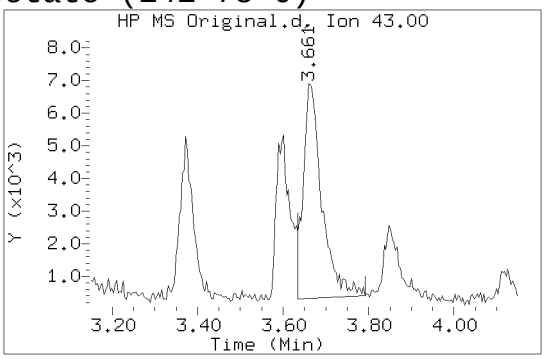
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Inj Date : 16-DEC-2022 13:23
InstruID : voa6.i
LabSampID : VSTD005

## Ethyl Acetate (141-78-6)

Reason Code:

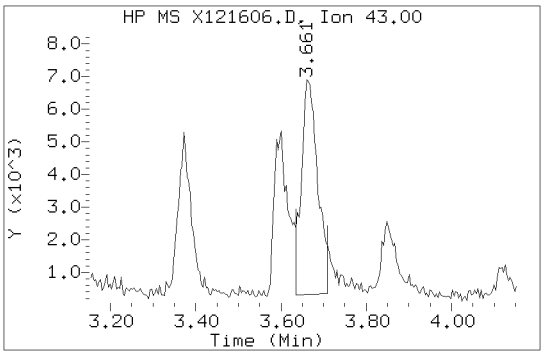
**BEFORE**

MASS
43
AREA
20113
HEIGHT
6576
27-Dec-2022
16:03
linh
pham



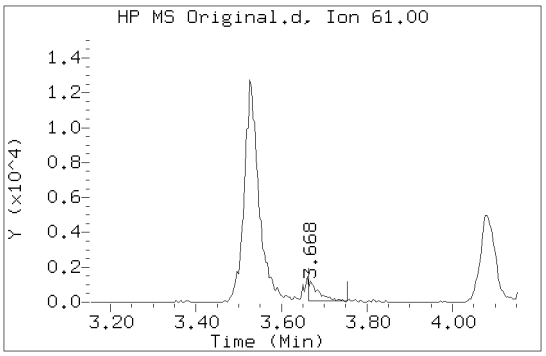

**AFTER**

MASS
43
AREA
18020
HEIGHT
6576
27-Dec-2022
16:07
linh
pham



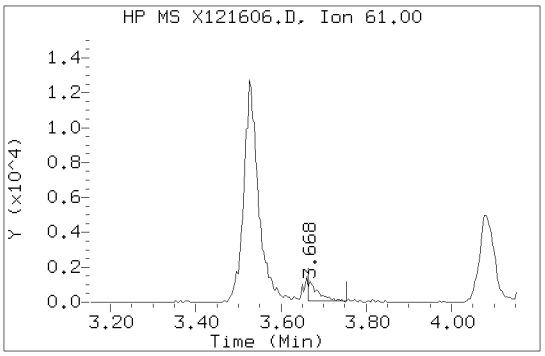

**BEFORE**

MASS
61
AREA
1766
HEIGHT
1155
27-Dec-2022
16:03
linh
pham



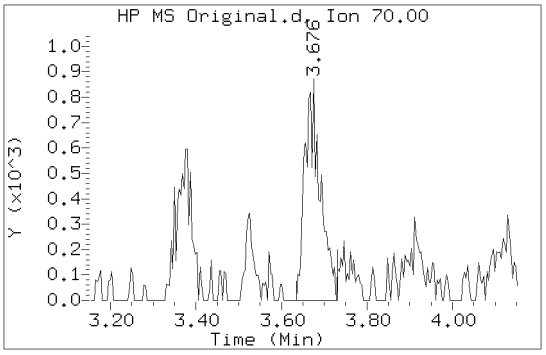

**AFTER**

MASS
61
AREA
1766
HEIGHT
1155
27-Dec-2022
16:07
linh
pham



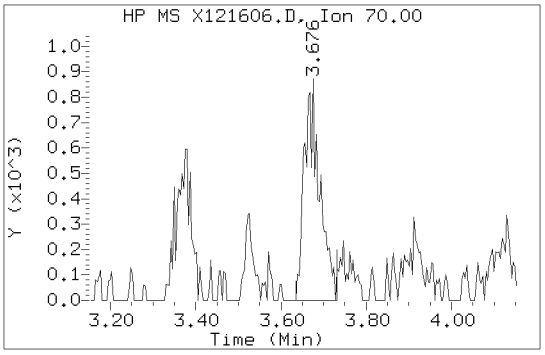

**BEFORE**

MASS
70
AREA
2205
HEIGHT
873
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
70
AREA
2205
HEIGHT
873
27-Dec-2022
16:07
linh
pham

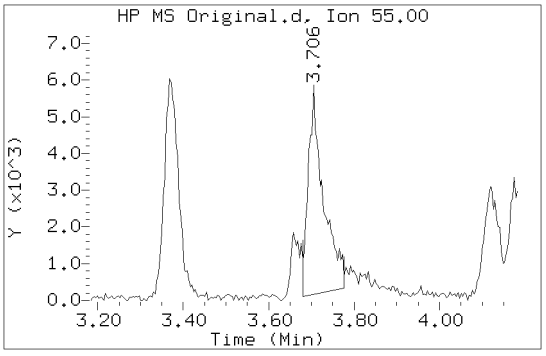



## Methyl Acrylate (96-33-3)

Reason Code:

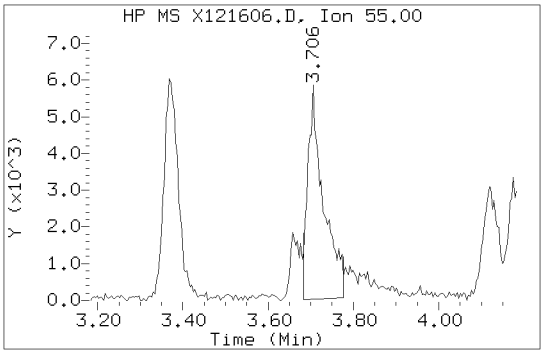
**BEFORE**

MASS
55
AREA
14157
HEIGHT
5696
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
55
AREA
14950
HEIGHT
5831
27-Dec-2022
16:07
linh
pham



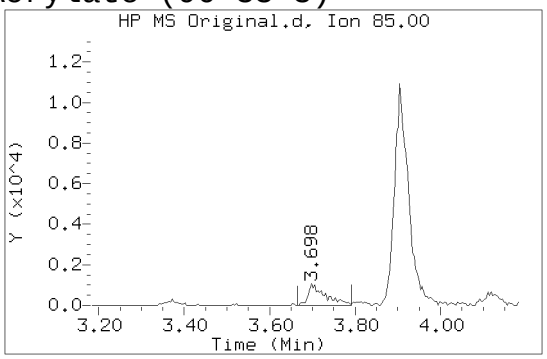
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121606.D
Inj Date : 16-DEC-2022 13:23
InstruID : voa6.i
LabSampID : VSTD005

## Methyl Acrylate (96-33-3)

Reason Code:

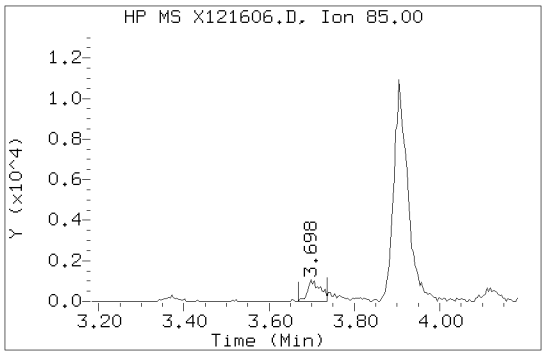
**BEFORE**

MASS
85
AREA
2934
HEIGHT
1073
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
85
AREA
2159
HEIGHT
1073
27-Dec-2022
16:07
linh
pham

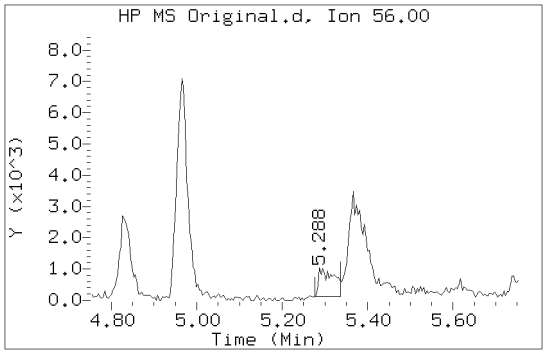



## n-Butanol (71-36-3)

Reason Code:

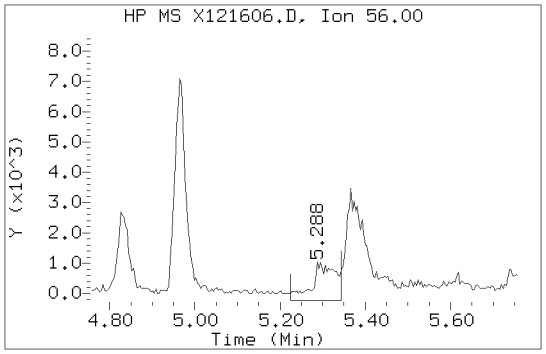
**BEFORE**

MASS
56
AREA
2243
HEIGHT
922
27-Dec-2022
16:03
linh
pham



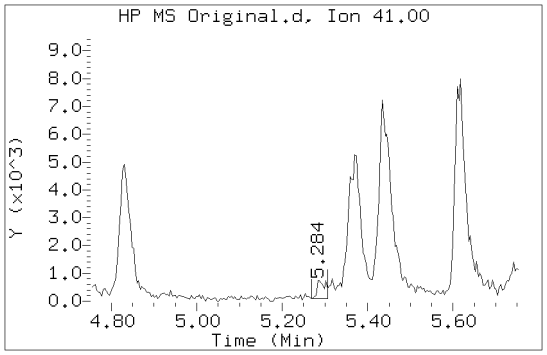

**AFTER**

MASS
56
AREA
4891
HEIGHT
1266
27-Dec-2022
16:07
linh
pham



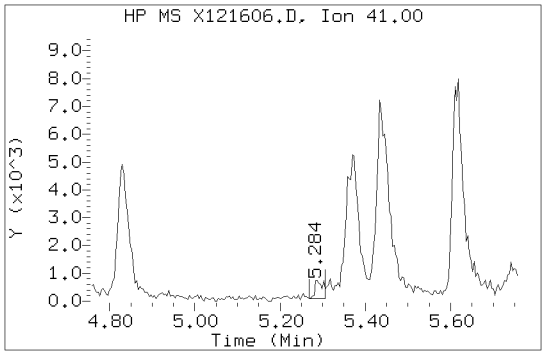

**BEFORE**

MASS
41
AREA
876
HEIGHT
641
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
41
AREA
876
HEIGHT
641
27-Dec-2022
16:07
linh
pham

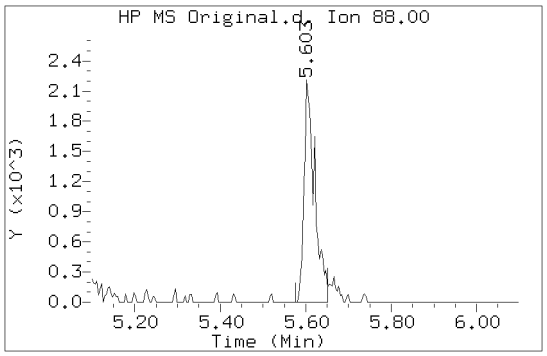



## 1,4-Dioxane ()

Reason Code:

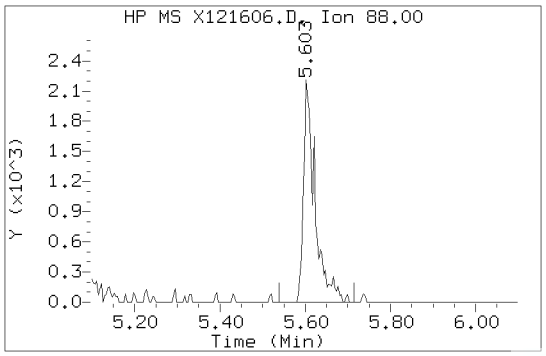
**BEFORE**

MASS
88
AREA
3873
HEIGHT
2211
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
88
AREA
4197
HEIGHT
2211
27-Dec-2022
16:07
linh
pham



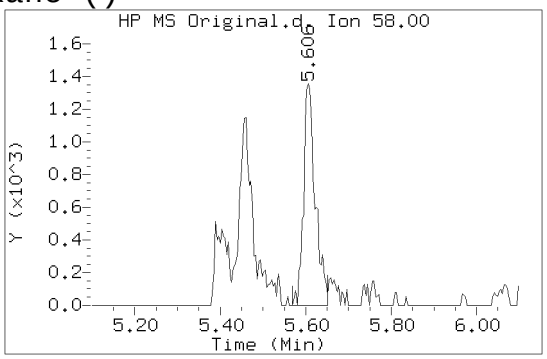
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Inj Date : 16-DEC-2022 13:23
InstruID : voa6.i
LabSampID : VSTD005

## 1,4-Dioxane ()

Reason Code:

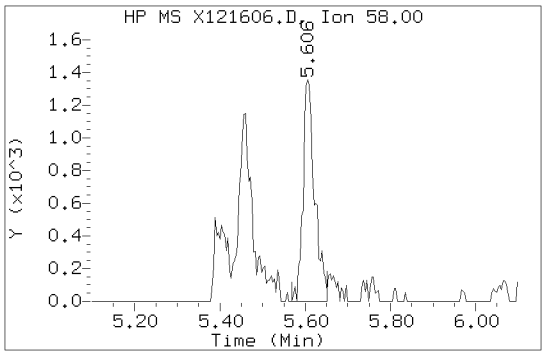
**BEFORE**

MASS
58
AREA
2625
HEIGHT
1356
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
58
AREA
2625
HEIGHT
1356
27-Dec-2022
16:07
linh
pham

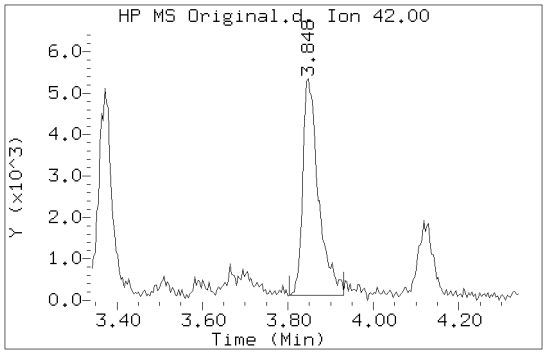



## Tetrahydrofuran (109-99-9)

Reason Code:

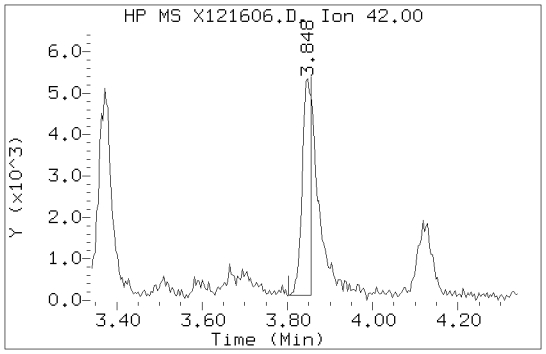
**BEFORE**

MASS
42
AREA
13557
HEIGHT
5225
27-Dec-2022
16:03
linh
pham



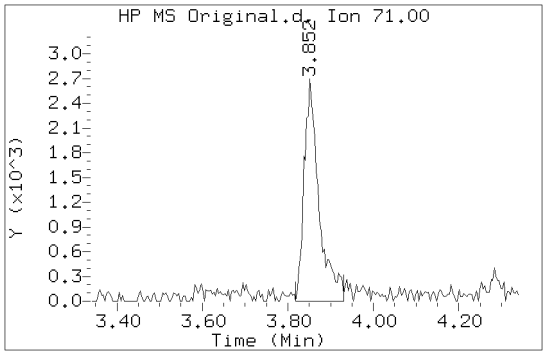

**AFTER**

MASS
42
AREA
7598
HEIGHT
5225
27-Dec-2022
16:07
linh
pham



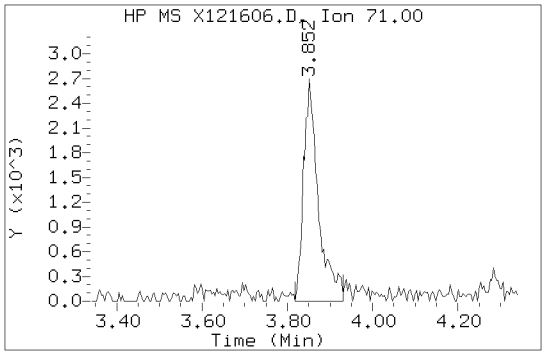

**BEFORE**

MASS
71
AREA
6572
HEIGHT
2695
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
71
AREA
6572
HEIGHT
2695
27-Dec-2022
16:07
linh
pham

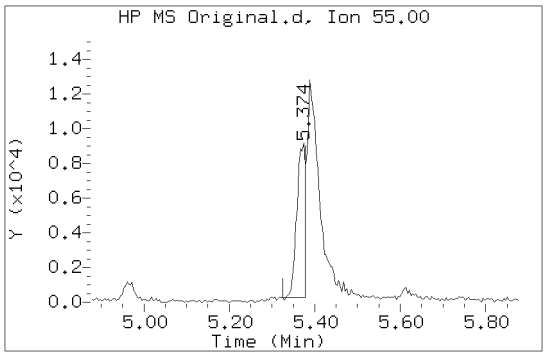



## Methylcyclohexane (108-87-2)

Reason Code:

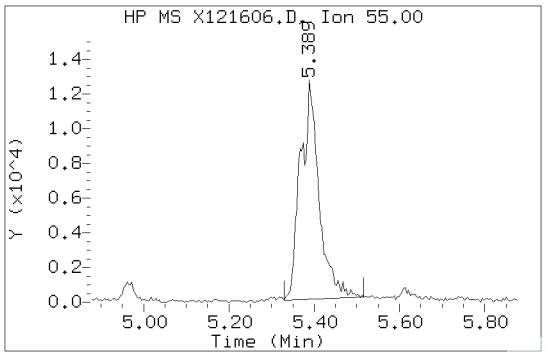
**BEFORE**

MASS
55
AREA
12381
HEIGHT
8941
27-Dec-2022
16:03
linh
pham




**AFTER**

MASS
55
AREA
38650
HEIGHT
12647
27-Dec-2022
16:07
linh
pham

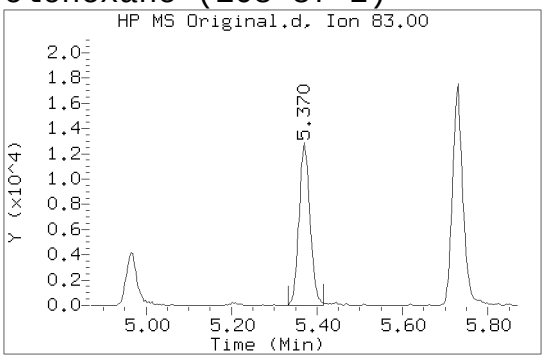


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121606.D
Inj Date : 16-DEC-2022 13:23
InstruID : voa6.i
LabSampID : VSTD005

## Methylcyclohexane (108-87-2)

### BEFORE

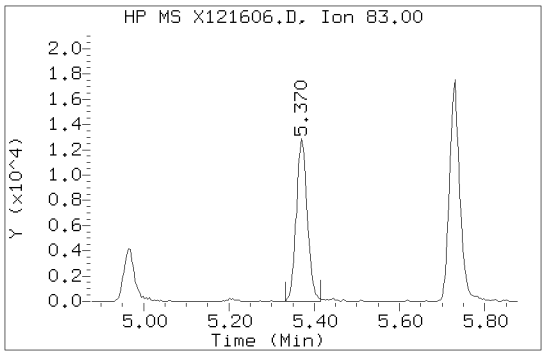
MASS
83
AREA
23564
HEIGHT
12870
27-Dec-2022
16:03
linh
pham




Reason Code:

### AFTER

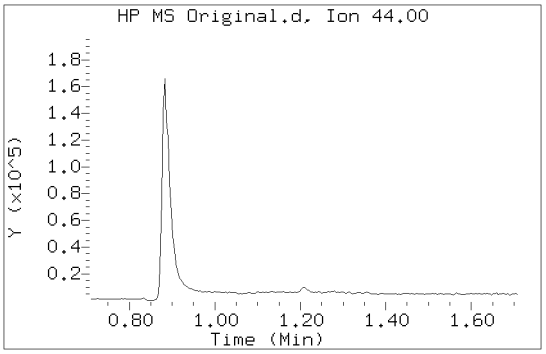
MASS
83
AREA
23564
HEIGHT
12870
27-Dec-2022
16:07
linh
pham




## Acetaldehyde (75-07-0)

### BEFORE

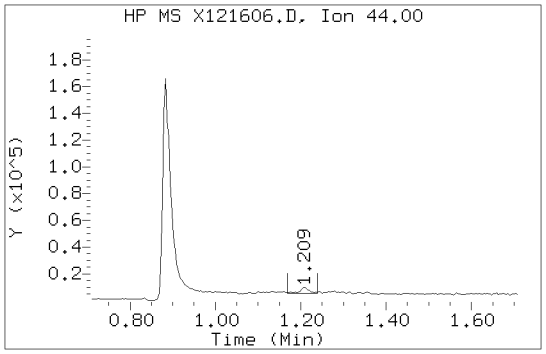
MASS
44
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham




Reason Code:

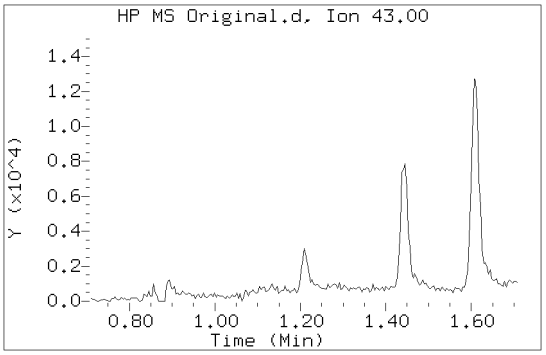
### AFTER

MASS
44
AREA
6161
HEIGHT
4314
27-Dec-2022
16:07
linh
pham



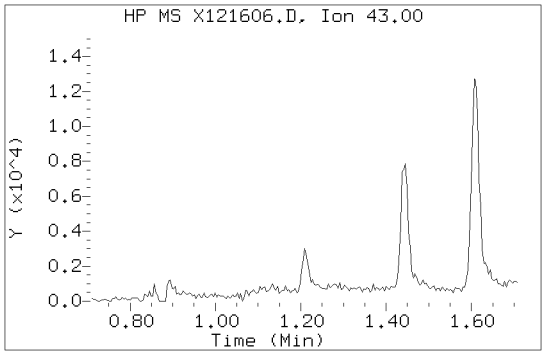

### BEFORE

MASS
43
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



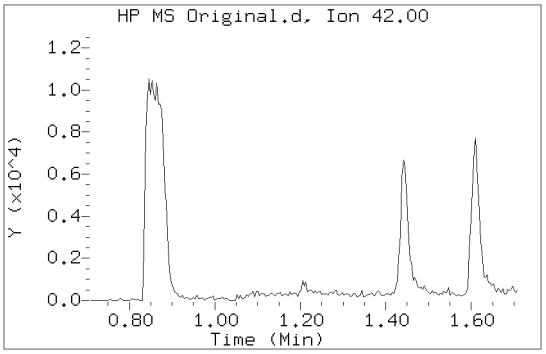

### AFTER

MASS
43
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham



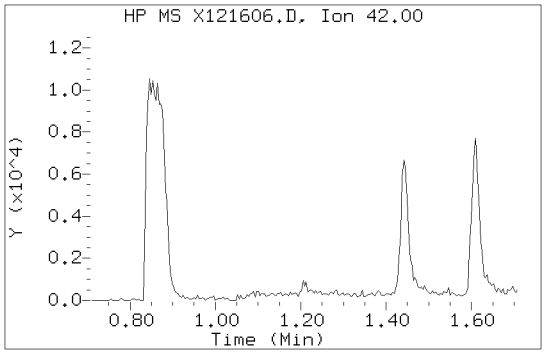

### BEFORE

MASS
42
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham




### AFTER

MASS
42
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham



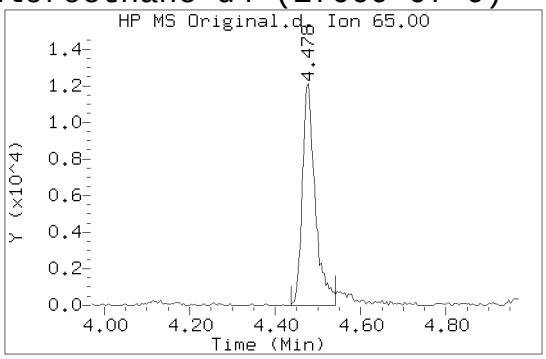
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121606.D
Inj Date : 16-DEC-2022 13:23
InstruID : voa6.i
LabSampID : VSTD005

1,2-Dichloroethane-d4 (17060-07-0)

Reason Code:

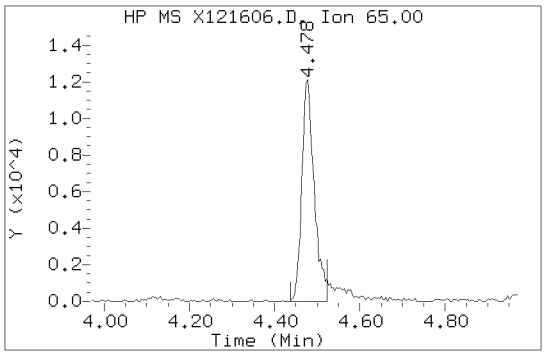
BEFORE

MASS
65
AREA
25815
HEIGHT
12121
27-Dec-2022
16:03
linh
pham



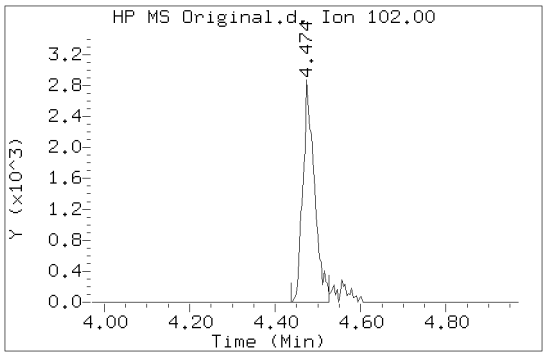

AFTER

MASS
65
AREA
24938
HEIGHT
12121
27-Dec-2022
16:07
linh
pham



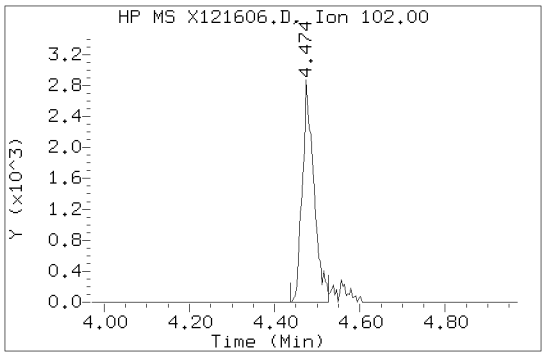

BEFORE

MASS
102
AREA
5492
HEIGHT
2873
27-Dec-2022
16:03
linh
pham




AFTER

MASS
102
AREA
5492
HEIGHT
2873
27-Dec-2022
16:07
linh
pham



Data File: \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121607.D  Page 1
Report Date: 27-Dec-2022 16:07

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121607.D
Lab Smp Id: VSTD020  Client Smp ID: VSTD020
Inj Date  : 16-DEC-2022 13:43
Operator  : PC  Inst ID: voa6.i
Smp Info  : VSTD020;VSTD020;1;6;
Misc Info : V6;WATER;0;1;
Comment   :
Method    : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\8260W.m
Meth Date : 27-Dec-2022 16:07 voa6.i  Quant Type: ISTD
Cal Date  : 16-DEC-2022 13:23  Cal File: X121606.D
Als bottle: 8  Calibration Sample, Level: 6
Dil Factor: 1.00000
Integrator: HP RTE  Compound Sublist: 08260V6.sub
Target Version:  4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

| Name | Value | Description |
|---|---|---|
| DF | 1.000 | Dilution Factor |
| Uf | 5.000 | ng unit correction factor |
| Vo | 5.000 | sample purged |
| Cpnd Variable | | Local Compound Variable |

| Compounds | QUANT SIG MASS | RT | EXP RT | REL RT | RESPONSE | AMOUNTS CAL-AMT ( ug/l) | ON-COL ( ug/l) |
|---|---|---|---|---|---|---|---|
| * 1 Pentafluorobenzene | 168 | 4.178 | 4.178 | (1.000) | 459407 | 50.0000 | |
| 135 1,4-Dioxane | 88 | 5.598 | 5.598 | (1.340) | 16105 | 400.000 | 383.50(M) |
| 140 1,3-Butadiene | 54 | 1.164 | 1.164 | (0.279) | 58280 | 20.0000 | 18.48 |
| 25 Methacrylonitrile | 41 | 3.821 | 3.821 | (0.915) | 62911 | 20.0000 | 19.33 |
| 12 Isobutyl Alcohol | 43 | 4.672 | 4.672 | (1.118) | 201008 | 400.000 | 388.99 |
| 13 Acetonitrile | 39 | 2.195 | 2.195 | (0.525) | 81163 | 200.000 | 194.11 |
| 14 Allyl Chloride | 41 | 2.195 | 2.195 | (0.525) | 150748 | 20.0000 | 18.93 |
| 4 Propionitrile | 54 | 3.653 | 3.653 | (0.874) | 85562 | 200.000 | 182.52 |
| 136 n-Hexane | 57 | 2.768 | 2.768 | (0.663) | 65476 | 20.0000 | 19.79 |
| 72 trans-1,4-Dichloro-2-butene | 53 | 8.893 | 8.893 | (1.160) | 26140 | 20.0000 | 18.70 |
| 194 Acetaldehyde | 44 | 1.209 | 1.209 | (0.289) | 32393 | 80.0000 | 100.98(M) |
| 23 Chloroprene | 53 | 1.767 | 1.767 | (0.423) | 27967 | 20.0000 | 17.90(M) |
| 145 alpha-Methylstyrene | 118 | 9.261 | 9.261 | (0.958) | 155968 | 20.0000 | 19.76 |
| 200 Dimethyl Disulfide | 94 | 6.198 | 6.198 | (0.808) | 171978 | 20.0000 | 19.62 |
| 139 Diethyl ether | 59 | 1.756 | 1.756 | (0.420) | 55275 | 20.0000 | 18.00 |
| 130 Ethyl Acetate | 43 | 3.660 | 3.660 | (0.876) | 75163 | 20.0000 | 20.96 |
| 40 Methyl Methacrylate | 41 | 5.606 | 5.606 | (1.342) | 56242 | 20.0000 | 17.95 |
| 49 Ethyl Methacrylate | 69 | 6.712 | 6.712 | (1.352) | 58073 | 20.0000 | 18.07 |
| 132 n-Butanol | 56 | 5.268 | 5.268 | (1.261) | 15012 | 400.000 | 294.62 |
| 142 Tetrahydrofuran | 42 | 3.848 | 3.848 | (0.921) | 28221 | 40.0000 | 47.81 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 150 | Allyl alcohol | 57 | 2.768 | 2.768 (0.663) | 65476 | 400.000 | 366.93 |
| 166 | 1,2,3-Trimethylbenzene | 105 | 9.729 | 9.729 (1.007) | 331546 | 20.0000 | 19.32 |

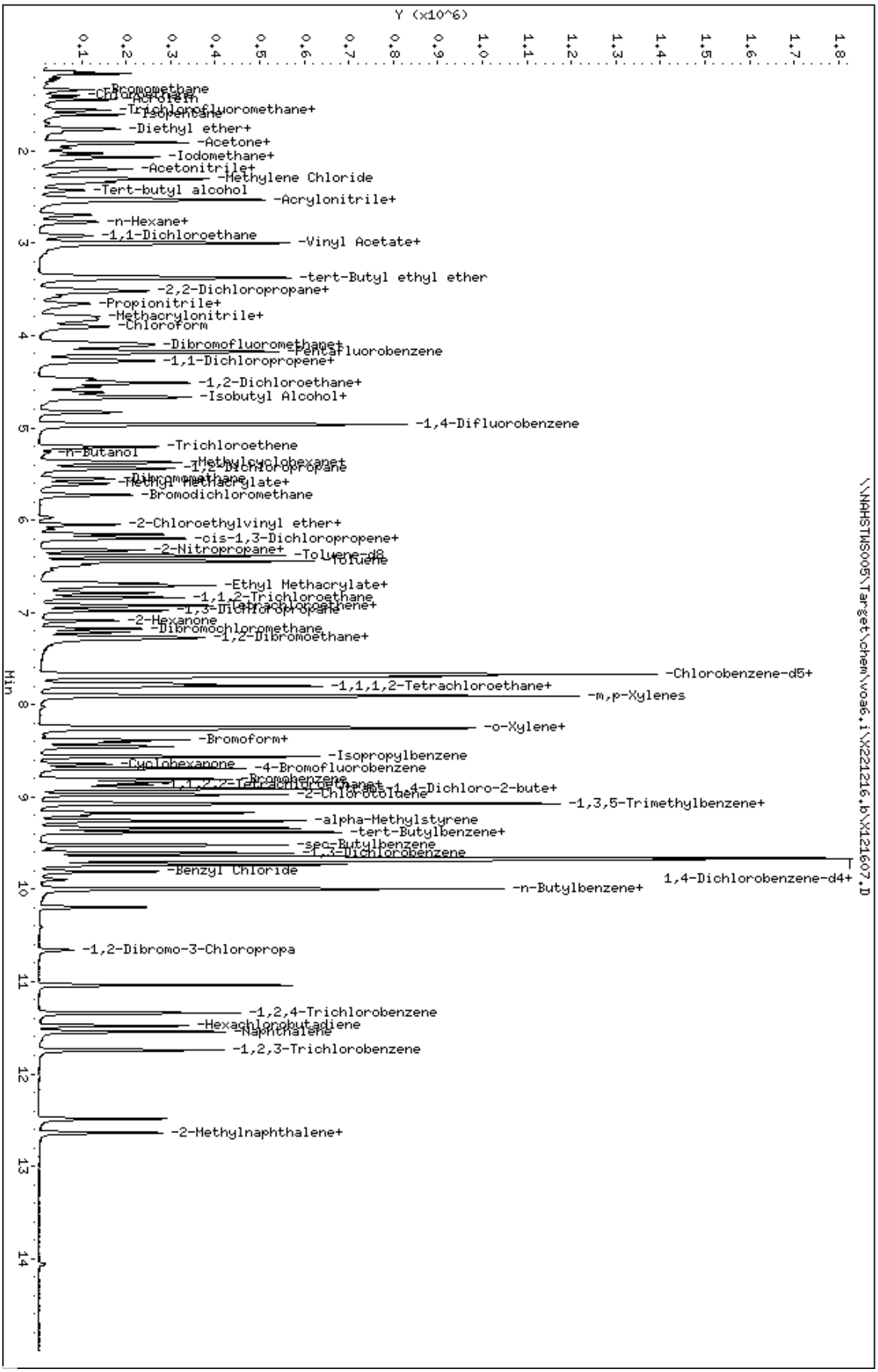
| | Compounds | QUANT SIG MASS | RT | EXP RT | REL RT | RESPONSE | AMOUNTS CAL-AMT ( ug/l) | ON-COL ( ug/l) |
|---|---|---|---|---|---|---|---|---|
| | 131 Methyl Acrylate | 55 | 3.690 | 3.690 | (0.883) | 57874 | 20.0000 | 18.55(M) |
| | 162 Butyl acrylate | 55 | 8.252 | 8.252 | (1.076) | 156518 | 20.0000 | 18.50 |
| | 2 Dichlorodifluoromethane | 85 | 0.972 | 0.972 | (0.233) | 63382 | 20.0000 | 19.96 |
| | 3 Chloromethane | 50 | 1.077 | 1.077 | (0.258) | 72324 | 20.0000 | 18.84 |
| | 5 Vinyl Chloride | 62 | 1.141 | 1.141 | (0.273) | 74461 | 20.0000 | 18.55 |
| | 6 Bromomethane | 94 | 1.340 | 1.340 | (0.321) | 52034 | 20.0000 | 18.30 |
| | 7 Chloroethane | 64 | 1.400 | 1.400 | (0.335) | 52021 | 20.0000 | 18.62 |
| | 8 Trichlorofluoromethane | 101 | 1.557 | 1.557 | (0.373) | 106188 | 20.0000 | 18.90 |
| | 9 Acrolein | 56 | 1.441 | 1.441 | (0.345) | 12279 | 40.0000 | 40.80 |
| | 10 Acetone | 43 | 1.973 | 1.973 | (0.472) | 50987 | 40.0000 | 39.53 |
| | 11 1,1-Dichloroethene | 96 | 1.913 | 1.913 | (0.458) | 65650 | 20.0000 | 18.82 |
| | 15 Iodomethane | 142 | 2.026 | 2.026 | (0.485) | 143457 | 40.0000 | 34.36 |
| | 16 Acrylonitrile | 53 | 2.532 | 2.532 | (0.606) | 46552 | 40.0000 | 39.36 |
| | 17 Methylene Chloride | 84 | 2.303 | 2.303 | (0.551) | 94402 | 20.0000 | 19.73 |
| | 18 Methyl tert-butyl ether | 73 | 2.532 | 2.532 | (0.606) | 214504 | 20.0000 | 18.79 |
| | 19 Carbon Disulfide | 76 | 2.067 | 2.067 | (0.495) | 337289 | 40.0000 | 36.97 |
| | 20 trans-1,2-Dichloroethene | 96 | 2.524 | 2.524 | (0.604) | 74471 | 20.0000 | 19.08 |
| | 21 Vinyl Acetate | 43 | 2.997 | 2.997 | (0.717) | 387538 | 40.0000 | 38.68 |
| | 22 1,1-Dichloroethane | 63 | 2.918 | 2.918 | (0.699) | 129644 | 20.0000 | 18.93 |
| | 24 2-Butanone | 43 | 3.578 | 3.578 | (0.856) | 47830 | 40.0000 | 36.94(H) |
| | 26 2,2-Dichloropropane | 77 | 3.507 | 3.507 | (0.839) | 108952 | 20.0000 | 18.73 |
| | 27 cis-1,2-Dichloroethene | 96 | 3.525 | 3.525 | (0.844) | 88894 | 20.0000 | 18.71 |
| | 28 Chloroform | 83 | 3.904 | 3.904 | (0.935) | 145610 | 20.0000 | 18.96 |
| | 29 Bromochloromethane | 128 | 3.795 | 3.795 | (0.908) | 47919 | 20.0000 | 18.42 |
| $ | 30 Dibromofluoromethane | 113 | 4.099 | 4.099 | (0.981) | 90108 | 20.0000 | 20.32 |
| | 31 1,1,1-Trichloroethane | 97 | 4.080 | 4.080 | (0.977) | 116049 | 20.0000 | 19.05 |
| | 32 1,1-Dichloropropene | 75 | 4.279 | 4.279 | (0.862) | 93914 | 20.0000 | 19.38 |
| | 33 1,2-Dichloroethane | 62 | 4.556 | 4.556 | (0.918) | 108750 | 20.0000 | 19.45 |
| | 34 Carbon Tetrachloride | 117 | 4.260 | 4.260 | (0.858) | 93815 | 20.0000 | 18.13 |
| $ | 35 1,2-Dichloroethane-d4 | 65 | 4.470 | 4.470 | (1.070) | 92990 | 20.0000 | 20.13 |
| * | 36 1,4-Difluorobenzene | 114 | 4.965 | 4.965 | (1.000) | 682389 | 50.0000 | |
| | 37 Benzene | 78 | 4.511 | 4.511 | (0.909) | 313141 | 20.0000 | 19.21 |
| | 38 Trichloroethene | 130 | 5.205 | 5.205 | (1.048) | 90292 | 20.0000 | 19.53 |
| | 39 Bromodichloromethane | 83 | 5.726 | 5.726 | (1.153) | 116178 | 20.0000 | 18.99 |
| | 41 2-Chloroethylvinyl ether | 63 | 6.048 | 6.048 | (1.218) | 71559 | 40.0000 | 41.12 |
| | 42 1,2-Dichloropropane | 63 | 5.437 | 5.437 | (1.095) | 82954 | 20.0000 | 19.13 |
| | 44 Dibromomethane | 93 | 5.553 | 5.553 | (1.119) | 57196 | 20.0000 | 19.41 |
| | 45 4-Methyl-2-Pentanone | 43 | 6.326 | 6.326 | (0.825) | 138209 | 40.0000 | 39.93 |
| | 46 cis-1,3-Dichloropropene | 75 | 6.153 | 6.153 | (1.239) | 142141 | 20.0000 | 19.79 |
| * | 47 Chlorobenzene-d5 | 117 | 7.668 | 7.668 | (1.000) | 647445 | 50.0000 | |
| $ | 48 Toluene-d8 | 98 | 6.385 | 6.385 | (0.833) | 315179 | 20.0000 | 19.70 |
| | 50 Toluene | 91 | 6.445 | 6.445 | (0.841) | 339968 | 20.0000 | 18.99 |
| | 51 trans-1,3-Dichloropropene | 75 | 6.682 | 6.682 | (1.346) | 116330 | 20.0000 | 19.51 |
| | 52 2-Hexanone | 43 | 7.086 | 7.086 | (0.924) | 93119 | 40.0000 | 39.54 |
| | 53 1,1,2-Trichloroethane | 83 | 6.839 | 6.839 | (0.892) | 69855 | 20.0000 | 19.45 |
| | 54 1,3-Dichloropropane | 76 | 6.982 | 6.982 | (0.911) | 137967 | 20.0000 | 19.52 |
| | 55 Dibromochloromethane | 129 | 7.176 | 7.176 | (0.936) | 100749 | 20.0000 | 19.44 |
| | 56 Tetrachloroethene | 164 | 6.925 | 6.925 | (0.903) | 74611 | 20.0000 | 20.15 |
| | 57 1,2-Dibromoethane | 107 | 7.263 | 7.263 | (0.947) | 88886 | 20.0000 | 19.80 |
| | 58 1-Chlorohexane | 55 | 7.694 | 7.694 | (1.550) | 66757 | 20.0000 | 20.24 |
| | 59 Chlorobenzene | 112 | 7.694 | 7.694 | (1.003) | 240885 | 20.0000 | 18.97 |
| | 60 1,1,1,2-Tetrachloroethane | 131 | 7.772 | 7.772 | (1.014) | 90283 | 20.0000 | 19.11 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 61 Ethylbenzene | 106 | 7.799 | 7.799 (1.017) | 117560 | 20.0000 | 19.66 |
| 62 m,p-Xylenes | 106 | 7.904 | 7.904 (1.031) | 299082 | 40.0000 | 38.80 |

| | Compounds | QUANT SIG MASS | RT | EXP RT | REL RT | RESPONSE | AMOUNTS CAL-AMT ( ug/l) | ON-COL ( ug/l) |
|---|---|---|---|---|---|---|---|---|
| | 63 o-Xylene | 106 | 8.241 | 8.241 | (1.075) | 147602 | 20.0000 | 19.40 |
| | 64 Styrene | 104 | 8.260 | 8.260 | (1.077) | 253280 | 20.0000 | 19.86 |
| | 66 Bromoform | 173 | 8.410 | 8.410 | (1.097) | 69137 | 20.0000 | 19.25 |
| | 67 Isopropylbenzene | 105 | 8.560 | 8.560 | (1.116) | 344283 | 20.0000 | 19.80 |
| | 68 1,1,2,2-Tetrachloroethane | 83 | 8.837 | 8.837 | (0.915) | 112594 | 20.0000 | 19.83 |
| $ | 69 4-Bromofluorobenzene | 95 | 8.691 | 8.691 | (1.133) | 116878 | 20.0000 | 19.58 |
| * | 70 1,4-Dichlorobenzene-d4 | 152 | 9.662 | 9.662 | (1.000) | 356229 | 50.0000 | |
| | 71 1,2,3-Trichloropropane | 75 | 8.863 | 8.863 | (0.917) | 76967 | 20.0000 | 19.41 |
| | 73 n-Propylbenzene | 91 | 8.912 | 8.912 | (0.922) | 404399 | 20.0000 | 20.49 |
| | 74 Bromobenzene | 156 | 8.803 | 8.803 | (0.911) | 117586 | 20.0000 | 20.11 |
| | 75 1,3,5-Trimethylbenzene | 105 | 9.070 | 9.070 | (0.939) | 295026 | 20.0000 | 20.23 |
| | 76 2-Chlorotoluene | 91 | 8.976 | 8.976 | (0.929) | 256591 | 20.0000 | 19.81 |
| | 77 4-Chlorotoluene | 91 | 9.070 | 9.070 | (0.939) | 294244 | 20.0000 | 19.93 |
| | 78 tert-Butylbenzene | 119 | 9.336 | 9.336 | (0.966) | 242174 | 20.0000 | 20.29 |
| | 79 1,2,4-Trimethylbenzene | 105 | 9.381 | 9.381 | (0.971) | 305461 | 20.0000 | 19.91 |
| | 81 sec-Butylbenzene | 105 | 9.519 | 9.519 | (0.985) | 326826 | 20.0000 | 20.58 |
| | 82 p-Isopropyltoluene | 119 | 9.651 | 9.651 | (0.999) | 294187 | 20.0000 | 20.67 |
| | 83 1,3-Dichlorobenzene | 146 | 9.606 | 9.606 | (0.994) | 197278 | 20.0000 | 20.33 |
| | 84 1,4-Dichlorobenzene | 146 | 9.684 | 9.684 | (1.002) | 207572 | 20.0000 | 19.60 |
| | 86 Benzyl Chloride | 91 | 9.808 | 9.808 | (1.279) | 163895 | 20.0000 | 17.99 |
| | 87 n-Butylbenzene | 91 | 9.995 | 9.995 | (1.035) | 248190 | 20.0000 | 19.23 |
| | 88 1,2-Dichlorobenzene | 146 | 9.995 | 9.995 | (1.035) | 201166 | 20.0000 | 20.13 |
| | 89 1,2-Dibromo-3-Chloropropane | 155 | 10.663 | 10.663 | (1.104) | 18635 | 20.0000 | 20.58 |
| | 90 1,2,4-Trichlorobenzene | 180 | 11.337 | 11.337 | (1.173) | 130463 | 20.0000 | 20.69 |
| | 91 Hexachlorobutadiene | 225 | 11.480 | 11.480 | (1.188) | 55912 | 20.0000 | 20.12 |
| | 92 Naphthalene | 128 | 11.544 | 11.544 | (1.195) | 300432 | 20.0000 | 20.94 |
| | 93 1,2,3-Trichlorobenzene | 180 | 11.742 | 11.742 | (1.215) | 124401 | 20.0000 | 20.60 |
| M | 94 1,2-Dichloroethylene (total) | 96 | | | | 163365 | 40.0000 | |
| M | 95 Xylenes (total) | 106 | | | | 446684 | 60.0000 | |
| | 141 Cyclohexane | 56 | 4.118 | 4.118 | (0.986) | 84355 | 20.0000 | 19.01(M) |
| | 138 Freon TF | 101 | 1.910 | 1.910 | (0.457) | 64657 | 20.0000 | 19.17 |
| | 147 Methylcyclohexane | 55 | 5.381 | 5.381 | (1.084) | 172044 | 20.0000 | 20.59 |
| | 146 Methyl Acetate | 43 | 2.228 | 2.228 | (0.533) | 38475 | 20.0000 | 18.61 |
| | 148 Tert-Butyl alcohol | 59 | 2.423 | 2.423 | (0.580) | 117583 | 400.000 | 369.63 |
| | 149 Isopropyl Alcohol | 45 | 2.090 | 2.090 | (0.500) | 61646 | 400.000 | 371.06 |

## QC Flag Legend

M - Compound response manually integrated.
H - Operator selected an alternate compound hit.




Data File: \\NAHSTWS005\Target\chem\voa6,i\X221216,b\X121607.D
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Client ID: VSTD020
Sample Info: VSTD020;VSTD020;1;6;
Purge Volume: 5.0
Column phase: DB624

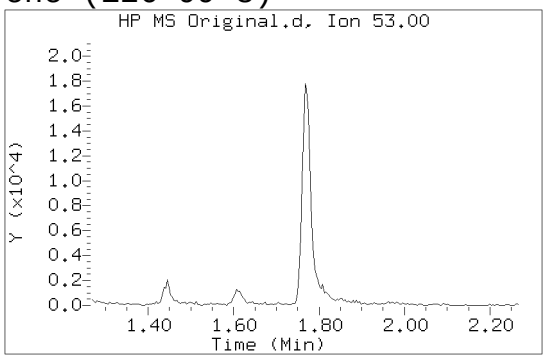
Instrument: voa6,i
Operator: PC
Column diameter: 0.18

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Inj Date : 16-DEC-2022 13:43
InstruID : voa6.i
LabSampID : VSTD020

## Chloroprene (126-99-8)

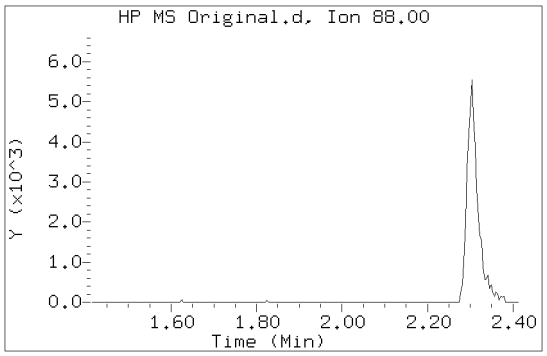
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27-Dec-2022
16:03
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### BEFORE

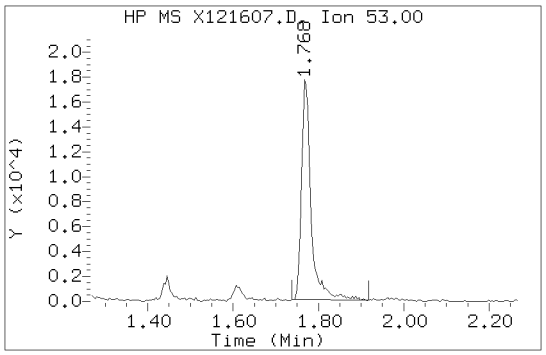
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Reason Code:

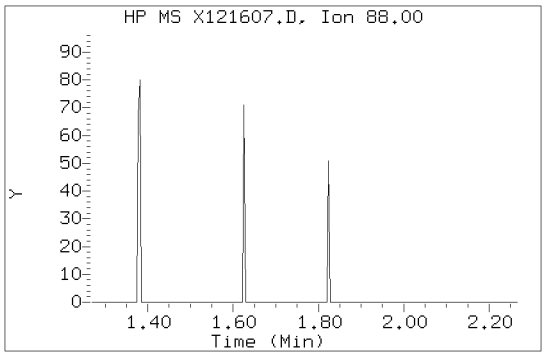
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27-Dec-2022
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### AFTER

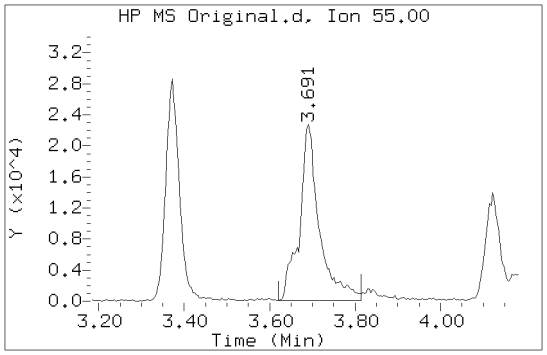
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pham




## Methyl Acrylate (96-33-3)

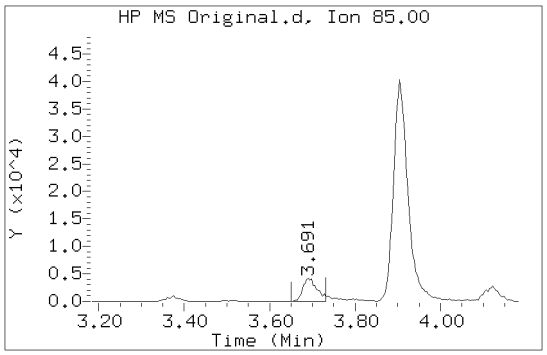
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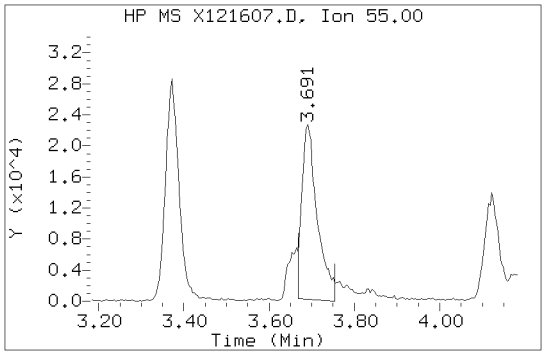
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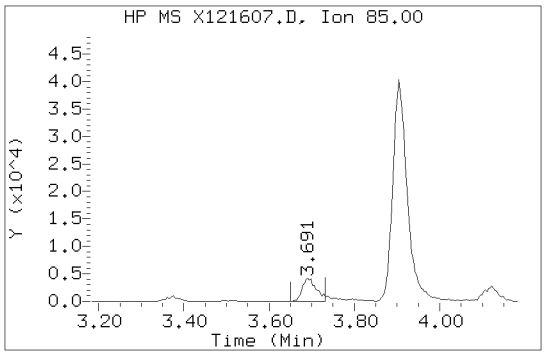
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27-Dec-2022
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### AFTER

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27-Dec-2022
16:06
linh
pham



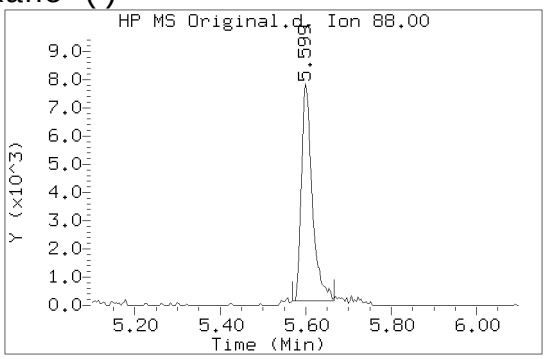
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Inj Date : 16-DEC-2022 13:43
InstruID : voa6.i
LabSampID : VSTD020

## 1,4-Dioxane ()

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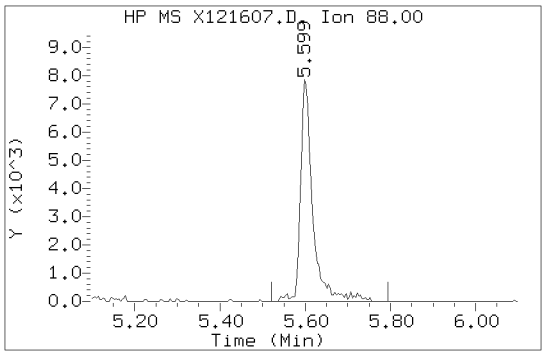
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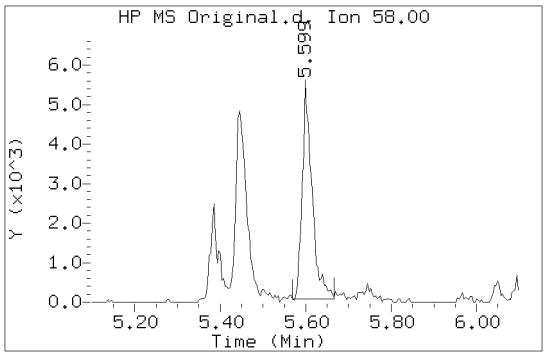

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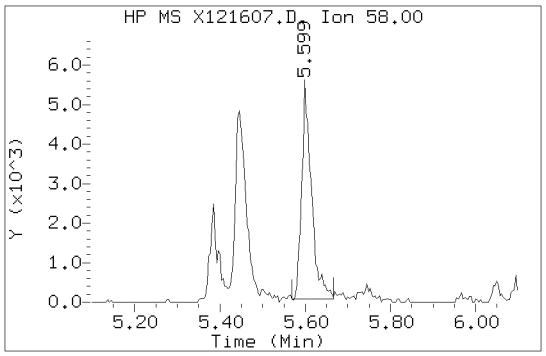

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27-Dec-2022
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**AFTER**

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HEIGHT
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27-Dec-2022
16:06
linh
pham

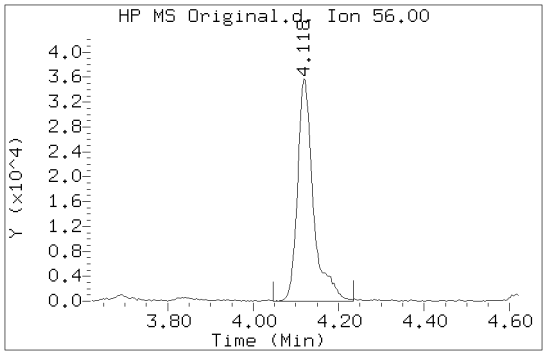



## Cyclohexane (110-82-7)

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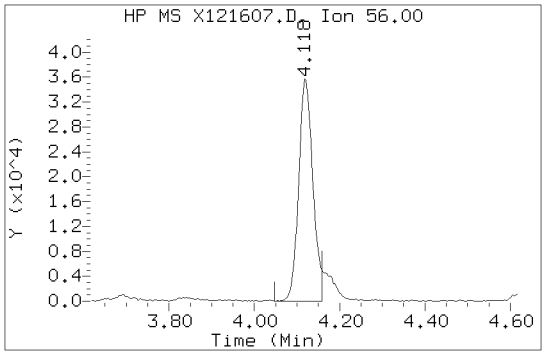
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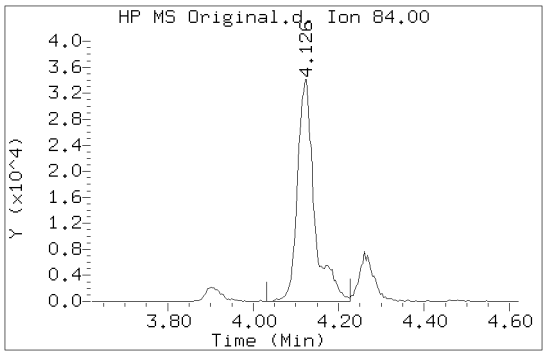

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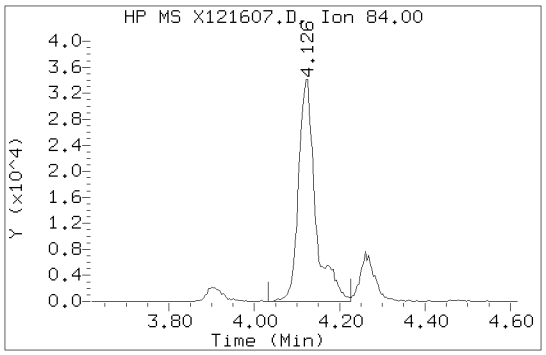

**BEFORE**

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27-Dec-2022
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**AFTER**

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95724
HEIGHT
34088
27-Dec-2022
16:06
linh
pham



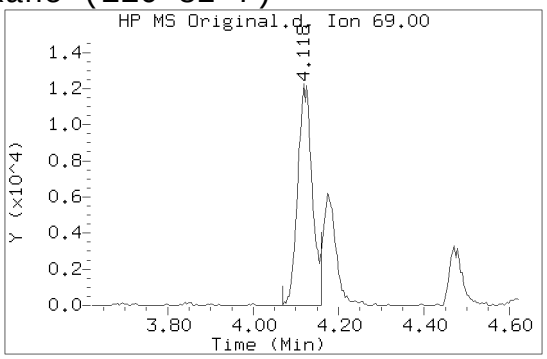
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Inj Date : 16-DEC-2022 13:43
InstruID : voa6.i
LabSampID : VSTD020

## Cyclohexane (110-82-7)

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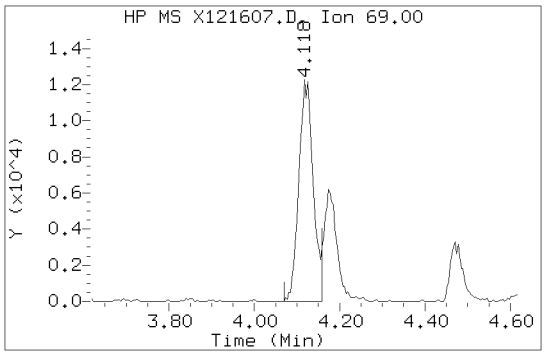
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**AFTER**

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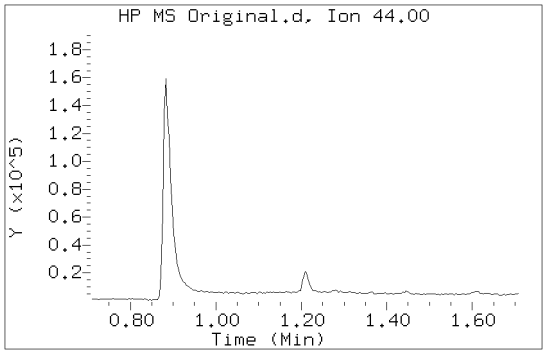



## Acetaldehyde (75-07-0)

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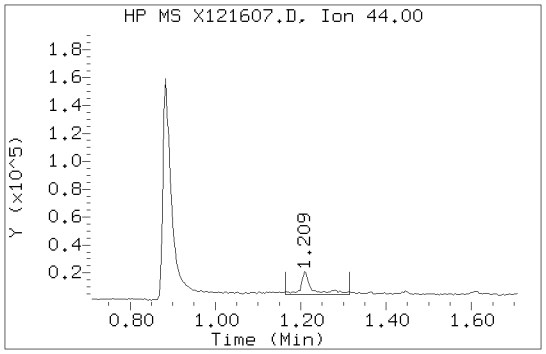
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27-Dec-2022
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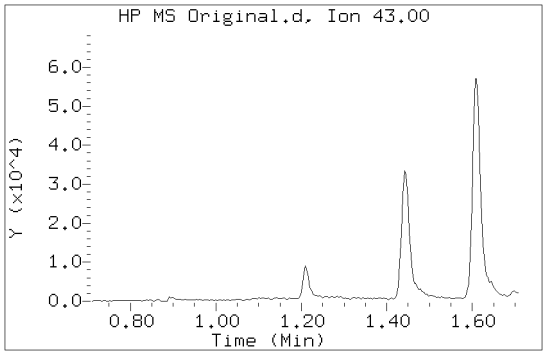

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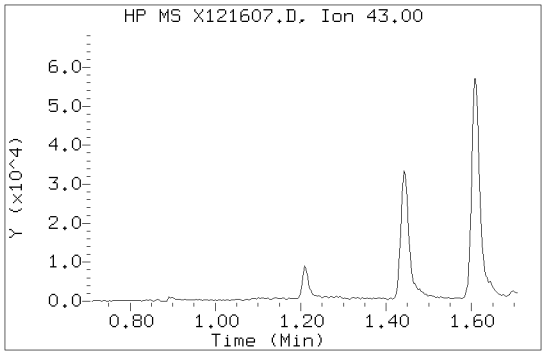

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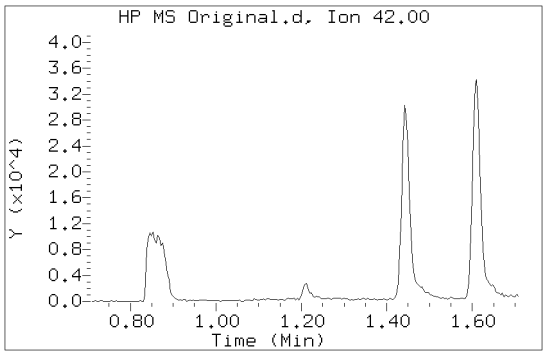

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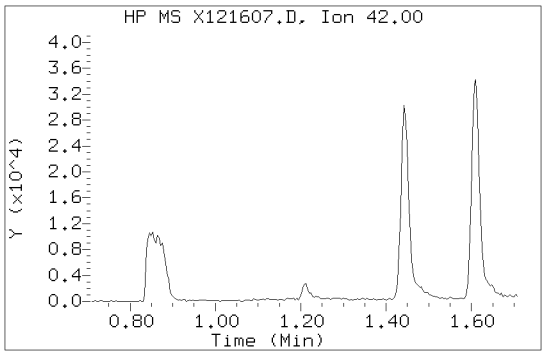

**BEFORE**

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27-Dec-2022
16:03
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**AFTER**

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HEIGHT
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27-Dec-2022
16:06
linh
pham



Data File: \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121608.D  Page 1
Report Date: 27-Dec-2022 16:07

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121608.D
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Inj Date  : 16-DEC-2022 14:04
Operator  : PC  Inst ID: voa6.i
Smp Info  : VSTD050;VSTD050;1;7;
Misc Info : V6;WATER;0;1;
Comment   :
Method    : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\8260W.m
Meth Date : 27-Dec-2022 16:07 voa6.i  Quant Type: ISTD
Cal Date  : 16-DEC-2022 13:43  Cal File: X121607.D
Als bottle: 9  Calibration Sample, Level: 7
Dil Factor: 1.00000
Integrator: HP RTE  Compound Sublist: 08260V6.sub
Target Version:  4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

| Name | Value | Description |
|---|---|---|
| DF | 1.000 | Dilution Factor |
| Uf | 5.000 | ng unit correction factor |
| Vo | 5.000 | sample purged |
| Cpnd Variable | | Local Compound Variable |

| Compounds | QUANT SIG MASS | RT | EXP RT | REL RT | RESPONSE | AMOUNTS CAL-AMT ( ug/l) | ON-COL ( ug/l) |
|---|---|---|---|---|---|---|---|
| * 1 Pentafluorobenzene | 168 | 4.178 | 4.178 | (1.000) | 457591 | 50.0000 | |
| 135 1,4-Dioxane | 88 | 5.595 | 5.595 | (1.339) | 40509 | 1000.00 | 968.45 |
| 140 1,3-Butadiene | 54 | 1.160 | 1.160 | (0.278) | 152324 | 50.0000 | 48.50 |
| 25 Methacrylonitrile | 41 | 3.821 | 3.821 | (0.915) | 147931 | 50.0000 | 45.65 |
| 12 Isobutyl Alcohol | 43 | 4.672 | 4.672 | (1.118) | 499872 | 1000.00 | 971.21 |
| 13 Acetonitrile | 39 | 2.195 | 2.195 | (0.525) | 202696 | 500.000 | 486.70 |
| 14 Allyl Chloride | 41 | 2.195 | 2.195 | (0.525) | 372130 | 50.0000 | 46.91 |
| 4 Propionitrile | 54 | 3.645 | 3.645 | (0.873) | 221995 | 500.000 | 475.45 |
| 136 n-Hexane | 57 | 2.768 | 2.768 | (0.663) | 182358 | 50.0000 | 55.34 |
| 72 trans-1,4-Dichloro-2-butene | 53 | 8.890 | 8.890 | (1.159) | 70497 | 50.0000 | 50.03 |
| 194 Acetaldehyde | 44 | 1.209 | 1.209 | (0.289) | 67188 | 200.000 | 235.49(M) |
| 23 Chloroprene | 53 | 1.767 | 1.767 | (0.423) | 73877 | 50.0000 | 47.48(M) |
| 145 alpha-Methylstyrene | 118 | 9.257 | 9.257 | (0.958) | 423646 | 50.0000 | 51.17 |
| 200 Dimethyl Disulfide | 94 | 6.194 | 6.194 | (0.808) | 438695 | 50.0000 | 49.65 |
| 139 Diethyl ether | 59 | 1.756 | 1.756 | (0.420) | 141705 | 50.0000 | 46.34 |
| 130 Ethyl Acetate | 43 | 3.649 | 3.649 | (0.873) | 170590 | 50.0000 | 47.77 |
| 40 Methyl Methacrylate | 41 | 5.606 | 5.606 | (1.342) | 147516 | 50.0000 | 47.27 |
| 49 Ethyl Methacrylate | 69 | 6.712 | 6.712 | (1.352) | 144135 | 50.0000 | 44.17 |
| 132 n-Butanol | 56 | 5.253 | 5.253 | (1.257) | 54418 | 1000.00 | 935.85 |
| 142 Tetrahydrofuran | 42 | 3.844 | 3.844 | (0.920) | 58181 | 100.000 | 102.34 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 150 | Allyl alcohol | 57 | 2.768 | 2.768 (0.663) | 182358 | 1000.00 | 1026.00 |
| 166 | 1,2,3-Trimethylbenzene | 105 | 9.729 | 9.729 (1.007) | 826758 | 50.0000 | 45.95 |

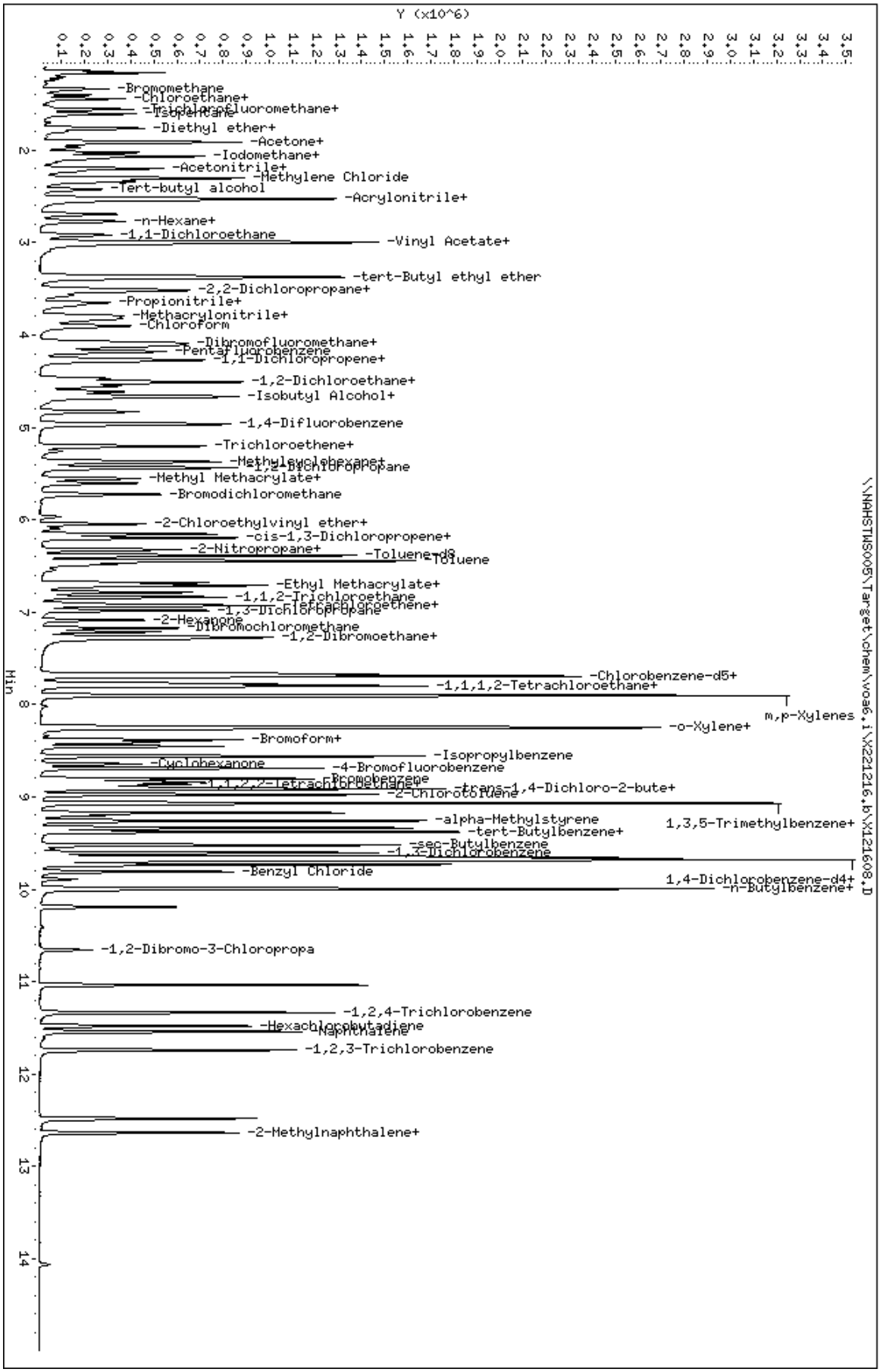
| | Compounds | QUANT SIG MASS | RT | EXP RT | REL RT | RESPONSE | AMOUNTS CAL-AMT ( ug/l) | ON-COL ( ug/l) |
|---|---|---|---|---|---|---|---|---|
| | 131 Methyl Acrylate | 55 | 3.683 | 3.683 | (0.882) | 151068 | 50.0000 | 48.62(M) |
| | 162 Butyl acrylate | 55 | 8.252 | 8.252 | (1.076) | 415774 | 50.0000 | 48.76 |
| | 2 Dichlorodifluoromethane | 85 | 0.969 | 0.969 | (0.232) | 160392 | 50.0000 | 50.11 |
| | 3 Chloromethane | 50 | 1.077 | 1.077 | (0.258) | 192710 | 50.0000 | 46.69 |
| | 5 Vinyl Chloride | 62 | 1.141 | 1.141 | (0.273) | 201812 | 50.0000 | 50.48 |
| | 6 Bromomethane | 94 | 1.336 | 1.336 | (0.320) | 139689 | 50.0000 | 46.33 |
| | 7 Chloroethane | 64 | 1.400 | 1.400 | (0.335) | 134745 | 50.0000 | 48.43 |
| | 8 Trichlorofluoromethane | 101 | 1.557 | 1.557 | (0.373) | 278013 | 50.0000 | 49.70 |
| | 9 Acrolein | 56 | 1.441 | 1.441 | (0.345) | 27445 | 100.000 | 88.04 |
| | 10 Acetone | 43 | 1.970 | 1.970 | (0.472) | 124798 | 100.000 | 97.19 |
| | 11 1,1-Dichloroethene | 96 | 1.910 | 1.910 | (0.457) | 168905 | 50.0000 | 48.63 |
| | 15 Iodomethane | 142 | 2.022 | 2.022 | (0.484) | 455792 | 100.000 | 99.60 |
| | 16 Acrylonitrile | 53 | 2.528 | 2.528 | (0.605) | 118697 | 100.000 | 100.77 |
| | 17 Methylene Chloride | 84 | 2.300 | 2.300 | (0.550) | 225642 | 50.0000 | 47.36 |
| | 18 Methyl tert-butyl ether | 73 | 2.532 | 2.532 | (0.606) | 534667 | 50.0000 | 47.03 |
| | 19 Carbon Disulfide | 76 | 2.067 | 2.067 | (0.495) | 892690 | 100.000 | 98.24 |
| | 20 trans-1,2-Dichloroethene | 96 | 2.524 | 2.524 | (0.604) | 191505 | 50.0000 | 49.27 |
| | 21 Vinyl Acetate | 43 | 2.993 | 2.993 | (0.716) | 983875 | 100.000 | 98.59 |
| | 22 1,1-Dichloroethane | 63 | 2.918 | 2.918 | (0.699) | 330037 | 50.0000 | 48.38 |
| | 24 2-Butanone | 43 | 3.574 | 3.574 | (0.856) | 130179 | 100.000 | 95.71(H) |
| | 26 2,2-Dichloropropane | 77 | 3.507 | 3.507 | (0.839) | 283996 | 50.0000 | 49.03 |
| | 27 cis-1,2-Dichloroethene | 96 | 3.525 | 3.525 | (0.844) | 228729 | 50.0000 | 48.35 |
| | 28 Chloroform | 83 | 3.904 | 3.904 | (0.935) | 370755 | 50.0000 | 48.49 |
| | 29 Bromochloromethane | 128 | 3.788 | 3.788 | (0.907) | 120638 | 50.0000 | 46.58 |
| $ | 30 Dibromofluoromethane | 113 | 4.095 | 4.095 | (0.980) | 211939 | 50.0000 | 48.23 |
| | 31 1,1,1-Trichloroethane | 97 | 4.080 | 4.080 | (0.977) | 300650 | 50.0000 | 49.56 |
| | 32 1,1-Dichloropropene | 75 | 4.279 | 4.279 | (0.862) | 256928 | 50.0000 | 52.23 |
| | 33 1,2-Dichloroethane | 62 | 4.552 | 4.552 | (0.917) | 276500 | 50.0000 | 48.70 |
| | 34 Carbon Tetrachloride | 117 | 4.260 | 4.260 | (0.858) | 251833 | 50.0000 | 47.94 |
| $ | 35 1,2-Dichloroethane-d4 | 65 | 4.470 | 4.470 | (1.070) | 222293 | 50.0000 | 47.94 |
| * | 36 1,4-Difluorobenzene | 114 | 4.965 | 4.965 | (1.000) | 692830 | 50.0000 | |
| | 37 Benzene | 78 | 4.507 | 4.507 | (0.908) | 812279 | 50.0000 | 49.09 |
| | 38 Trichloroethene | 130 | 5.205 | 5.205 | (1.048) | 233833 | 50.0000 | 49.83 |
| | 39 Bromodichloromethane | 83 | 5.722 | 5.722 | (1.153) | 297315 | 50.0000 | 47.88 |
| | 41 2-Chloroethylvinyl ether | 63 | 6.048 | 6.048 | (1.218) | 180920 | 100.000 | 102.42 |
| | 42 1,2-Dichloropropane | 63 | 5.433 | 5.433 | (1.094) | 215079 | 50.0000 | 48.87 |
| | 44 Dibromomethane | 93 | 5.553 | 5.553 | (1.119) | 143223 | 50.0000 | 47.87 |
| | 45 4-Methyl-2-Pentanone | 43 | 6.322 | 6.322 | (0.824) | 336990 | 100.000 | 96.59 |
| | 46 cis-1,3-Dichloropropene | 75 | 6.153 | 6.153 | (1.239) | 366231 | 50.0000 | 50.22 |
| * | 47 Chlorobenzene-d5 | 117 | 7.668 | 7.668 | (1.000) | 652727 | 50.0000 | |
| $ | 48 Toluene-d8 | 98 | 6.386 | 6.386 | (0.833) | 772486 | 50.0000 | 47.89 |
| | 50 Toluene | 91 | 6.446 | 6.446 | (0.841) | 889029 | 50.0000 | 49.27 |
| | 51 trans-1,3-Dichloropropene | 75 | 6.682 | 6.682 | (1.346) | 309568 | 50.0000 | 51.15 |
| | 52 2-Hexanone | 43 | 7.087 | 7.087 | (0.924) | 232879 | 100.000 | 98.10 |
| | 53 1,1,2-Trichloroethane | 83 | 6.839 | 6.839 | (0.892) | 172833 | 50.0000 | 47.75 |
| | 54 1,3-Dichloropropane | 76 | 6.982 | 6.982 | (0.911) | 345991 | 50.0000 | 48.56 |
| | 55 Dibromochloromethane | 129 | 7.176 | 7.176 | (0.936) | 260477 | 50.0000 | 49.86 |
| | 56 Tetrachloroethene | 164 | 6.925 | 6.925 | (0.903) | 194749 | 50.0000 | 52.17 |
| | 57 1,2-Dibromoethane | 107 | 7.259 | 7.259 | (0.947) | 229442 | 50.0000 | 50.70 |
| | 58 1-Chlorohexane | 55 | 7.694 | 7.694 | (1.550) | 170128 | 50.0000 | 50.81 |
| | 59 Chlorobenzene | 112 | 7.694 | 7.694 | (1.003) | 624151 | 50.0000 | 48.77 |
| | 60 1,1,1,2-Tetrachloroethane | 131 | 7.773 | 7.773 | (1.014) | 235373 | 50.0000 | 49.42 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 61 Ethylbenzene | 106 | 7.799 | 7.799 (1.017) | 311983 | 50.0000 | 51.75 |
| 62 m,p-Xylenes | 106 | 7.904 | 7.904 (1.031) | 785955 | 100.000 | 101.14 |

| | Compounds | QUANT SIG MASS | RT | EXP RT | REL RT | RESPONSE | AMOUNTS CAL-AMT ( ug/l) | ON-COL ( ug/l) |
|---|---|---|---|---|---|---|---|---|
| | 63 o-Xylene | 106 | 8.241 | 8.241 | (1.075) | 385427 | 50.0000 | 50.25 |
| | 64 Styrene | 104 | 8.260 | 8.260 | (1.077) | 673066 | 50.0000 | 52.35 |
| | 66 Bromoform | 173 | 8.410 | 8.410 | (1.097) | 181492 | 50.0000 | 50.14 |
| | 67 Isopropylbenzene | 105 | 8.560 | 8.560 | (1.116) | 920845 | 50.0000 | 52.55 |
| | 68 1,1,2,2-Tetrachloroethane | 83 | 8.837 | 8.837 | (0.915) | 276483 | 50.0000 | 46.43 |
| $ | 69 4-Bromofluorobenzene | 95 | 8.687 | 8.687 | (1.133) | 292753 | 50.0000 | 48.55 |
| * | 70 1,4-Dichlorobenzene-d4 | 152 | 9.662 | 9.662 | (1.000) | 373588 | 50.0000 | |
| | 71 1,2,3-Trichloropropane | 75 | 8.863 | 8.863 | (0.917) | 199888 | 50.0000 | 48.08(M) |
| | 73 n-Propylbenzene | 91 | 8.912 | 8.912 | (0.922) | 1085689 | 50.0000 | 52.46 |
| | 74 Bromobenzene | 156 | 8.803 | 8.803 | (0.911) | 299078 | 50.0000 | 48.79 |
| | 75 1,3,5-Trimethylbenzene | 105 | 9.066 | 9.066 | (0.938) | 793494 | 50.0000 | 51.90 |
| | 76 2-Chlorotoluene | 91 | 8.972 | 8.972 | (0.929) | 670422 | 50.0000 | 49.37 |
| | 77 4-Chlorotoluene | 91 | 9.070 | 9.070 | (0.939) | 782927 | 50.0000 | 50.57 |
| | 78 tert-Butylbenzene | 119 | 9.336 | 9.336 | (0.966) | 652461 | 50.0000 | 52.14 |
| | 79 1,2,4-Trimethylbenzene | 105 | 9.381 | 9.381 | (0.971) | 815460 | 50.0000 | 50.69 |
| | 81 sec-Butylbenzene | 105 | 9.519 | 9.519 | (0.985) | 889679 | 50.0000 | 53.43 |
| | 82 p-Isopropyltoluene | 119 | 9.651 | 9.651 | (0.999) | 810483 | 50.0000 | 54.32 |
| | 83 1,3-Dichlorobenzene | 146 | 9.606 | 9.606 | (0.994) | 520329 | 50.0000 | 51.14 |
| | 84 1,4-Dichlorobenzene | 146 | 9.681 | 9.681 | (1.002) | 544362 | 50.0000 | 49.03 |
| | 86 Benzyl Chloride | 91 | 9.808 | 9.808 | (1.279) | 472387 | 50.0000 | 46.44 |
| | 87 n-Butylbenzene | 91 | 9.995 | 9.995 | (1.035) | 696355 | 50.0000 | 48.48 |
| | 88 1,2-Dichlorobenzene | 146 | 9.992 | 9.992 | (1.034) | 519532 | 50.0000 | 49.58 |
| | 89 1,2-Dibromo-3-Chloropropane | 155 | 10.655 | 10.655 | (1.103) | 48660 | 50.0000 | 51.11 |
| | 90 1,2,4-Trichlorobenzene | 180 | 11.337 | 11.337 | (1.173) | 355455 | 50.0000 | 53.75 |
| | 91 Hexachlorobutadiene | 225 | 11.480 | 11.480 | (1.188) | 155390 | 50.0000 | 52.99 |
| | 92 Naphthalene | 128 | 11.540 | 11.540 | (1.194) | 799829 | 50.0000 | 53.16 |
| | 93 1,2,3-Trichlorobenzene | 180 | 11.742 | 11.742 | (1.215) | 320836 | 50.0000 | 50.66 |
| M | 94 1,2-Dichloroethylene (total) | 96 | | | | 420234 | 100.000 | |
| M | 95 Xylenes (total) | 106 | | | | 1171382 | 150.000 | |
| | 141 Cyclohexane | 56 | 4.121 | 4.121 | (0.987) | 237699 | 50.0000 | 51.49 |
| | 138 Freon TF | 101 | 1.913 | 1.913 | (0.458) | 172155 | 50.0000 | 51.25 |
| | 147 Methylcyclohexane | 55 | 5.377 | 5.377 | (1.083) | 420886 | 50.0000 | 49.62 |
| | 146 Methyl Acetate | 43 | 2.228 | 2.228 | (0.533) | 96420 | 50.0000 | 46.82 |
| | 148 Tert-Butyl alcohol | 59 | 2.423 | 2.423 | (0.580) | 302677 | 1000.00 | 955.26 |
| | 149 Isopropyl Alcohol | 45 | 2.090 | 2.090 | (0.500) | 157082 | 1000.00 | 949.28 |

QC Flag Legend

M - Compound response manually integrated.
H - Operator selected an alternate compound hit.




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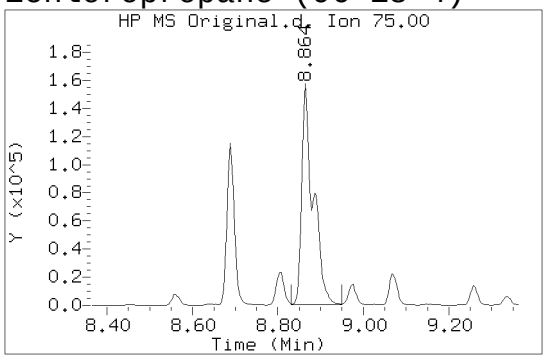
Instrument: voa6.i
Operator: PC
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## 1,2,3-Trichloropropane (96-18-4)

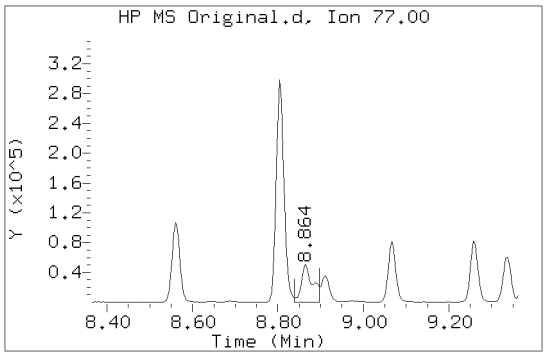
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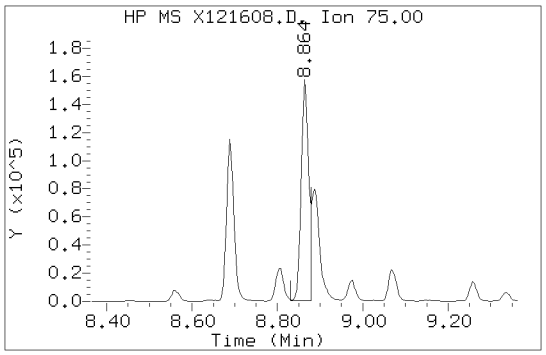
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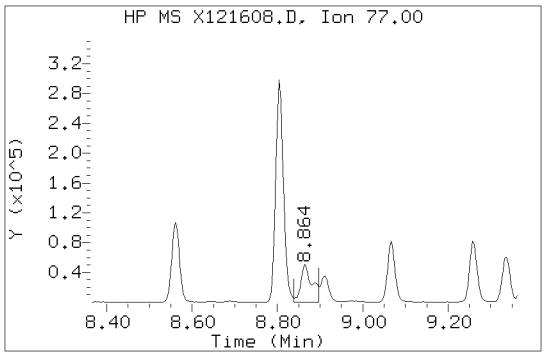
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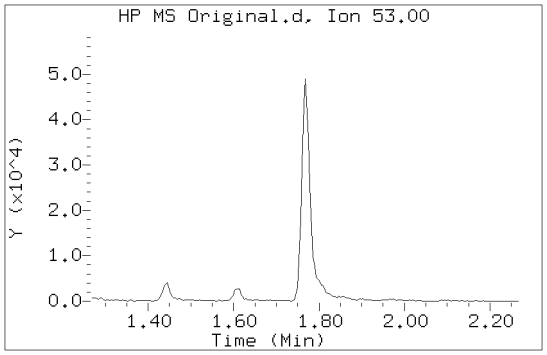
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## Chloroprene (126-99-8)

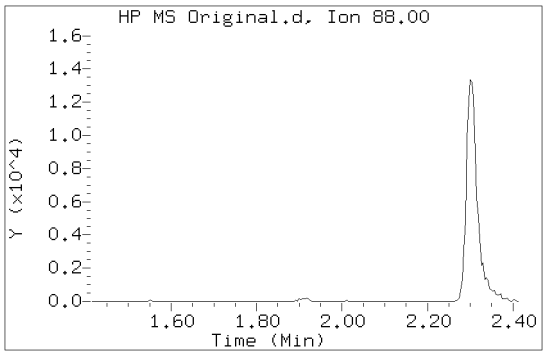
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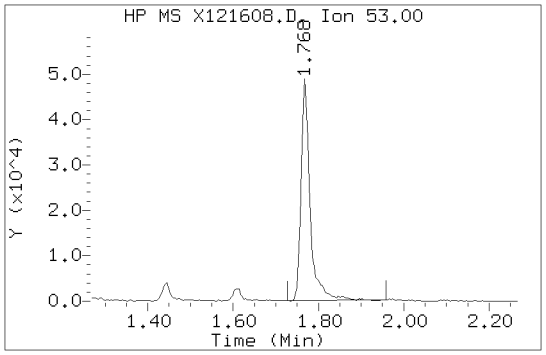
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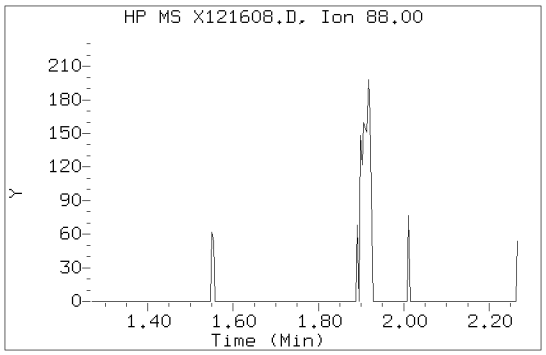
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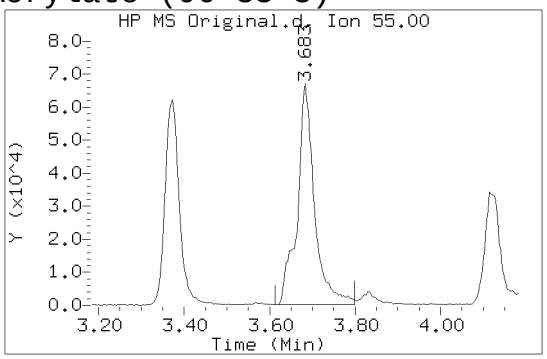


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LabSampID : VSTD050

## Methyl Acrylate (96-33-3)

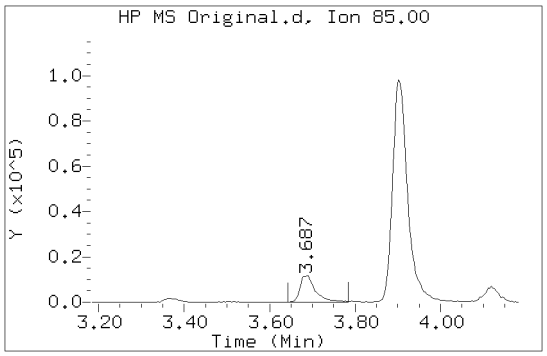
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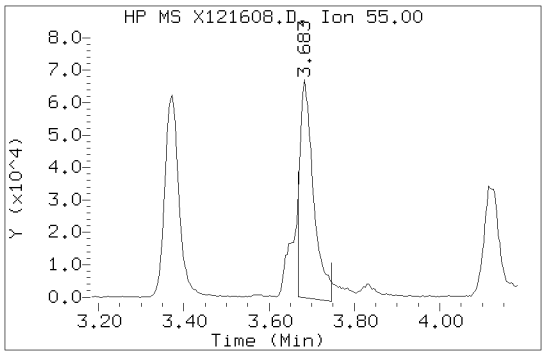
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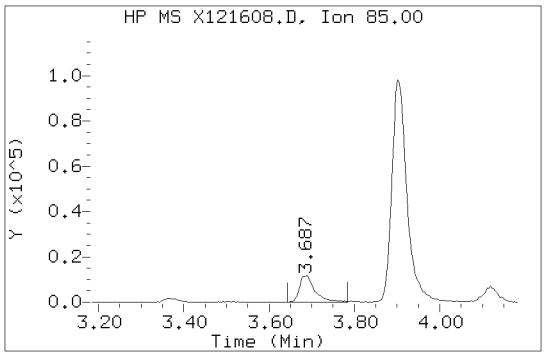
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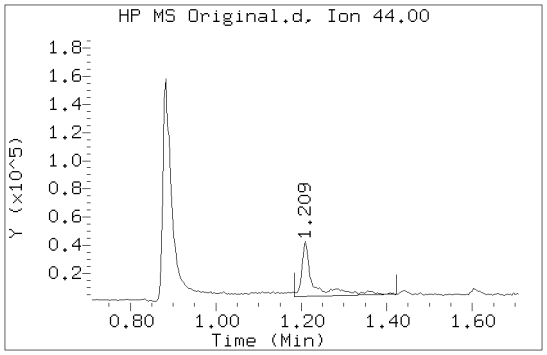
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## Acetaldehyde (75-07-0)

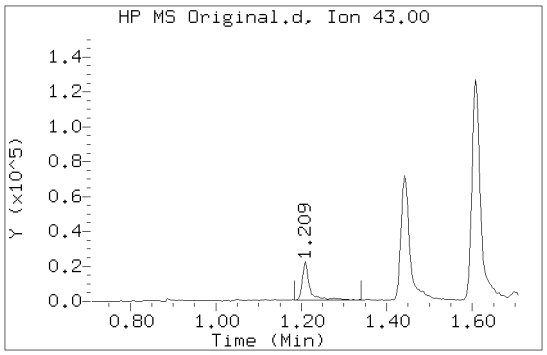
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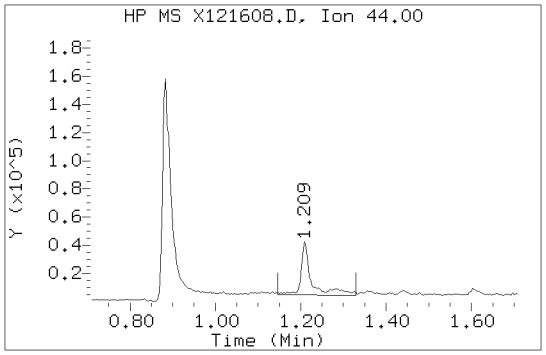
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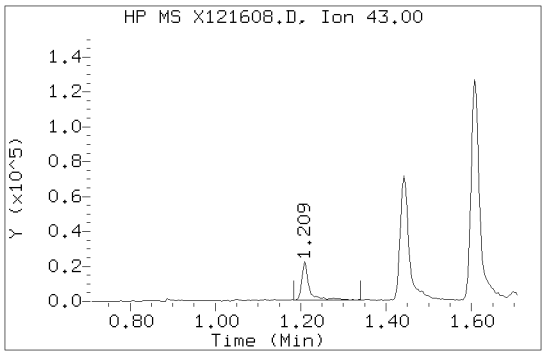
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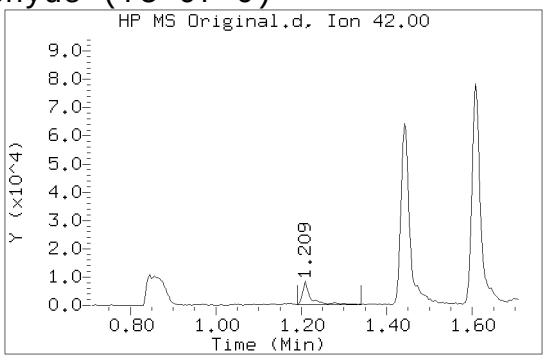
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Acetaldehyde (75-07-0)

Reason Code:

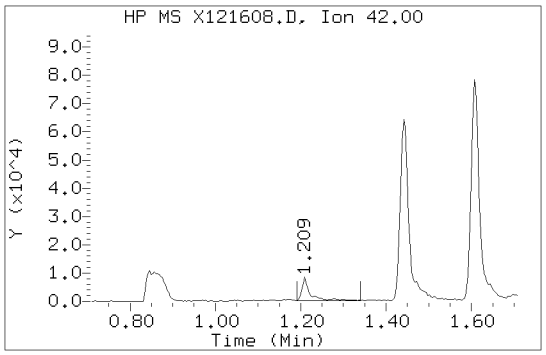
BEFORE

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27-Dec-2022
16:03
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AFTER

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AREA
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HEIGHT
8504
27-Dec-2022
16:06
linh
pham



Data File: \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121609.D  Page 1
Report Date: 27-Dec-2022 16:07

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121609.D
Lab Smp Id: VSTD100  Client Smp ID: VSTD100
Inj Date  : 16-DEC-2022 14:25
Operator  : PC  Inst ID: voa6.i
Smp Info  : VSTD100;VSTD100;1;8;
Misc Info : V6;WATER;0;1;
Comment   :
Method    : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\8260W.m
Meth Date : 27-Dec-2022 16:07 voa6.i  Quant Type: ISTD
Cal Date  : 16-DEC-2022 14:04  Cal File: X121608.D
Als bottle: 10  Calibration Sample, Level: 8
Dil Factor: 1.00000
Integrator: HP RTE  Compound Sublist: 08260V6.sub
Target Version:  4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

| Name | Value | Description |
|---|---|---|
| DF | 1.000 | Dilution Factor |
| Uf | 5.000 | ng unit correction factor |
| Vo | 5.000 | sample purged |
| Cpnd Variable | | Local Compound Variable |

| Compounds | QUANT SIG MASS | RT | EXP RT | REL RT | RESPONSE | AMOUNTS CAL-AMT ( ug/l) | ON-COL ( ug/l) |
|---|---|---|---|---|---|---|---|
| * 1 Pentafluorobenzene | 168 | 4.178 | 4.178 | (1.000) | 454640 | 50.0000 | |
| 135 1,4-Dioxane | 88 | 5.598 | 5.598 | (1.340) | 80329 | 2000.00 | 1932.89 |
| 140 1,3-Butadiene | 54 | 1.160 | 1.160 | (0.278) | 300004 | 100.000 | 96.14 |
| 25 Methacrylonitrile | 41 | 3.822 | 3.822 | (0.915) | 296105 | 100.000 | 91.97 |
| 12 Isobutyl Alcohol | 43 | 4.672 | 4.672 | (1.118) | 1010956 | 2000.00 | 1976.95 |
| 13 Acetonitrile | 39 | 2.195 | 2.195 | (0.525) | 413876 | 1000.00 | 1000.23 |
| 14 Allyl Chloride | 41 | 2.195 | 2.195 | (0.525) | 756242 | 100.000 | 95.96 |
| 4 Propionitrile | 54 | 3.645 | 3.645 | (0.873) | 447087 | 1000.00 | 963.76 |
| 136 n-Hexane | 57 | 2.768 | 2.768 | (0.663) | 330416 | 100.000 | 100.93 |
| 72 trans-1,4-Dichloro-2-butene | 53 | 8.890 | 8.890 | (1.159) | 144667 | 100.000 | 100.47 |
| 194 Acetaldehyde | 44 | 1.209 | 1.209 | (0.289) | 107798 | 400.000 | 394.60(M) |
| 23 Chloroprene | 53 | 1.767 | 1.767 | (0.423) | 146540 | 100.000 | 94.79(M) |
| 145 alpha-Methylstyrene | 118 | 9.257 | 9.257 | (0.958) | 857105 | 100.000 | 100.18 |
| 200 Dimethyl Disulfide | 94 | 6.194 | 6.194 | (0.808) | 912573 | 100.000 | 101.09 |
| 139 Diethyl ether | 59 | 1.752 | 1.752 | (0.420) | 288002 | 100.000 | 94.80 |
| 130 Ethyl Acetate | 43 | 3.649 | 3.649 | (0.873) | 318062 | 100.000 | 89.65 |
| 40 Methyl Methacrylate | 41 | 5.606 | 5.606 | (1.342) | 295199 | 100.000 | 95.22 |
| 49 Ethyl Methacrylate | 69 | 6.712 | 6.712 | (1.352) | 311883 | 100.000 | 96.06 |
| 132 n-Butanol | 56 | 5.253 | 5.253 | (1.258) | 124057 | 2000.00 | 1971.40 |
| 142 Tetrahydrofuran | 42 | 3.840 | 3.840 | (0.919) | 109518 | 200.000 | 196.74 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 150 | Allyl alcohol | 57 | 2.768 | 2.768 (0.663) | 330416 | 2000.00 | 1871.09 |
| 166 | 1,2,3-Trimethylbenzene | 105 | 9.729 | 9.729 (1.007) | 1772216 | 100.000 | 95.31 |

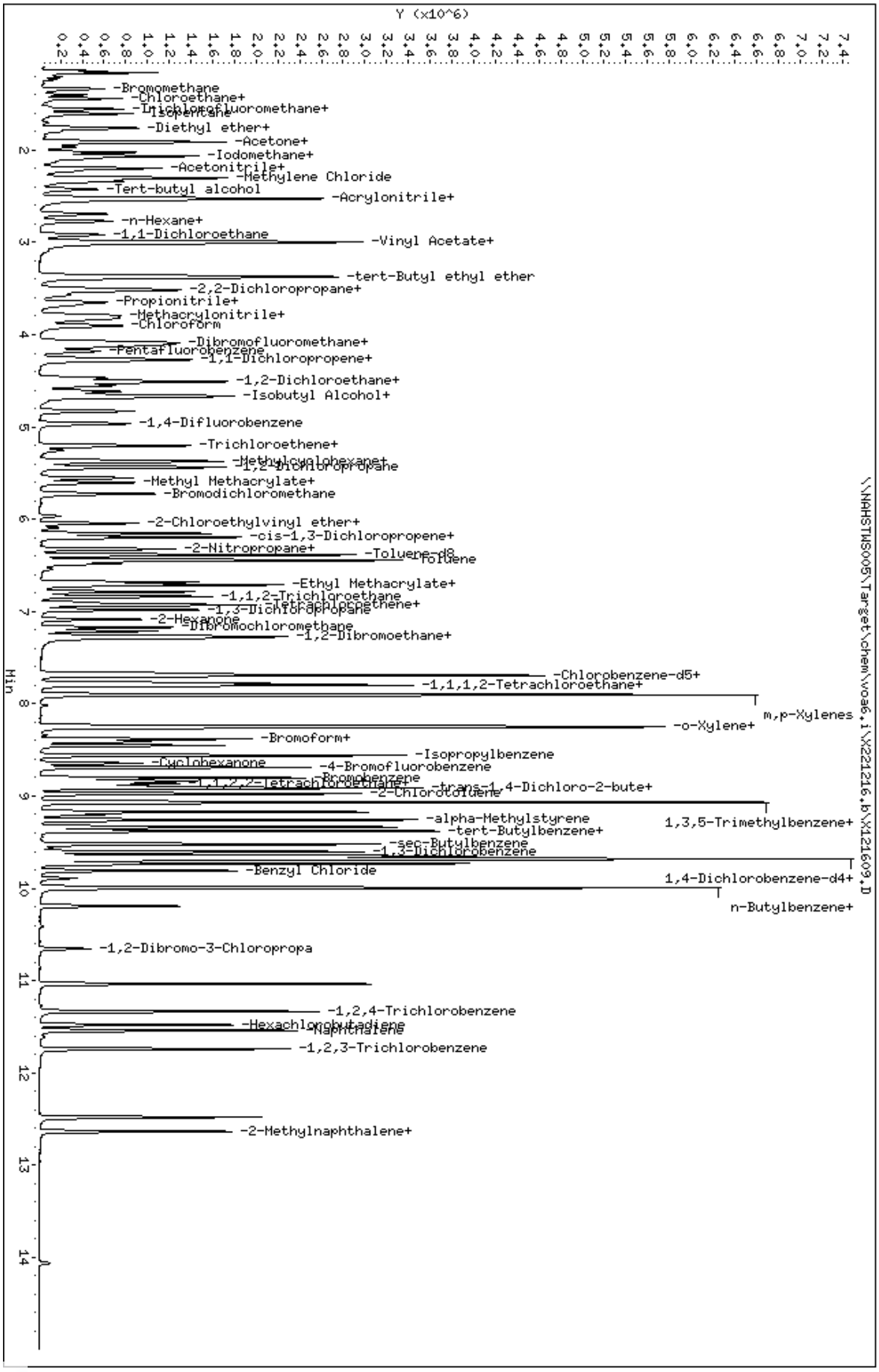
| | Compounds | QUANT SIG MASS | RT | EXP RT | REL RT | RESPONSE | AMOUNTS CAL-AMT ( ug/l) | ON-COL ( ug/l) |
|---|---|---|---|---|---|---|---|---|
| | 131 Methyl Acrylate | 55 | 3.683 | 3.683 | (0.882) | 308372 | 100.000 | 99.90(M) |
| | 162 Butyl acrylate | 55 | 8.249 | 8.249 | (1.076) | 901265 | 100.000 | 103.44 |
| | 2 Dichlorodifluoromethane | 85 | 0.969 | 0.969 | (0.232) | 309019 | 100.000 | 96.81 |
| | 3 Chloromethane | 50 | 1.078 | 1.078 | (0.258) | 388163 | 100.000 | 92.40 |
| | 5 Vinyl Chloride | 62 | 1.141 | 1.141 | (0.273) | 390567 | 100.000 | 98.34 |
| | 6 Bromomethane | 94 | 1.336 | 1.336 | (0.320) | 284165 | 100.000 | 93.02 |
| | 7 Chloroethane | 64 | 1.400 | 1.400 | (0.335) | 261091 | 100.000 | 94.45 |
| | 8 Trichlorofluoromethane | 101 | 1.557 | 1.557 | (0.373) | 543907 | 100.000 | 97.86 |
| | 9 Acrolein | 56 | 1.441 | 1.441 | (0.345) | 60756 | 200.000 | 192.70 |
| | 10 Acetone | 43 | 1.970 | 1.970 | (0.472) | 243517 | 200.000 | 190.92 |
| | 11 1,1-Dichloroethene | 96 | 1.910 | 1.910 | (0.457) | 329394 | 100.000 | 95.46 |
| | 15 Iodomethane | 142 | 2.026 | 2.026 | (0.485) | 958603 | 200.000 | 197.72 |
| | 16 Acrylonitrile | 53 | 2.528 | 2.528 | (0.605) | 235604 | 200.000 | 201.32 |
| | 17 Methylene Chloride | 84 | 2.300 | 2.300 | (0.550) | 423827 | 100.000 | 89.54 |
| | 18 Methyl tert-butyl ether | 73 | 2.532 | 2.532 | (0.606) | 1078258 | 100.000 | 95.46 |
| | 19 Carbon Disulfide | 76 | 2.063 | 2.063 | (0.494) | 1765599 | 200.000 | 195.57 |
| | 20 trans-1,2-Dichloroethene | 96 | 2.524 | 2.524 | (0.604) | 376933 | 100.000 | 97.60 |
| | 21 Vinyl Acetate | 43 | 2.993 | 2.993 | (0.716) | 1955305 | 200.000 | 197.21 |
| | 22 1,1-Dichloroethane | 63 | 2.918 | 2.918 | (0.699) | 641083 | 100.000 | 94.59 |
| | 24 2-Butanone | 43 | 3.570 | 3.570 | (0.855) | 264221 | 200.000 | 192.38(H) |
| | 26 2,2-Dichloropropane | 77 | 3.507 | 3.507 | (0.839) | 554902 | 100.000 | 96.43 |
| | 27 cis-1,2-Dichloroethene | 96 | 3.522 | 3.522 | (0.843) | 443532 | 100.000 | 94.37 |
| | 28 Chloroform | 83 | 3.904 | 3.904 | (0.935) | 715830 | 100.000 | 94.23 |
| | 29 Bromochloromethane | 128 | 3.792 | 3.792 | (0.908) | 239022 | 100.000 | 92.88 |
| $ | 30 Dibromofluoromethane | 113 | 4.095 | 4.095 | (0.980) | 438954 | 100.000 | 100.72 |
| | 31 1,1,1-Trichloroethane | 97 | 4.080 | 4.080 | (0.977) | 583361 | 100.000 | 96.79 |
| | 32 1,1-Dichloropropene | 75 | 4.275 | 4.275 | (0.861) | 496096 | 100.000 | 101.35 |
| | 33 1,2-Dichloroethane | 62 | 4.552 | 4.552 | (0.917) | 553661 | 100.000 | 98.01 |
| | 34 Carbon Tetrachloride | 117 | 4.260 | 4.260 | (0.858) | 487488 | 100.000 | 93.26 |
| $ | 35 1,2-Dichloroethane-d4 | 65 | 4.466 | 4.466 | (1.069) | 455890 | 100.000 | 98.67 |
| * | 36 1,4-Difluorobenzene | 114 | 4.965 | 4.965 | (1.000) | 689427 | 50.0000 | |
| | 37 Benzene | 78 | 4.508 | 4.508 | (0.908) | 1590142 | 100.000 | 96.58 |
| | 38 Trichloroethene | 130 | 5.205 | 5.205 | (1.048) | 456948 | 100.000 | 97.85 |
| | 39 Bromodichloromethane | 83 | 5.722 | 5.722 | (1.153) | 587419 | 100.000 | 95.07 |
| | 41 2-Chloroethylvinyl ether | 63 | 6.044 | 6.044 | (1.217) | 345852 | 200.000 | 196.75 |
| | 42 1,2-Dichloropropane | 63 | 5.433 | 5.433 | (1.094) | 420835 | 100.000 | 96.09 |
| | 44 Dibromomethane | 93 | 5.550 | 5.550 | (1.118) | 280146 | 100.000 | 94.11 |
| | 45 4-Methyl-2-Pentanone | 43 | 6.322 | 6.322 | (0.824) | 671115 | 200.000 | 188.25 |
| | 46 cis-1,3-Dichloropropene | 75 | 6.153 | 6.153 | (1.239) | 735867 | 100.000 | 101.41 |
| * | 47 Chlorobenzene-d5 | 117 | 7.668 | 7.668 | (1.000) | 666948 | 50.0000 | |
| $ | 48 Toluene-d8 | 98 | 6.386 | 6.386 | (0.833) | 1602890 | 100.000 | 97.25 |
| | 50 Toluene | 91 | 6.446 | 6.446 | (0.841) | 1761917 | 100.000 | 95.57 |
| | 51 trans-1,3-Dichloropropene | 75 | 6.678 | 6.678 | (1.345) | 618784 | 100.000 | 102.75 |
| | 52 2-Hexanone | 43 | 7.087 | 7.087 | (0.924) | 458639 | 200.000 | 189.09 |
| | 53 1,1,2-Trichloroethane | 83 | 6.839 | 6.839 | (0.892) | 342194 | 100.000 | 92.52 |
| | 54 1,3-Dichloropropane | 76 | 6.982 | 6.982 | (0.911) | 682500 | 100.000 | 93.75 |
| | 55 Dibromochloromethane | 129 | 7.173 | 7.173 | (0.935) | 521219 | 100.000 | 97.64 |
| | 56 Tetrachloroethene | 164 | 6.925 | 6.925 | (0.903) | 373651 | 100.000 | 97.96 |
| | 57 1,2-Dibromoethane | 107 | 7.259 | 7.259 | (0.947) | 453499 | 100.000 | 98.07 |
| | 58 1-Chlorohexane | 55 | 7.694 | 7.694 | (1.550) | 326538 | 100.000 | 98.00 |
| | 59 Chlorobenzene | 112 | 7.694 | 7.694 | (1.003) | 1229287 | 100.000 | 94.01 |
| | 60 1,1,1,2-Tetrachloroethane | 131 | 7.773 | 7.773 | (1.014) | 472962 | 100.000 | 97.19 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 61 Ethylbenzene | 106 | 7.799 | 7.799 (1.017) | 612289 | 100.000 | 99.40 |
| 62 m,p-Xylenes | 106 | 7.904 | 7.904 (1.031) | 1556563 | 200.000 | 196.03 |

| | Compounds | QUANT SIG MASS | RT | EXP RT | REL RT | RESPONSE | AMOUNTS CAL-AMT ( ug/l) | ON-COL ( ug/l) |
|---|---|---|---|---|---|---|---|---|
| | 63 o-Xylene | 106 | 8.241 | 8.241 | (1.075) | 767814 | 100.000 | 97.97 |
| | 64 Styrene | 104 | 8.260 | 8.260 | (1.077) | 1350780 | 100.000 | 102.83 |
| | 66 Bromoform | 173 | 8.410 | 8.410 | (1.097) | 367943 | 100.000 | 99.50 |
| | 67 Isopropylbenzene | 105 | 8.560 | 8.560 | (1.116) | 1818857 | 100.000 | 101.58 |
| | 68 1,1,2,2-Tetrachloroethane | 83 | 8.837 | 8.837 | (0.915) | 554091 | 100.000 | 90.03 |
| $ | 69 4-Bromofluorobenzene | 95 | 8.687 | 8.687 | (1.133) | 615584 | 100.000 | 99.86 |
| * | 70 1,4-Dichlorobenzene-d4 | 152 | 9.662 | 9.662 | (1.000) | 386107 | 50.0000 | |
| | 71 1,2,3-Trichloropropane | 75 | 8.863 | 8.863 | (0.917) | 407425 | 100.000 | 94.83(M) |
| | 73 n-Propylbenzene | 91 | 8.912 | 8.912 | (0.922) | 2152414 | 100.000 | 100.64 |
| | 74 Bromobenzene | 156 | 8.803 | 8.803 | (0.911) | 602819 | 100.000 | 95.16 |
| | 75 1,3,5-Trimethylbenzene | 105 | 9.066 | 9.066 | (0.938) | 1603520 | 100.000 | 101.49 |
| | 76 2-Chlorotoluene | 91 | 8.972 | 8.972 | (0.929) | 1326500 | 100.000 | 94.51 |
| | 77 4-Chlorotoluene | 91 | 9.070 | 9.070 | (0.939) | 1587855 | 100.000 | 99.24 |
| | 78 tert-Butylbenzene | 119 | 9.336 | 9.336 | (0.966) | 1287608 | 100.000 | 99.56 |
| | 79 1,2,4-Trimethylbenzene | 105 | 9.381 | 9.381 | (0.971) | 1640529 | 100.000 | 98.68 |
| | 81 sec-Butylbenzene | 105 | 9.519 | 9.519 | (0.985) | 1778581 | 100.000 | 103.36 |
| | 82 p-Isopropyltoluene | 119 | 9.651 | 9.651 | (0.999) | 1606121 | 100.000 | 104.16 |
| | 83 1,3-Dichlorobenzene | 146 | 9.606 | 9.606 | (0.994) | 1039293 | 100.000 | 98.84 |
| | 84 1,4-Dichlorobenzene | 146 | 9.681 | 9.681 | (1.002) | 1114780 | 100.000 | 97.16 |
| | 86 Benzyl Chloride | 91 | 9.808 | 9.808 | (1.279) | 1009234 | 100.000 | 94.18 |
| | 87 n-Butylbenzene | 91 | 9.992 | 9.992 | (1.034) | 1425779 | 100.000 | 94.31 |
| | 88 1,2-Dichlorobenzene | 146 | 9.992 | 9.992 | (1.034) | 1054319 | 100.000 | 97.36 |
| | 89 1,2-Dibromo-3-Chloropropane | 155 | 10.655 | 10.655 | (1.103) | 94321 | 100.000 | 95.78 |
| | 90 1,2,4-Trichlorobenzene | 180 | 11.338 | 11.338 | (1.173) | 697257 | 100.000 | 102.03 |
| | 91 Hexachlorobutadiene | 225 | 11.480 | 11.480 | (1.188) | 299042 | 100.000 | 97.63 |
| | 92 Naphthalene | 128 | 11.540 | 11.540 | (1.194) | 1592534 | 100.000 | 102.42 |
| | 93 1,2,3-Trichlorobenzene | 180 | 11.739 | 11.739 | (1.215) | 642199 | 100.000 | 98.12 |
| M | 94 1,2-Dichloroethylene (total) | 96 | | | | 820465 | 200.000 | |
| M | 95 Xylenes (total) | 106 | | | | 2324377 | 300.000 | |
| | 141 Cyclohexane | 56 | 4.118 | 4.118 | (0.986) | 432198 | 100.000 | 93.19 |
| | 138 Freon TF | 101 | 1.913 | 1.913 | (0.458) | 327614 | 100.000 | 98.16 |
| | 147 Methylcyclohexane | 55 | 5.377 | 5.377 | (1.083) | 862071 | 100.000 | 102.15(A) |
| | 146 Methyl Acetate | 43 | 2.228 | 2.228 | (0.533) | 196542 | 100.000 | 96.07 |
| | 148 Tert-Butyl alcohol | 59 | 2.427 | 2.427 | (0.581) | 592215 | 2000.00 | 1881.19 |
| | 149 Isopropyl Alcohol | 45 | 2.093 | 2.093 | (0.501) | 321288 | 2000.00 | 1954.21 |

## QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.
M - Compound response manually integrated.
H - Operator selected an alternate compound hit.




Data File: \\NAHSTWS005\Target\chem\voa6.i\x221216.b\x121609.D
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Client ID: VSTD100
Sample Info: VSTD100;VSTD100;1;8;
Purge Volume: 5.0
Column phase: DB624

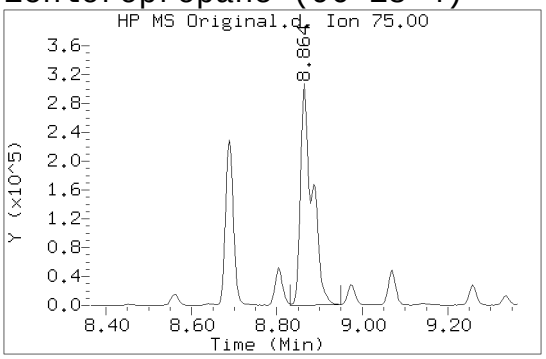
Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121609.D
Inj Date : 16-DEC-2022 14:25
InstruID : voa6.i
LabSampID : VSTD100

## 1,2,3-Trichloropropane (96-18-4)

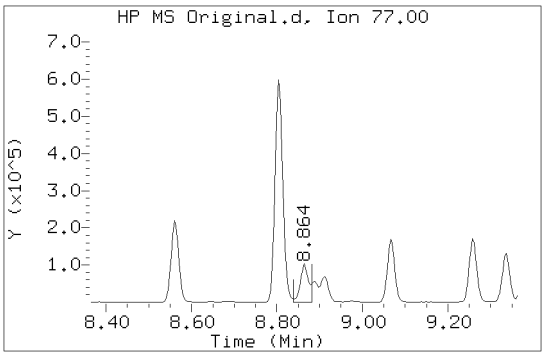
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pham




### BEFORE

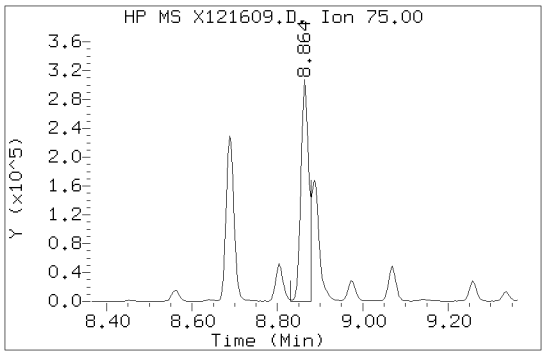
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Reason Code:

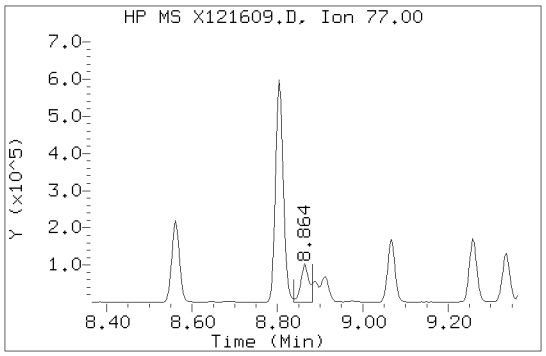
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### AFTER

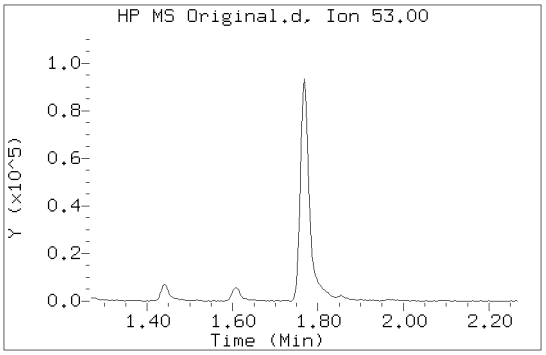
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## Chloroprene (126-99-8)

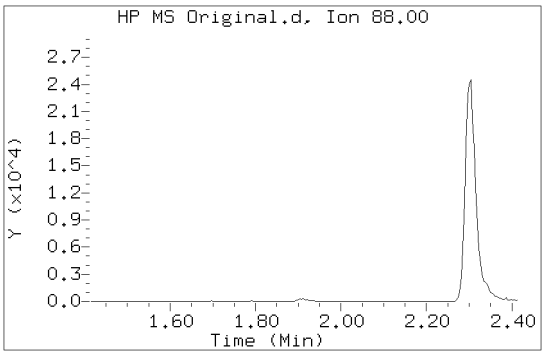
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### BEFORE

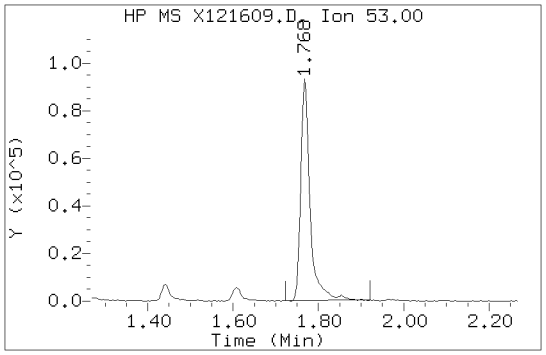
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Reason Code:

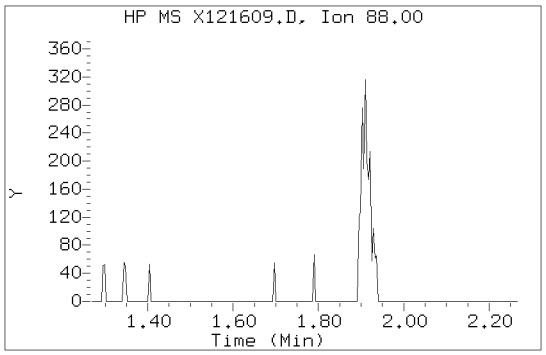
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27-Dec-2022
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linh
pham

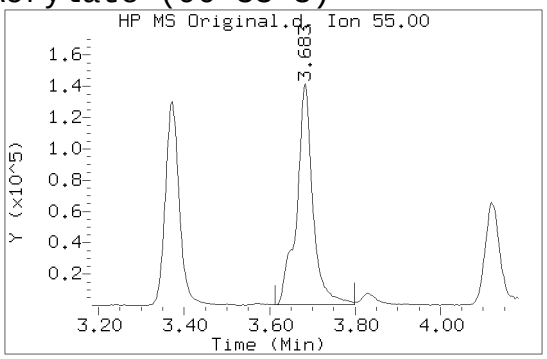


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Inj Date : 16-DEC-2022 14:25
InstruID : voa6.i
LabSampID : VSTD100

## Methyl Acrylate (96-33-3)

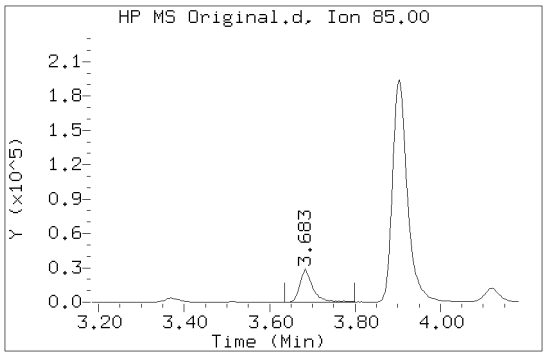
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linh
pham




**BEFORE**

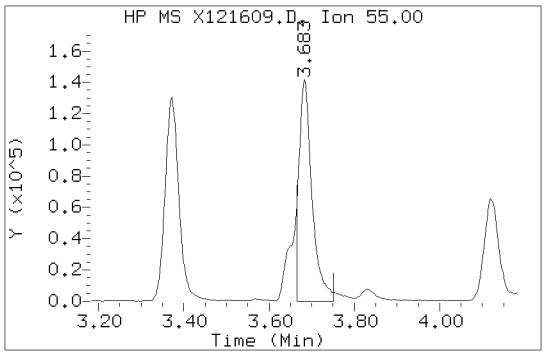
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Reason Code:

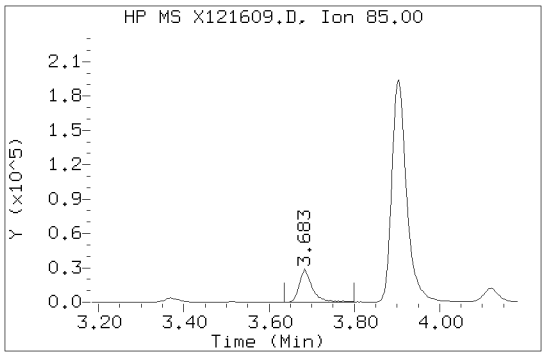
**AFTER**

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27-Dec-2022
16:06
linh
pham




**AFTER**

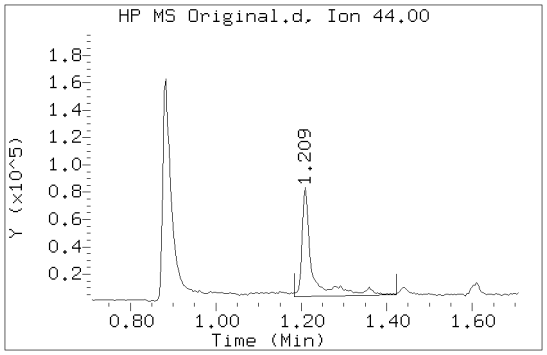
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## Acetaldehyde (75-07-0)

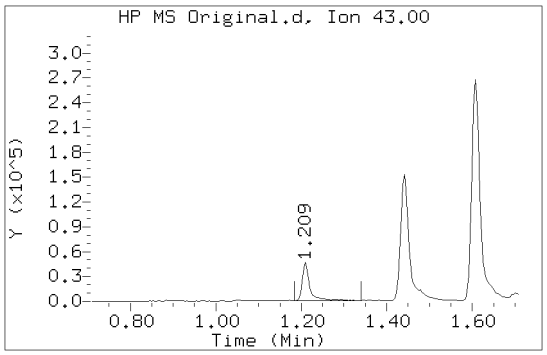
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**BEFORE**

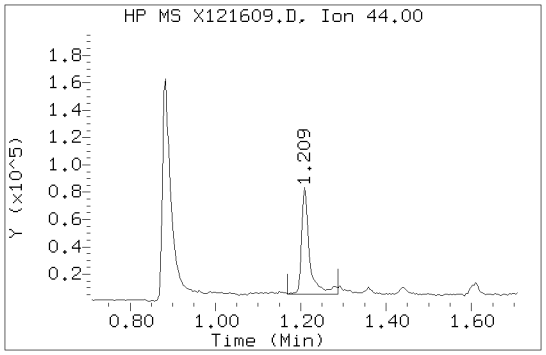
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Reason Code:

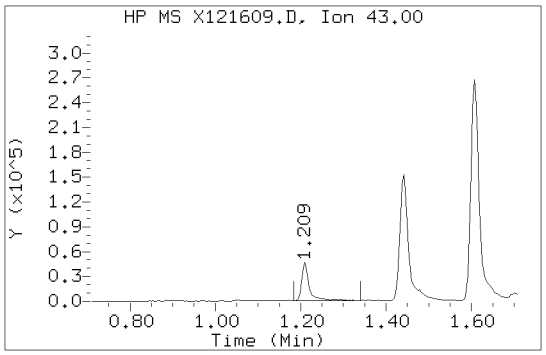
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**AFTER**

MASS
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46134
27-Dec-2022
16:06
linh
pham



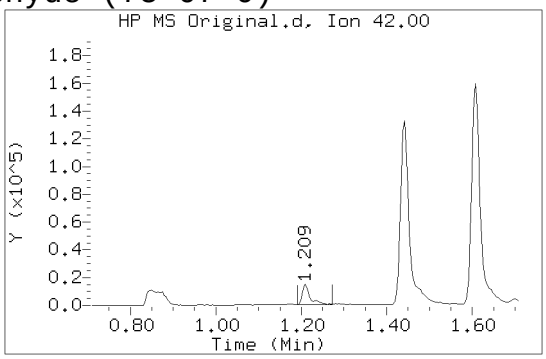
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LabSampID : VSTD100

Acetaldehyde (75-07-0)

Reason Code:

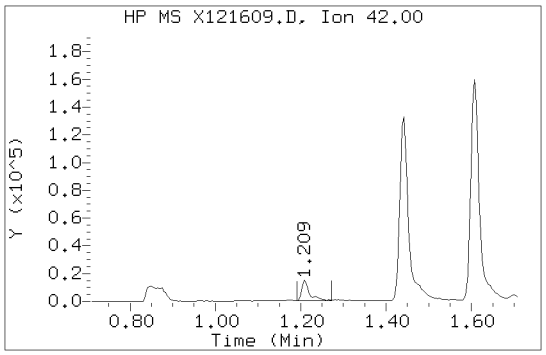
BEFORE

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27-Dec-2022
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AFTER

MASS
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AREA
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HEIGHT
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27-Dec-2022
16:06
linh
pham



Data File: \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121610.D Page 1
Report Date: 27-Dec-2022 16:07

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121610.D
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Inj Date : 16-DEC-2022 14:46
Operator : PC Inst ID: voa6.i
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Comment :
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Meth Date : 27-Dec-2022 16:07 voa6.i Quant Type: ISTD
Cal Date : 16-DEC-2022 14:25 Cal File: X121609.D
Als bottle: 11 Calibration Sample, Level: 9
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 08260V6.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

| Name | Value | Description |
|---|---|---|
| DF | 1.000 | Dilution Factor |
| Uf | 5.000 | ng unit correction factor |
| Vo | 5.000 | sample purged |
| Cpnd Variable | | Local Compound Variable |

| | Compounds | QUANT SIG MASS | RT | EXP RT | REL RT | RESPONSE | AMOUNTS CAL-AMT ( ug/l) | ON-COL ( ug/l) |
|---|---|---|---|---|---|---|---|---|
| * 1 | Pentafluorobenzene | 168 | 4.177 | 4.177 | (1.000) | 447266 | 50.0000 | |
| 135 | 1,4-Dioxane | 88 | 5.598 | 5.598 | (1.340) | 128845 | 3000.00 | 3151.41 |
| 140 | 1,3-Butadiene | 54 | 1.160 | 1.160 | (0.278) | 468966 | 150.000 | 152.77 |
| 25 | Methacrylonitrile | 41 | 3.818 | 3.818 | (0.914) | 457301 | 150.000 | 144.39 |
| 12 | Isobutyl Alcohol | 43 | 4.672 | 4.672 | (1.118) | 1595753 | 3000.00 | 3171.99 |
| 13 | Acetonitrile | 39 | 2.194 | 2.194 | (0.525) | 642798 | 1500.00 | 1579.09 |
| 14 | Allyl Chloride | 41 | 2.194 | 2.194 | (0.525) | 1164663 | 150.000 | 150.22 |
| 4 | Propionitrile | 54 | 3.649 | 3.649 | (0.873) | 694740 | 1500.00 | 1522.31 |
| 136 | n-Hexane | 57 | 2.768 | 2.768 | (0.663) | 533876 | 150.000 | 165.78 |
| 72 | trans-1,4-Dichloro-2-butene | 53 | 8.889 | 8.889 | (1.159) | 234252 | 150.000 | 161.53 |
| 194 | Acetaldehyde | 44 | 1.209 | 1.209 | (0.289) | 161053 | 600.000 | 611.34(M) |
| 23 | Chloroprene | 53 | 1.767 | 1.767 | (0.423) | 225733 | 150.000 | 148.43 |
| 145 | alpha-Methylstyrene | 118 | 9.257 | 9.257 | (0.958) | 1351001 | 150.000 | 157.73 |
| 200 | Dimethyl Disulfide | 94 | 6.198 | 6.198 | (0.808) | 1420820 | 150.000 | 156.27 |
| 139 | Diethyl ether | 59 | 1.752 | 1.752 | (0.419) | 443624 | 150.000 | 148.44 |
| 130 | Ethyl Acetate | 43 | 3.649 | 3.649 | (0.873) | 516433 | 150.000 | 147.97 |
| 40 | Methyl Methacrylate | 41 | 5.602 | 5.602 | (1.341) | 465959 | 150.000 | 152.78 |
| 49 | Ethyl Methacrylate | 69 | 6.712 | 6.712 | (1.352) | 517063 | 150.000 | 157.90 |
| 132 | n-Butanol | 56 | 5.253 | 5.253 | (1.258) | 210842 | 3000.00 | 3100.52 |
| 142 | Tetrahydrofuran | 42 | 3.840 | 3.840 | (0.919) | 162133 | 300.000 | 297.65 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 150 | Allyl alcohol | 57 | 2.768 | 2.768 (0.663) | 533876 | 3000.00 | 3073.09 |
| 166 | 1,2,3-Trimethylbenzene | 105 | 9.729 | 9.729 (1.007) | 2744011 | 150.000 | 147.41 |

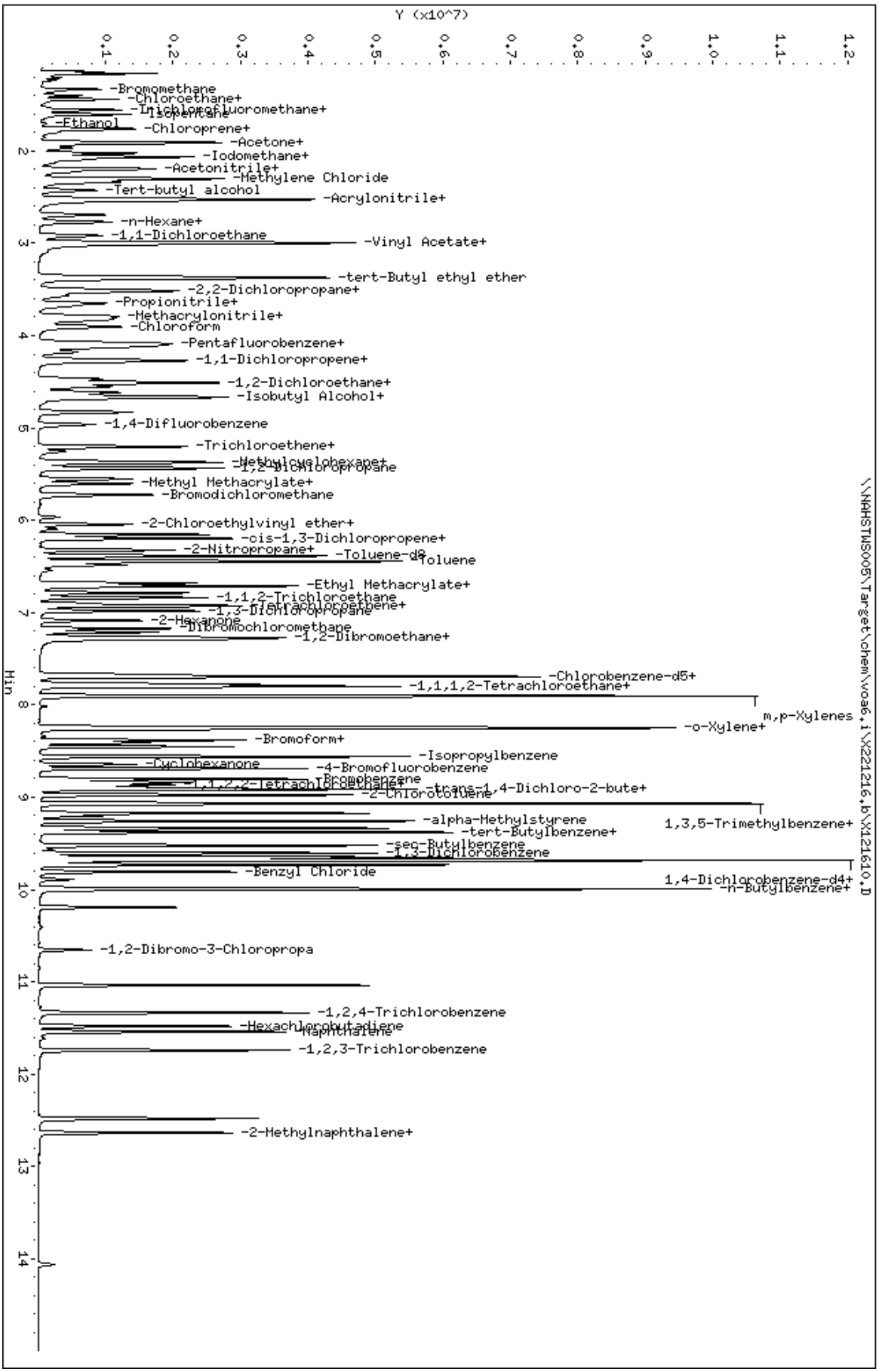
| | | | QUANT SIG | | | | | AMOUNTS | |
|---|---|---|---|---|---|---|---|---|---|
| | | Compounds | MASS | RT | EXP RT | REL RT | RESPONSE | CAL-AMT ( ug/l) | ON-COL ( ug/l) |
| | 131 | Methyl Acrylate | 55 | 3.683 | 3.683 | (0.882) | 479571 | 150.000 | 157.93(M) |
| | 162 | Butyl acrylate | 55 | 8.248 | 8.248 | (1.076) | 1470193 | 150.000 | 167.53 |
| | 2 | Dichlorodifluoromethane | 85 | 0.969 | 0.969 | (0.232) | 476130 | 150.000 | 151.40 |
| | 3 | Chloromethane | 50 | 1.077 | 1.077 | (0.258) | 621048 | 150.000 | 148.89 |
| | 5 | Vinyl Chloride | 62 | 1.141 | 1.141 | (0.273) | 602774 | 150.000 | 154.27 |
| | 6 | Bromomethane | 94 | 1.332 | 1.332 | (0.319) | 470318 | 150.000 | 155.29 |
| | 7 | Chloroethane | 64 | 1.400 | 1.400 | (0.335) | 409168 | 150.000 | 150.45 |
| | 8 | Trichlorofluoromethane | 101 | 1.557 | 1.557 | (0.373) | 866865 | 150.000 | 158.54 |
| | 9 | Acrolein | 56 | 1.441 | 1.441 | (0.345) | 96139 | 300.000 | 308.25 |
| | 10 | Acetone | 43 | 1.969 | 1.969 | (0.472) | 373504 | 300.000 | 297.68 |
| | 11 | 1,1-Dichloroethene | 96 | 1.910 | 1.910 | (0.457) | 516820 | 150.000 | 152.24 |
| | 15 | Iodomethane | 142 | 2.022 | 2.022 | (0.484) | 1554547 | 300.000 | 304.69 |
| | 16 | Acrylonitrile | 53 | 2.528 | 2.528 | (0.605) | 371872 | 300.000 | 323.00 |
| | 17 | Methylene Chloride | 84 | 2.299 | 2.299 | (0.550) | 656037 | 150.000 | 140.89 |
| | 18 | Methyl tert-butyl ether | 73 | 2.532 | 2.532 | (0.606) | 1661314 | 150.000 | 149.51 |
| | 19 | Carbon Disulfide | 76 | 2.063 | 2.063 | (0.494) | 2747788 | 300.000 | 309.38 |
| | 20 | trans-1,2-Dichloroethene | 96 | 2.524 | 2.524 | (0.604) | 579939 | 150.000 | 152.65 |
| | 21 | Vinyl Acetate | 43 | 2.993 | 2.993 | (0.716) | 3127175 | 300.000 | 320.61 |
| | 22 | 1,1-Dichloroethane | 63 | 2.918 | 2.918 | (0.699) | 993924 | 150.000 | 149.06 |
| | 24 | 2-Butanone | 43 | 3.570 | 3.570 | (0.855) | 407629 | 300.000 | 299.97(H) |
| | 26 | 2,2-Dichloropropane | 77 | 3.506 | 3.506 | (0.839) | 858853 | 150.000 | 151.71 |
| | 27 | cis-1,2-Dichloroethene | 96 | 3.521 | 3.521 | (0.843) | 693846 | 150.000 | 150.07 |
| | 28 | Chloroform | 83 | 3.904 | 3.904 | (0.935) | 1135322 | 150.000 | 151.92 |
| | 29 | Bromochloromethane | 128 | 3.791 | 3.791 | (0.908) | 379595 | 150.000 | 149.95 |
| $ | 30 | Dibromofluoromethane | 113 | 4.095 | 4.095 | (0.980) | 652724 | 150.000 | 152.32 |
| | 31 | 1,1,1-Trichloroethane | 97 | 4.080 | 4.080 | (0.977) | 907111 | 150.000 | 152.99 |
| | 32 | 1,1-Dichloropropene | 75 | 4.279 | 4.279 | (0.862) | 766313 | 150.000 | 155.22 |
| | 33 | 1,2-Dichloroethane | 62 | 4.552 | 4.552 | (0.917) | 857022 | 150.000 | 150.42 |
| | 34 | Carbon Tetrachloride | 117 | 4.264 | 4.264 | (0.859) | 758288 | 150.000 | 143.83 |
| $ | 35 | 1,2-Dichloroethane-d4 | 65 | 4.470 | 4.470 | (1.070) | 686218 | 150.000 | 150.83 |
| * | 36 | 1,4-Difluorobenzene | 114 | 4.965 | 4.965 | (1.000) | 695375 | 50.0000 | |
| | 37 | Benzene | 78 | 4.511 | 4.511 | (0.909) | 2450385 | 150.000 | 147.56 |
| | 38 | Trichloroethene | 130 | 5.205 | 5.205 | (1.048) | 707016 | 150.000 | 150.11 |
| | 39 | Bromodichloromethane | 83 | 5.722 | 5.722 | (1.153) | 932632 | 150.000 | 149.65 |
| | 41 | 2-Chloroethylvinyl ether | 63 | 6.044 | 6.044 | (1.217) | 534005 | 300.000 | 301.19 |
| | 42 | 1,2-Dichloropropane | 63 | 5.433 | 5.433 | (1.094) | 658007 | 150.000 | 148.96 |
| | 44 | Dibromomethane | 93 | 5.549 | 5.549 | (1.118) | 444851 | 150.000 | 148.16 |
| | 45 | 4-Methyl-2-Pentanone | 43 | 6.325 | 6.325 | (0.825) | 1052577 | 300.000 | 293.14 |
| | 46 | cis-1,3-Dichloropropene | 75 | 6.153 | 6.153 | (1.239) | 1159982 | 150.000 | 158.49 |
| * | 47 | Chlorobenzene-d5 | 117 | 7.667 | 7.667 | (1.000) | 671780 | 50.0000 | |
| $ | 48 | Toluene-d8 | 98 | 6.385 | 6.385 | (0.833) | 2346444 | 150.000 | 141.35 |
| | 50 | Toluene | 91 | 6.445 | 6.445 | (0.841) | 2724692 | 150.000 | 146.73 |
| | 51 | trans-1,3-Dichloropropene | 75 | 6.682 | 6.682 | (1.346) | 982044 | 150.000 | 161.68 |
| | 52 | 2-Hexanone | 43 | 7.086 | 7.086 | (0.924) | 738082 | 300.000 | 302.12 |
| | 53 | 1,1,2-Trichloroethane | 83 | 6.839 | 6.839 | (0.892) | 540625 | 150.000 | 145.13 |
| | 54 | 1,3-Dichloropropane | 76 | 6.981 | 6.981 | (0.911) | 1079961 | 150.000 | 147.29 |
| | 55 | Dibromochloromethane | 129 | 7.176 | 7.176 | (0.936) | 822094 | 150.000 | 152.90 |
| | 56 | Tetrachloroethene | 164 | 6.929 | 6.929 | (0.904) | 574499 | 150.000 | 149.53 |
| | 57 | 1,2-Dibromoethane | 107 | 7.259 | 7.259 | (0.947) | 715678 | 150.000 | 153.66 |
| | 58 | 1-Chlorohexane | 55 | 7.697 | 7.697 | (1.550) | 522502 | 150.000 | 155.48 |
| | 59 | Chlorobenzene | 112 | 7.694 | 7.694 | (1.003) | 1944205 | 150.000 | 147.62 |
| | 60 | 1,1,1,2-Tetrachloroethane | 131 | 7.772 | 7.772 | (1.014) | 744470 | 150.000 | 151.89 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 61 Ethylbenzene | 106 | 7.799 | 7.799 (1.017) | 946928 | 150.000 | 152.63 |
| 62 m,p-Xylenes | 106 | 7.904 | 7.904 (1.031) | 2421267 | 300.000 | 302.75 |

| | Compounds | QUANT SIG MASS | RT | EXP RT | REL RT | RESPONSE | AMOUNTS CAL-AMT ( ug/l) | ON-COL ( ug/l) |
|---|---|---|---|---|---|---|---|---|
| | 63 o-Xylene | 106 | 8.241 | 8.241 | (1.075) | 1210374 | 150.000 | 153.33 |
| | 64 Styrene | 104 | 8.260 | 8.260 | (1.077) | 2169528 | 150.000 | 163.97 |
| | 66 Bromoform | 173 | 8.410 | 8.410 | (1.097) | 588916 | 150.000 | 158.11 |
| | 67 Isopropylbenzene | 105 | 8.560 | 8.560 | (1.116) | 2877359 | 150.000 | 159.55 |
| | 68 1,1,2,2-Tetrachloroethane | 83 | 8.837 | 8.837 | (0.915) | 873933 | 150.000 | 141.84 |
| $ | 69 4-Bromofluorobenzene | 95 | 8.687 | 8.687 | (1.133) | 936681 | 150.000 | 150.82 |
| * | 70 1,4-Dichlorobenzene-d4 | 152 | 9.662 | 9.662 | (1.000) | 386546 | 50.0000 | |
| | 71 1,2,3-Trichloropropane | 75 | 8.863 | 8.863 | (0.917) | 702545 | 150.000 | 163.33 |
| | 73 n-Propylbenzene | 91 | 8.912 | 8.912 | (0.922) | 3370402 | 150.000 | 157.41 |
| | 74 Bromobenzene | 156 | 8.803 | 8.803 | (0.911) | 952608 | 150.000 | 150.20 |
| | 75 1,3,5-Trimethylbenzene | 105 | 9.066 | 9.066 | (0.938) | 2529726 | 150.000 | 159.93 |
| | 76 2-Chlorotoluene | 91 | 8.976 | 8.976 | (0.929) | 2083510 | 150.000 | 148.28 |
| | 77 4-Chlorotoluene | 91 | 9.069 | 9.069 | (0.939) | 2540753 | 150.000 | 158.62 |
| | 78 tert-Butylbenzene | 119 | 9.336 | 9.336 | (0.966) | 2055293 | 150.000 | 158.74 |
| | 79 1,2,4-Trimethylbenzene | 105 | 9.381 | 9.381 | (0.971) | 2613455 | 150.000 | 157.03 |
| | 81 sec-Butylbenzene | 105 | 9.523 | 9.523 | (0.986) | 2819238 | 150.000 | 163.65 |
| | 82 p-Isopropyltoluene | 119 | 9.650 | 9.650 | (0.999) | 2542764 | 150.000 | 164.71 |
| | 83 1,3-Dichlorobenzene | 146 | 9.605 | 9.605 | (0.994) | 1650440 | 150.000 | 156.79 |
| | 84 1,4-Dichlorobenzene | 146 | 9.684 | 9.684 | (1.002) | 1766146 | 150.000 | 153.76 |
| | 86 Benzyl Chloride | 91 | 9.808 | 9.808 | (1.279) | 1650494 | 150.000 | 151.23 |
| | 87 n-Butylbenzene | 91 | 9.992 | 9.992 | (1.034) | 2293126 | 150.000 | 150.43 |
| | 88 1,2-Dichlorobenzene | 146 | 9.992 | 9.992 | (1.034) | 1672283 | 150.000 | 154.25 |
| | 89 1,2-Dibromo-3-Chloropropane | 155 | 10.655 | 10.655 | (1.103) | 149691 | 150.000 | 151.78 |
| | 90 1,2,4-Trichlorobenzene | 180 | 11.337 | 11.337 | (1.173) | 1094701 | 150.000 | 160.01 |
| | 91 Hexachlorobutadiene | 225 | 11.480 | 11.480 | (1.188) | 466452 | 150.000 | 150.10 |
| | 92 Naphthalene | 128 | 11.540 | 11.540 | (1.194) | 2498440 | 150.000 | 160.50 |
| | 93 1,2,3-Trichlorobenzene | 180 | 11.738 | 11.738 | (1.215) | 991236 | 150.000 | 151.28 |
| M | 94 1,2-Dichloroethylene (total) | 96 | | | | 1273785 | 300.000 | |
| M | 95 Xylenes (total) | 106 | | | | 3631641 | 450.000 | |
| | 141 Cyclohexane | 56 | 4.117 | 4.117 | (0.986) | 682728 | 150.000 | 148.87 |
| | 138 Freon TF | 101 | 1.910 | 1.910 | (0.457) | 517229 | 150.000 | 157.53 |
| | 147 Methylcyclohexane | 55 | 5.377 | 5.377 | (1.083) | 1358300 | 150.000 | 159.57(A) |
| | 146 Methyl Acetate | 43 | 2.224 | 2.224 | (0.533) | 301298 | 150.000 | 149.70 |
| | 148 Tert-Butyl alcohol | 59 | 2.427 | 2.427 | (0.581) | 962267 | 3000.00 | 3107.07 |
| | 149 Isopropyl Alcohol | 45 | 2.093 | 2.093 | (0.501) | 514966 | 3000.00 | 3183.89 |

QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.
M - Compound response manually integrated.
H - Operator selected an alternate compound hit.



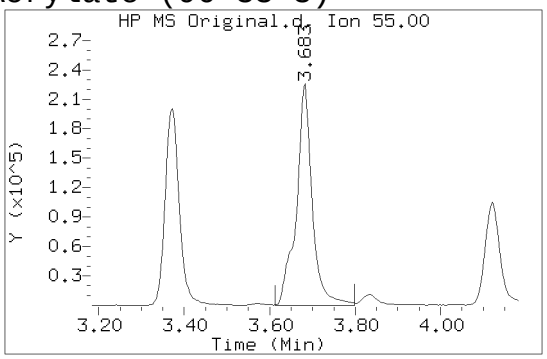

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Sample Info: VSTD150;VSTD150;1;9;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6,i
Operator: PC
Column diameter: 0.18

Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121610.D
Inj Date : 16-DEC-2022 14:46
InstruID : voa6.i
LabSampID : VSTD150

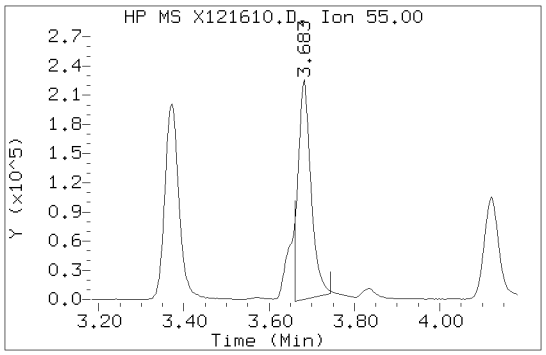
## Methyl Acrylate (96-33-3)

BEFORE
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AREA
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HEIGHT
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27-Dec-2022
16:04
linh
pham

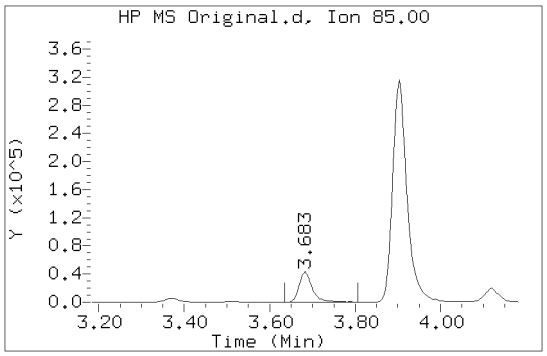



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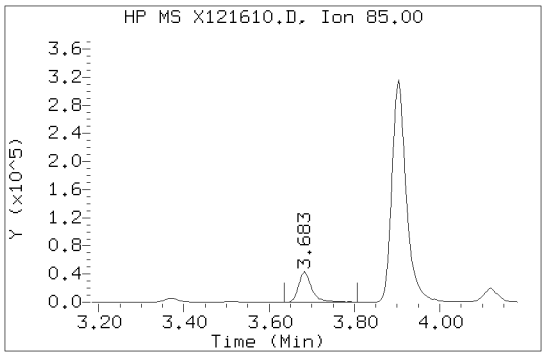
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BEFORE
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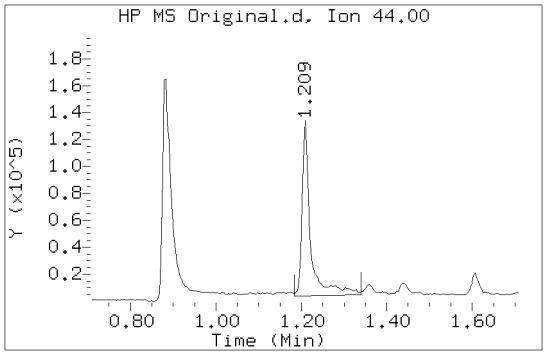



AFTER
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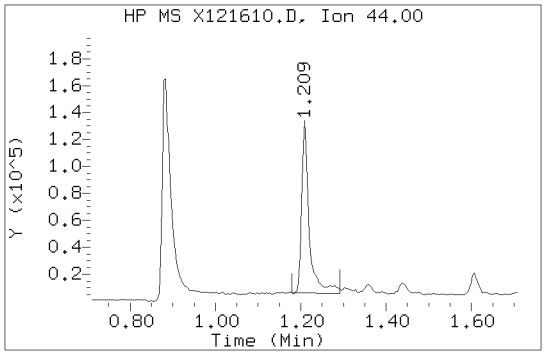

## Acetaldehyde (75-07-0)

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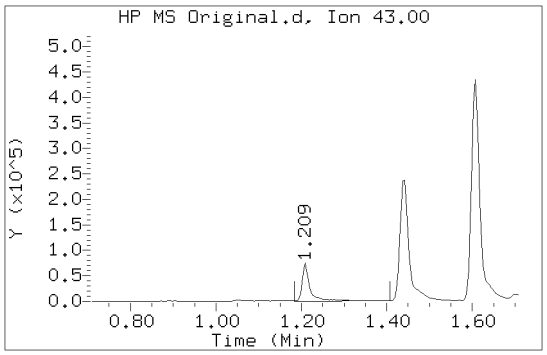



Reason Code:

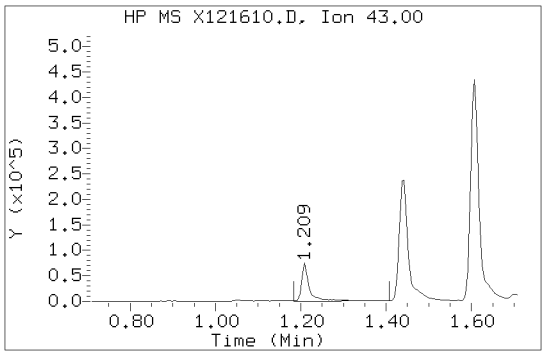
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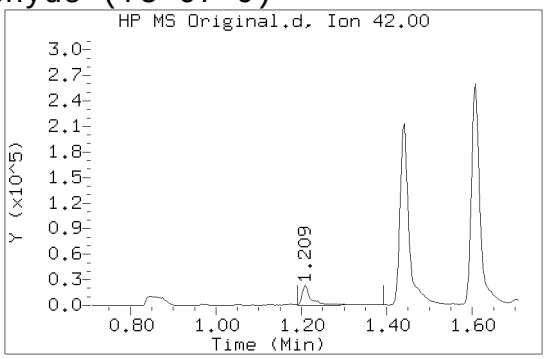
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Inj Date : 16-DEC-2022 14:46
InstruID : voa6.i
LabSampID : VSTD150

Acetaldehyde (75-07-0)

Reason Code:

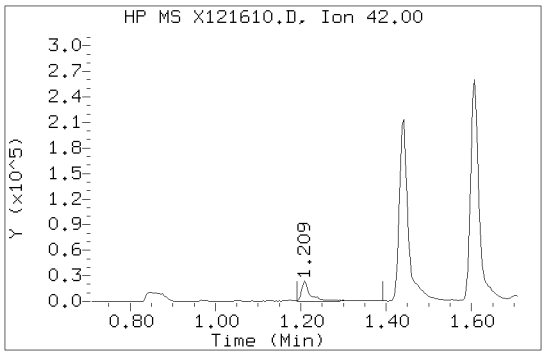
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pham



Data File: \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121611.D  Page 1
Report Date: 27-Dec-2022 16:07

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121611.D
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Inj Date  : 16-DEC-2022 15:07
Operator  : PC  Inst ID: voa6.i
Smp Info  : VSTD200;VSTD200;1;10;
Misc Info : V6;WATER;0;1;
Comment   :
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Meth Date : 27-Dec-2022 16:07 voa6.i  Quant Type: ISTD
Cal Date  : 16-DEC-2022 14:46  Cal File: X121610.D
Als bottle: 12  Calibration Sample, Level: 10
Dil Factor: 1.00000
Integrator: HP RTE  Compound Sublist: 08260V6.sub
Target Version:  4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

| Name | Value | Description |
|---|---|---|
| DF | 1.000 | Dilution Factor |
| Uf | 5.000 | ng unit correction factor |
| Vo | 5.000 | sample purged |
| Cpnd Variable | | Local Compound Variable |

| Compounds | QUANT SIG MASS | RT | EXP RT | REL RT | RESPONSE | AMOUNTS CAL-AMT ( ug/l) | ON-COL ( ug/l) |
|---|---|---|---|---|---|---|---|
| * 1 Pentafluorobenzene | 168 | 4.178 | 4.178 | (1.000) | 450847 | 50.0000 | |
| 135 1,4-Dioxane | 88 | 5.598 | 5.598 | (1.340) | 179280 | 4000.00 | 4350.17(A) |
| 140 1,3-Butadiene | 54 | 1.160 | 1.160 | (0.278) | 646265 | 200.000 | 208.86(A) |
| 25 Methacrylonitrile | 41 | 3.814 | 3.814 | (0.913) | 619479 | 200.000 | 194.04 |
| 12 Isobutyl Alcohol | 43 | 4.672 | 4.672 | (1.118) | 2146631 | 4000.00 | 4233.12(A) |
| 13 Acetonitrile | 39 | 2.195 | 2.195 | (0.525) | 854153 | 2000.00 | 2081.63(A) |
| 14 Allyl Chloride | 41 | 2.195 | 2.195 | (0.525) | 1558053 | 200.000 | 199.36 |
| 4 Propionitrile | 54 | 3.649 | 3.649 | (0.873) | 933721 | 2000.00 | 2029.71(A) |
| 136 n-Hexane | 57 | 2.768 | 2.768 | (0.663) | 726173 | 200.000 | 223.70(A) |
| 72 trans-1,4-Dichloro-2-butene | 53 | 8.890 | 8.890 | (1.159) | 324976 | 200.000 | 217.73(A) |
| 194 Acetaldehyde | 44 | 1.209 | 1.209 | (0.289) | 205547 | 800.000 | 780.23(M) |
| 23 Chloroprene | 53 | 1.767 | 1.767 | (0.423) | 315248 | 200.000 | 205.64(A) |
| 145 alpha-Methylstyrene | 118 | 9.261 | 9.261 | (0.958) | 1880547 | 200.000 | 211.54(A) |
| 200 Dimethyl Disulfide | 94 | 6.198 | 6.198 | (0.808) | 1929723 | 200.000 | 206.22(A) |
| 139 Diethyl ether | 59 | 1.752 | 1.752 | (0.419) | 595638 | 200.000 | 197.72 |
| 130 Ethyl Acetate | 43 | 3.649 | 3.649 | (0.873) | 706790 | 200.000 | 200.90(A) |
| 40 Methyl Methacrylate | 41 | 5.602 | 5.602 | (1.341) | 643877 | 200.000 | 209.45(A) |
| 49 Ethyl Methacrylate | 69 | 6.715 | 6.715 | (1.353) | 735246 | 200.000 | 222.23(A) |
| 132 n-Butanol | 56 | 5.253 | 5.253 | (1.258) | 297334 | 4000.00 | 3955.86 |
| 142 Tetrahydrofuran | 42 | 3.840 | 3.840 | (0.919) | 219995 | 400.000 | 401.77(A) |

| | | | | | | |
|---|---|---|---|---|---|---|
| 150 Allyl alcohol | 57 | 2.768 | 2.768 (0.663) | 726173 | 4000.00 | 4146.79(A) |
| 166 1,2,3-Trimethylbenzene | 105 | 9.733 | 9.733 (1.007) | 3701988 | 200.000 | 191.61 |

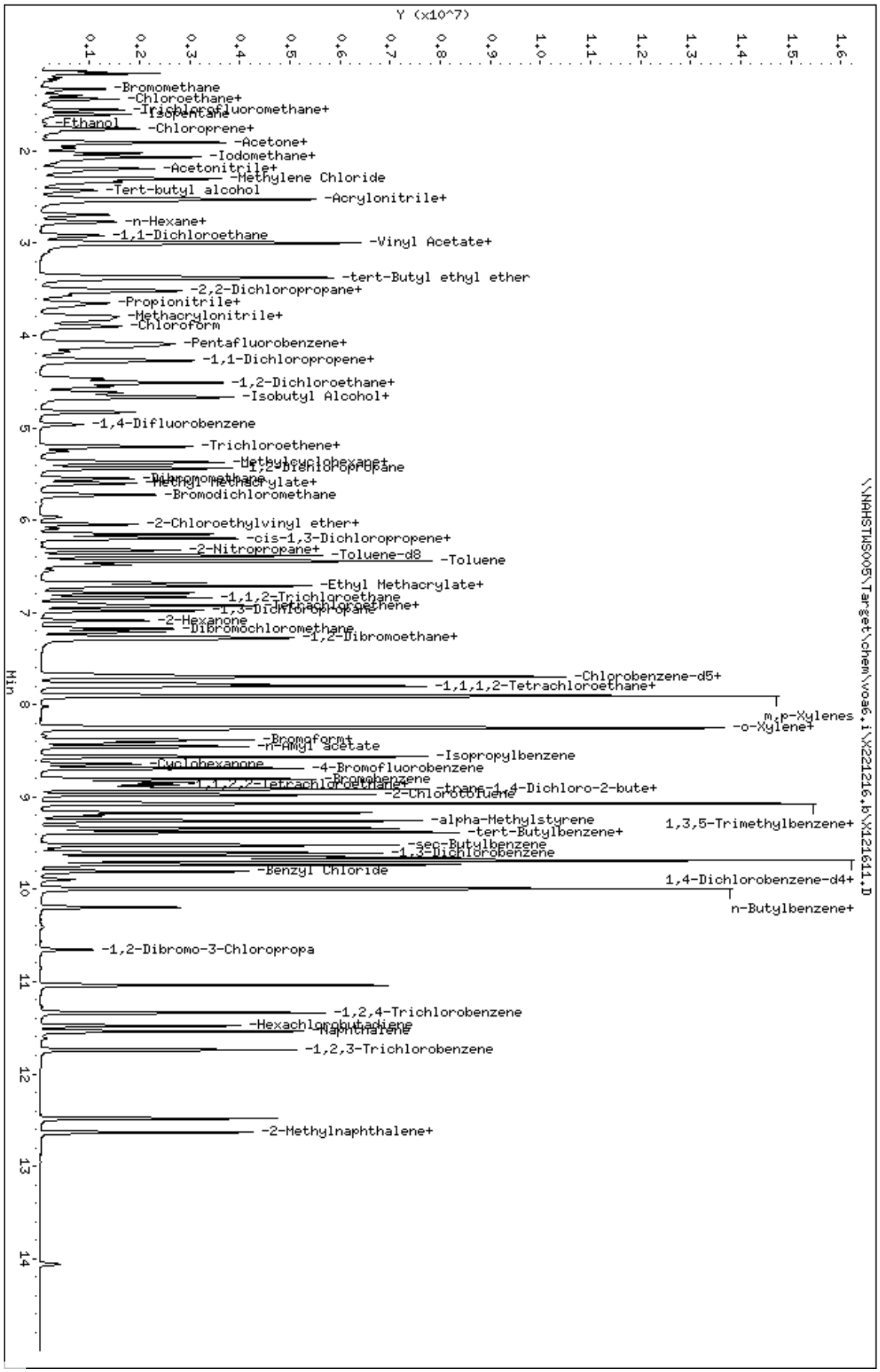
| | Compounds | QUANT SIG MASS | RT | EXP RT | REL RT | RESPONSE | AMOUNTS CAL-AMT ( ug/l) | ON-COL ( ug/l) |
|---|---|---|---|---|---|---|---|---|
| | 131 Methyl Acrylate | 55 | 3.683 | 3.683 | (0.882) | 646827 | 200.000 | 211.32(AM) |
| | 162 Butyl acrylate | 55 | 8.252 | 8.252 | (1.076) | 2063916 | 200.000 | 228.52(A) |
| | 2 Dichlorodifluoromethane | 85 | 0.969 | 0.969 | (0.232) | 635808 | 200.000 | 200.44(A) |
| | 3 Chloromethane | 50 | 1.074 | 1.074 | (0.257) | 865151 | 200.000 | 204.92(A) |
| | 5 Vinyl Chloride | 62 | 1.141 | 1.141 | (0.273) | 827926 | 200.000 | 210.21(A) |
| | 6 Bromomethane | 94 | 1.329 | 1.329 | (0.318) | 666705 | 200.000 | 217.67(A) |
| | 7 Chloroethane | 64 | 1.396 | 1.396 | (0.334) | 548415 | 200.000 | 200.06(A) |
| | 8 Trichlorofluoromethane | 101 | 1.553 | 1.553 | (0.372) | 1173529 | 200.000 | 212.92(A) |
| | 9 Acrolein | 56 | 1.437 | 1.437 | (0.344) | 125874 | 400.000 | 399.54 |
| | 10 Acetone | 43 | 1.970 | 1.970 | (0.472) | 514105 | 400.000 | 406.50(A) |
| | 11 1,1-Dichloroethene | 96 | 1.910 | 1.910 | (0.457) | 704695 | 200.000 | 205.94(A) |
| | 15 Iodomethane | 142 | 2.022 | 2.022 | (0.484) | 2193685 | 400.000 | 398.07 |
| | 16 Acrylonitrile | 53 | 2.528 | 2.528 | (0.605) | 504850 | 400.000 | 435.02(A) |
| | 17 Methylene Chloride | 84 | 2.299 | 2.299 | (0.550) | 863945 | 200.000 | 184.07 |
| | 18 Methyl tert-butyl ether | 73 | 2.532 | 2.532 | (0.606) | 2237559 | 200.000 | 199.78 |
| | 19 Carbon Disulfide | 76 | 2.067 | 2.067 | (0.495) | 3829593 | 400.000 | 427.76(A) |
| | 20 trans-1,2-Dichloroethene | 96 | 2.524 | 2.524 | (0.604) | 785444 | 200.000 | 205.10(A) |
| | 21 Vinyl Acetate | 43 | 2.993 | 2.993 | (0.716) | 4210603 | 400.000 | 428.26(A) |
| | 22 1,1-Dichloroethane | 63 | 2.918 | 2.918 | (0.699) | 1342786 | 200.000 | 199.79 |
| | 24 2-Butanone | 43 | 3.570 | 3.570 | (0.855) | 555896 | 400.000 | 404.77(AH) |
| | 26 2,2-Dichloropropane | 77 | 3.507 | 3.507 | (0.839) | 1175128 | 200.000 | 205.93(A) |
| | 27 cis-1,2-Dichloroethene | 96 | 3.522 | 3.522 | (0.843) | 927934 | 200.000 | 199.10 |
| | 28 Chloroform | 83 | 3.904 | 3.904 | (0.935) | 1523082 | 200.000 | 202.19(A) |
| | 29 Bromochloromethane | 128 | 3.791 | 3.791 | (0.908) | 510028 | 200.000 | 199.87 |
| $ | 30 Dibromofluoromethane | 113 | 4.095 | 4.095 | (0.980) | 856027 | 200.000 | 198.23 |
| | 31 1,1,1-Trichloroethane | 97 | 4.080 | 4.080 | (0.977) | 1257327 | 200.000 | 210.37(A) |
| | 32 1,1-Dichloropropene | 75 | 4.279 | 4.279 | (0.862) | 1048877 | 200.000 | 210.29(A) |
| | 33 1,2-Dichloroethane | 62 | 4.552 | 4.552 | (0.917) | 1153034 | 200.000 | 200.31(A) |
| | 34 Carbon Tetrachloride | 117 | 4.260 | 4.260 | (0.858) | 1051824 | 200.000 | 197.48 |
| $ | 35 1,2-Dichloroethane-d4 | 65 | 4.470 | 4.470 | (1.070) | 919752 | 200.000 | 200.47(A) |
| * | 36 1,4-Difluorobenzene | 114 | 4.965 | 4.965 | (1.000) | 702551 | 50.0000 | |
| | 37 Benzene | 78 | 4.511 | 4.511 | (0.909) | 3321582 | 200.000 | 197.98 |
| | 38 Trichloroethene | 130 | 5.205 | 5.205 | (1.048) | 973709 | 200.000 | 204.62(A) |
| | 39 Bromodichloromethane | 83 | 5.722 | 5.722 | (1.153) | 1264834 | 200.000 | 200.88(A) |
| | 41 2-Chloroethylvinyl ether | 63 | 6.044 | 6.044 | (1.217) | 729151 | 400.000 | 407.06(A) |
| | 42 1,2-Dichloropropane | 63 | 5.437 | 5.437 | (1.095) | 895211 | 200.000 | 200.59(A) |
| | 44 Dibromomethane | 93 | 5.550 | 5.550 | (1.118) | 600170 | 200.000 | 197.85 |
| | 45 4-Methyl-2-Pentanone | 43 | 6.326 | 6.326 | (0.825) | 1447268 | 400.000 | 391.63 |
| | 46 cis-1,3-Dichloropropene | 75 | 6.153 | 6.153 | (1.239) | 1583645 | 200.000 | 214.16(A) |
| * | 47 Chlorobenzene-d5 | 117 | 7.671 | 7.671 | (1.000) | 691386 | 50.0000 | |
| $ | 48 Toluene-d8 | 98 | 6.385 | 6.385 | (0.832) | 3061758 | 200.000 | 179.21 |
| | 50 Toluene | 91 | 6.445 | 6.445 | (0.840) | 3757557 | 200.000 | 196.62 |
| | 51 trans-1,3-Dichloropropene | 75 | 6.682 | 6.682 | (1.346) | 1365007 | 200.000 | 222.44(A) |
| | 52 2-Hexanone | 43 | 7.086 | 7.086 | (0.924) | 1026898 | 400.000 | 408.42(A) |
| | 53 1,1,2-Trichloroethane | 83 | 6.839 | 6.839 | (0.892) | 736981 | 200.000 | 192.23 |
| | 54 1,3-Dichloropropane | 76 | 6.982 | 6.982 | (0.910) | 1482067 | 200.000 | 196.39 |
| | 55 Dibromochloromethane | 129 | 7.176 | 7.176 | (0.936) | 1128140 | 200.000 | 203.88(A) |
| | 56 Tetrachloroethene | 164 | 6.929 | 6.929 | (0.903) | 798932 | 200.000 | 202.05(A) |
| | 57 1,2-Dibromoethane | 107 | 7.259 | 7.259 | (0.946) | 970608 | 200.000 | 202.48(A) |
| | 58 1-Chlorohexane | 55 | 7.698 | 7.698 | (1.550) | 746326 | 200.000 | 219.81(A) |
| | 59 Chlorobenzene | 112 | 7.694 | 7.694 | (1.003) | 2696715 | 200.000 | 198.95 |
| | 60 1,1,1,2-Tetrachloroethane | 131 | 7.776 | 7.776 | (1.014) | 1028448 | 200.000 | 203.88(A) |

| | | | | | | |
|---|---|---|---|---|---|---|
| 61 Ethylbenzene | 106 | 7.799 | 7.799 (1.017) | 1312165 | 200.000 | 205.50(A) |
| 62 m,p-Xylenes | 106 | 7.904 | 7.904 (1.030) | 3401207 | 400.000 | 413.22(A) |

| | Compounds | QUANT SIG MASS | RT | EXP RT | REL RT | RESPONSE | AMOUNTS CAL-AMT ( ug/l) | ON-COL ( ug/l) |
|---|---|---|---|---|---|---|---|---|
| 63 | o-Xylene | 106 | 8.241 | 8.241 | (1.074) | 1701245 | 200.000 | 209.41(A) |
| 64 | Styrene | 104 | 8.260 | 8.260 | (1.077) | 3030858 | 200.000 | 222.58(A) |
| 66 | Bromoform | 173 | 8.410 | 8.410 | (1.096) | 809693 | 200.000 | 211.22(A) |
| 67 | Isopropylbenzene | 105 | 8.563 | 8.563 | (1.116) | 4031708 | 200.000 | 217.22(A) |
| 68 | 1,1,2,2-Tetrachloroethane | 83 | 8.841 | 8.841 | (0.915) | 1186926 | 200.000 | 185.61 |
| $ 69 | 4-Bromofluorobenzene | 95 | 8.687 | 8.687 | (1.132) | 1277239 | 200.000 | 199.81 |
| * 70 | 1,4-Dichlorobenzene-d4 | 152 | 9.666 | 9.666 | (1.000) | 401196 | 50.0000 | |
| 71 | 1,2,3-Trichloropropane | 75 | 8.863 | 8.863 | (0.917) | 864931 | 200.000 | 193.75(M) |
| 73 | n-Propylbenzene | 91 | 8.912 | 8.912 | (0.922) | 4694239 | 200.000 | 211.23(A) |
| 74 | Bromobenzene | 156 | 8.807 | 8.807 | (0.911) | 1313631 | 200.000 | 199.57 |
| 75 | 1,3,5-Trimethylbenzene | 105 | 9.070 | 9.070 | (0.938) | 3532485 | 200.000 | 215.17(A) |
| 76 | 2-Chlorotoluene | 91 | 8.976 | 8.976 | (0.929) | 2866849 | 200.000 | 196.59 |
| 77 | 4-Chlorotoluene | 91 | 9.070 | 9.070 | (0.938) | 3546402 | 200.000 | 213.32(A) |
| 78 | tert-Butylbenzene | 119 | 9.336 | 9.336 | (0.966) | 2865820 | 200.000 | 213.26(A) |
| 79 | 1,2,4-Trimethylbenzene | 105 | 9.381 | 9.381 | (0.971) | 3599947 | 200.000 | 208.40(A) |
| 81 | sec-Butylbenzene | 105 | 9.523 | 9.523 | (0.985) | 3952917 | 200.000 | 221.08(A) |
| 82 | p-Isopropyltoluene | 119 | 9.651 | 9.651 | (0.998) | 3537904 | 200.000 | 220.81(A) |
| 83 | 1,3-Dichlorobenzene | 146 | 9.606 | 9.606 | (0.994) | 2282597 | 200.000 | 208.93(A) |
| 84 | 1,4-Dichlorobenzene | 146 | 9.684 | 9.684 | (1.002) | 2442324 | 200.000 | 204.86(A) |
| 86 | Benzyl Chloride | 91 | 9.808 | 9.808 | (1.279) | 2286488 | 200.000 | 202.63(A) |
| 87 | n-Butylbenzene | 91 | 9.995 | 9.995 | (1.034) | 3216534 | 200.000 | 202.68(A) |
| 88 | 1,2-Dichlorobenzene | 146 | 9.992 | 9.992 | (1.034) | 2296902 | 200.000 | 204.14(A) |
| 89 | 1,2-Dibromo-3-Chloropropane | 155 | 10.655 | 10.655 | (1.102) | 205063 | 200.000 | 200.30(A) |
| 90 | 1,2,4-Trichlorobenzene | 180 | 11.337 | 11.337 | (1.173) | 1524896 | 200.000 | 214.75(A) |
| 91 | Hexachlorobutadiene | 225 | 11.480 | 11.480 | (1.188) | 654615 | 200.000 | 200.27(A) |
| 92 | Naphthalene | 128 | 11.540 | 11.540 | (1.194) | 3413593 | 200.000 | 211.29(A) |
| 93 | 1,2,3-Trichlorobenzene | 180 | 11.739 | 11.739 | (1.214) | 1363987 | 200.000 | 200.56(A) |
| M 94 | 1,2-Dichloroethylene (total) | 96 | | | | 1713378 | 400.000 | |
| M 95 | Xylenes (total) | 106 | | | | 5102452 | 600.000 | |
| 141 | Cyclohexane | 56 | 4.121 | 4.121 | (0.987) | 943314 | 200.000 | 203.60(A) |
| 138 | Freon TF | 101 | 1.910 | 1.910 | (0.457) | 714577 | 200.000 | 215.91(A) |
| 147 | Methylcyclohexane | 55 | 5.377 | 5.377 | (1.083) | 1829310 | 200.000 | 212.71(A) |
| 146 | Methyl Acetate | 43 | 2.224 | 2.224 | (0.533) | 408781 | 200.000 | 201.49(A) |
| 148 | Tert-Butyl alcohol | 59 | 2.431 | 2.431 | (0.582) | 1308623 | 4000.00 | 4191.87(A) |
| 149 | Isopropyl Alcohol | 45 | 2.093 | 2.093 | (0.501) | 697543 | 4000.00 | 4278.45(A) |

## QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.
M - Compound response manually integrated.
H - Operator selected an alternate compound hit.




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Sample Info: VSTD200;VSTD200;1;10;
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Column phase: DB624

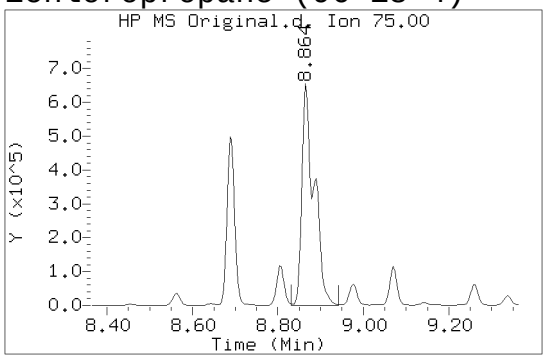
Instrument: voa6.i
Operator: PC
Column diameter: 0.18

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Inj Date : 16-DEC-2022 15:07
InstruID : voa6.i
LabSampID : VSTD200

## 1,2,3-Trichloropropane (96-18-4)

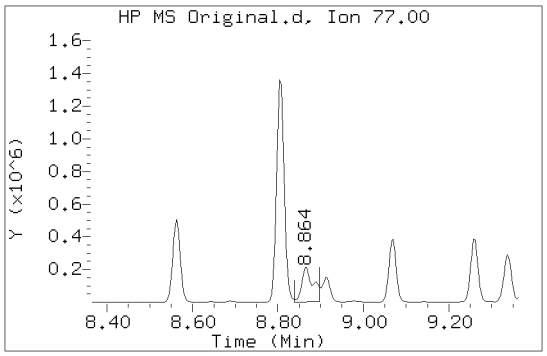
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### BEFORE

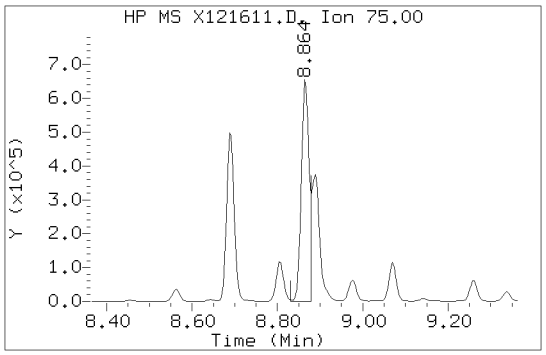
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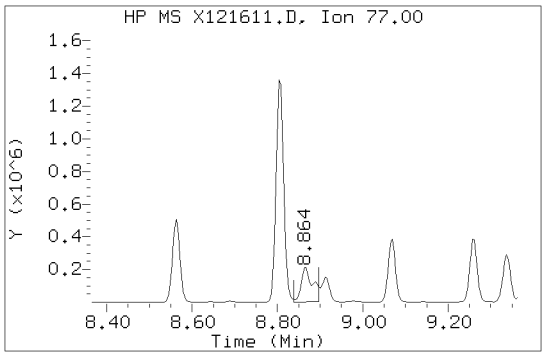
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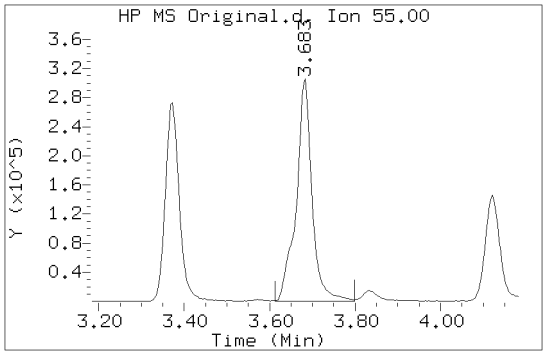
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## Methyl Acrylate (96-33-3)

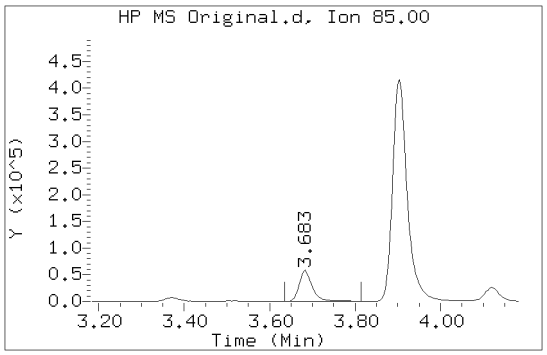
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### BEFORE

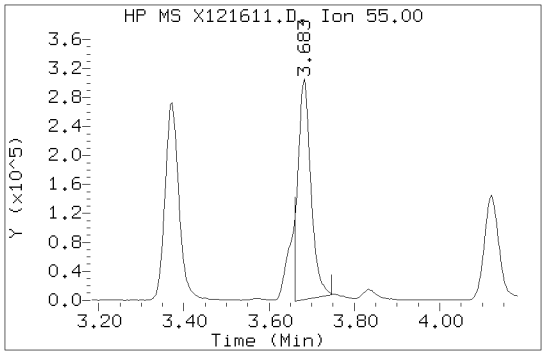
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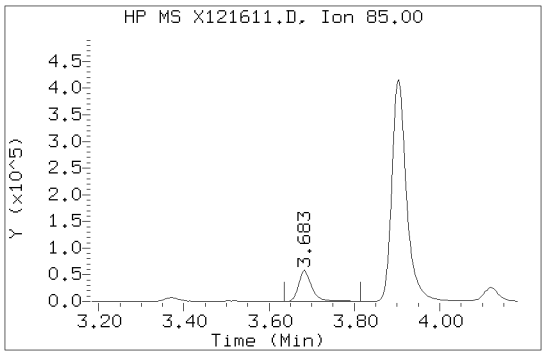
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### AFTER

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linh
pham



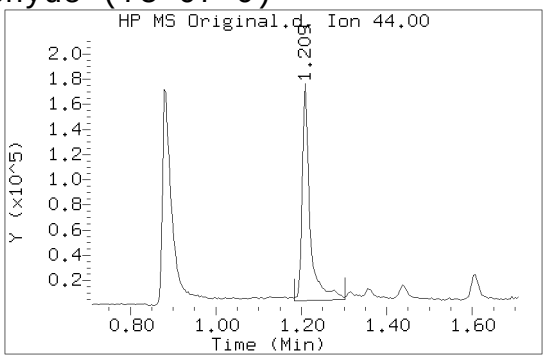
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Inj Date : 16-DEC-2022 15:07
InstruID : voa6.i
LabSampID : VSTD200

## Acetaldehyde (75-07-0)

Reason Code:

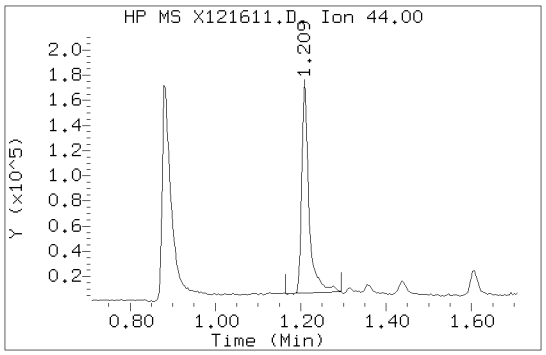
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27-Dec-2022
16:04
linh
pham



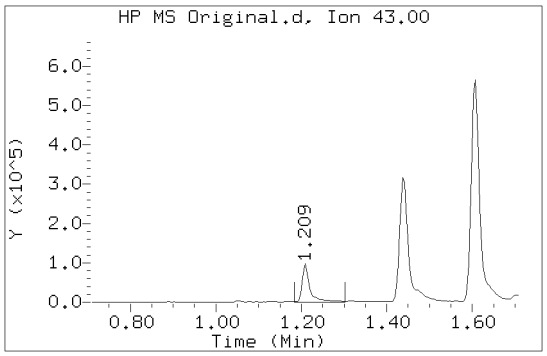

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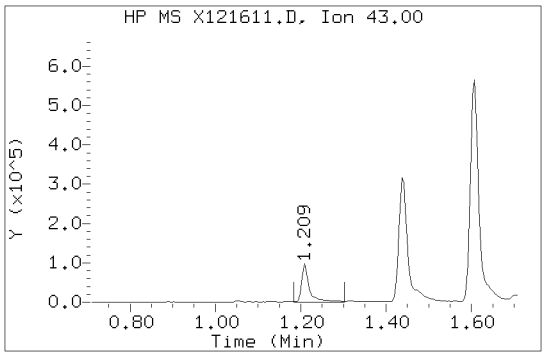

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97657
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pham



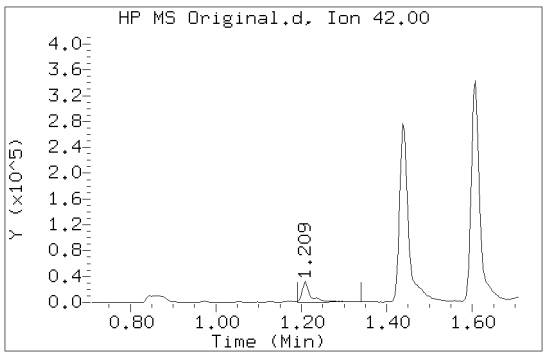

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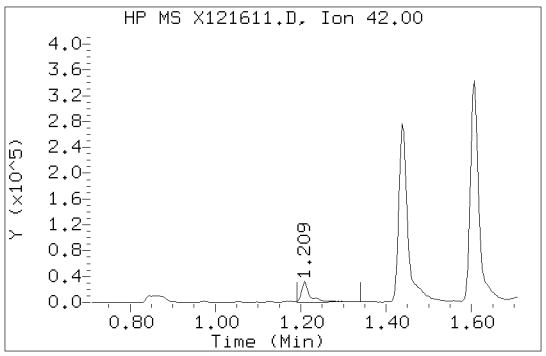

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27-Dec-2022
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### AFTER

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HEIGHT
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27-Dec-2022
16:06
linh
pham



Data File: \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121613.D  Page 1
Report Date: 13-Feb-2023 13:08

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121613.D
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Inj Date  : 16-DEC-2022 15:49
Operator  : PC  Inst ID: voa6.i
Smp Info  : CCV;CCV;2;;ICV
Misc Info : V6;WATER;0;1;
Comment   :
Method    : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\8260W.m
Meth Date : 27-Dec-2022 16:38 Linh.Pham  Quant Type: ISTD
Cal Date  : 16-DEC-2022 15:07  Cal File: X121611.D
Als bottle: 14  QC Sample: METHSPIKE
Dil Factor: 1.00000
Integrator: HP RTE  Compound Sublist: 08260V6.sub
Target Version:  4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

| Name | Value | Description |
|---|---|---|
| DF | 1.000 | Dilution Factor |
| Uf | 5.000 | ng unit correction factor |
| Vo | 5.000 | sample purged |
| Cpnd Variable | | Local Compound Variable |

| Compounds | QUANT SIG MASS | RT | EXP RT | REL RT | RESPONSE | CONCENTRATIONS ON-COLUMN ( ug/l) | FINAL ( ug/l) |
|---|---|---|---|---|---|---|---|
| * 1 Pentafluorobenzene | 168 | 4.178 | 4.178 | (1.000) | 457291 | 50.0000 | |
| 135 1,4-Dioxane | 88 | 5.598 | 5.598 | (1.340) | 42711 | 1021.77 | 1021.76 |
| 140 1,3-Butadiene | 54 | 1.164 | 1.160 | (0.279) | 155959 | 49.6927 | 49.69 |
| 25 Methacrylonitrile | 41 | 3.818 | 3.818 | (0.914) | 151341 | 46.7389 | 46.73 |
| 12 Isobutyl Alcohol | 43 | 4.672 | 4.672 | (1.118) | 505171 | 982.151 | 982.15 |
| 13 Acetonitrile | 39 | 2.194 | 2.195 | (0.525) | 197937 | 475.590 | 475.59 |
| 14 Allyl Chloride | 41 | 2.194 | 2.195 | (0.525) | 375064 | 47.3168 | 47.31 |
| 4 Propionitrile | 54 | 3.649 | 3.645 | (0.873) | 227186 | 486.896 | 486.89 |
| 136 n-Hexane | 57 | 2.768 | 2.768 | (0.663) | 183599 | 55.7620 | 55.76 |
| 72 trans-1,4-Dichloro-2-butene | 53 | 8.890 | 8.886 | (1.159) | 71513 | 49.7372 | 49.73 |
| 194 Acetaldehyde | 44 | 1.209 | 1.209 | (0.289) | 52697 | 179.814 | 179.81(M) |
| 23 Chloroprene | 53 | 1.767 | 1.767 | (0.423) | 74243 | 47.7493 | 47.74(M) |
| 145 alpha-Methylstyrene | 118 | 9.257 | 9.257 | (0.958) | 428317 | 51.3094 | 51.30 |
| 200 Dimethyl Disulfide | 94 | 6.198 | 6.194 | (0.808) | 437905 | 48.5791 | 48.57 |
| 139 Diethyl ether | 59 | 1.752 | 1.752 | (0.419) | 142672 | 46.6930 | 46.69 |
| 130 Ethyl Acetate | 43 | 3.653 | 3.653 | (0.874) | 171211 | 47.9808 | 47.98 |
| 40 Methyl Methacrylate | 41 | 5.602 | 5.602 | (1.341) | 148777 | 47.7146 | 47.71 |
| 49 Ethyl Methacrylate | 69 | 6.712 | 6.708 | (1.352) | 142471 | 44.0730 | 44.07 |
| 132 n-Butanol | 56 | 5.257 | 5.253 | (1.258) | 56842 | 974.397 | 974.39 |
| 142 Tetrahydrofuran | 42 | 3.840 | 3.844 | (0.919) | 61534 | 108.502 | 108.50 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 166 | 1,2,3-Trimethylbenzene | 105 | 9.729 | 9.729 (1.007) | 846843 | 46.6777 | 46.67 |
| 131 | Methyl Acrylate | 55 | 3.683 | 3.683 (0.882) | 162555 | 52.3594 | 52.35 |

Data File: \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121613.D Page 2
Report Date: 13-Feb-2023 13:08

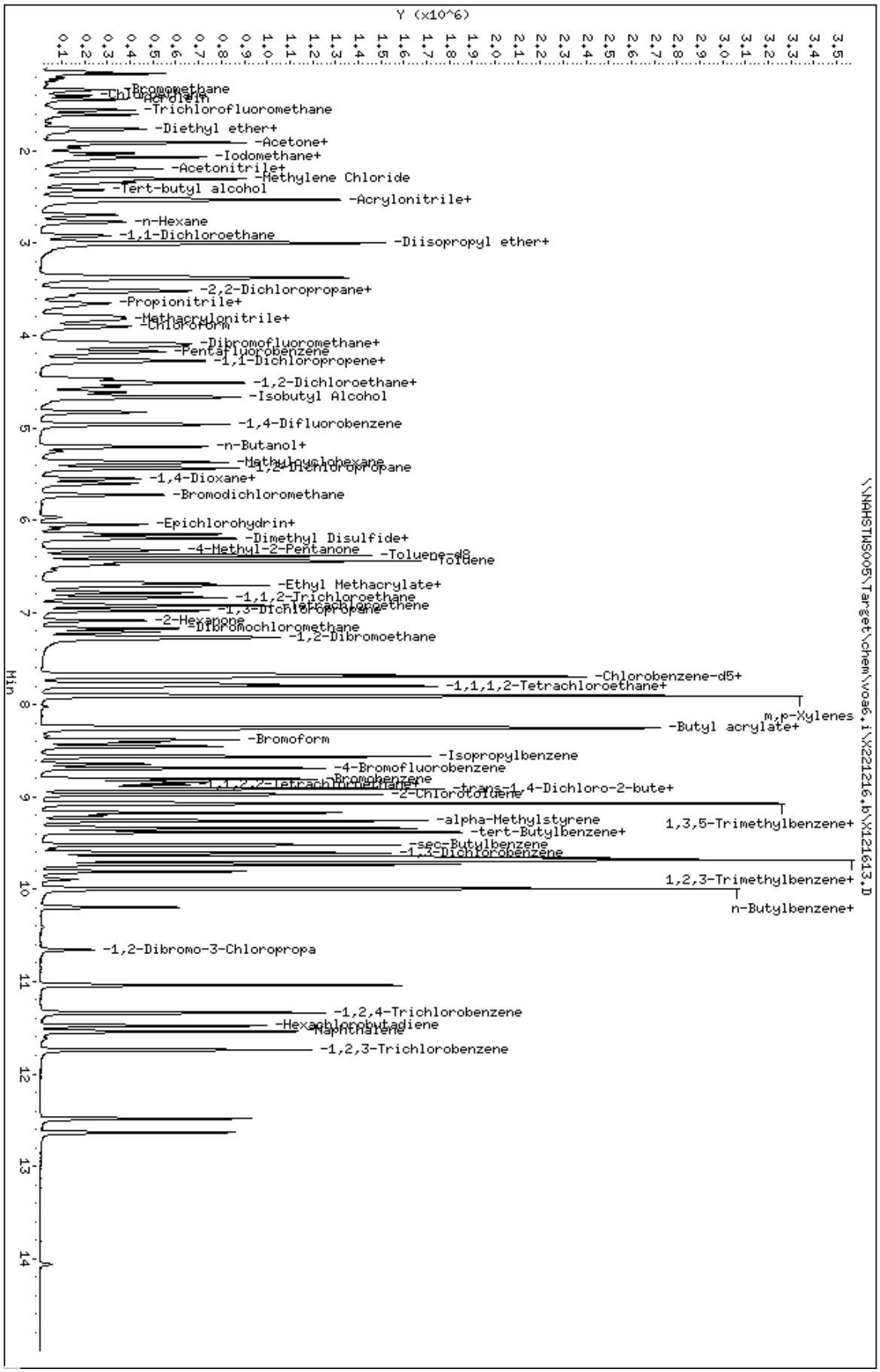
| | | | QUANT SIG | | | | | CONCENTRATIONS | |
|---|---|---|---|---|---|---|---|---|---|
| | | Compounds | MASS | RT | EXP RT | REL RT | RESPONSE | ON-COLUMN ( ug/l) | FINAL ( ug/l) |
| | 162 | Butyl acrylate | 55 | 8.249 | 8.249 | (1.076) | 417137 | 47.9449 | 47.94 |
| | 2 | Dichlorodifluoromethane | 85 | 0.972 | 0.969 | (0.233) | 166984 | 52.1924 | 52.19 |
| | 3 | Chloromethane | 50 | 1.077 | 1.077 | (0.258) | 207623 | 50.1741 | 50.17 |
| | 5 | Vinyl Chloride | 62 | 1.141 | 1.141 | (0.273) | 202038 | 50.5766 | 50.57 |
| | 6 | Bromomethane | 94 | 1.336 | 1.336 | (0.320) | 153541 | 50.7886 | 50.78 |
| | 7 | Chloroethane | 64 | 1.400 | 1.400 | (0.335) | 134354 | 48.3213 | 48.32 |
| | 8 | Trichlorofluoromethane | 101 | 1.557 | 1.557 | (0.373) | 285144 | 51.0083 | 51.00 |
| | 9 | Acrolein | 56 | 1.441 | 1.441 | (0.345) | 29687 | 95.0682 | 95.06 |
| | 10 | Acetone | 43 | 1.970 | 1.970 | (0.472) | 130747 | 101.899 | 101.89 |
| | 11 | 1,1-Dichloroethene | 96 | 1.913 | 1.910 | (0.458) | 171246 | 49.3414 | 49.34 |
| | 15 | Iodomethane | 142 | 2.026 | 2.026 | (0.485) | 440111 | 96.4856 | 96.48 |
| | 16 | Acrylonitrile | 53 | 2.532 | 2.528 | (0.606) | 119393 | 101.430 | 101.42 |
| | 17 | Methylene Chloride | 84 | 2.299 | 2.299 | (0.550) | 226449 | 47.5675 | 47.56 |
| | 18 | Methyl tert-butyl ether | 73 | 2.532 | 2.532 | (0.606) | 546711 | 48.1256 | 48.12 |
| | 19 | Carbon Disulfide | 76 | 2.067 | 2.067 | (0.495) | 894433 | 98.5011 | 98.50 |
| | 20 | trans-1,2-Dichloroethene | 96 | 2.528 | 2.524 | (0.605) | 194181 | 49.9917 | 49.99 |
| | 21 | Vinyl Acetate | 43 | 2.997 | 2.993 | (0.717) | 1044658 | 104.756 | 104.75 |
| | 22 | 1,1-Dichloroethane | 63 | 2.918 | 2.918 | (0.699) | 328530 | 48.1931 | 48.19 |
| | 24 | 2-Butanone | 43 | 3.574 | 3.574 | (0.856) | 132931 | 97.7407 | 97.74(H) |
| | 26 | 2,2-Dichloropropane | 77 | 3.507 | 3.503 | (0.839) | 295126 | 50.9895 | 50.98 |
| | 27 | cis-1,2-Dichloroethene | 96 | 3.525 | 3.522 | (0.844) | 228100 | 48.2538 | 48.25 |
| | 28 | Chloroform | 83 | 3.904 | 3.900 | (0.935) | 370227 | 48.4556 | 48.45 |
| | 29 | Bromochloromethane | 128 | 3.795 | 3.791 | (0.908) | 122310 | 47.2570 | 47.25 |
| $ | 30 | Dibromofluoromethane | 113 | 4.095 | 4.099 | (0.980) | 223563 | 50.9182 | 50.91 |
| | 31 | 1,1,1-Trichloroethane | 97 | 4.080 | 4.080 | (0.977) | 304118 | 50.1673 | 50.16 |
| | 32 | 1,1-Dichloropropene | 75 | 4.279 | 4.279 | (0.862) | 254008 | 52.1195 | 52.11 |
| | 33 | 1,2-Dichloroethane | 62 | 4.552 | 4.552 | (0.917) | 278558 | 49.5262 | 49.52 |
| | 34 | Carbon Tetrachloride | 117 | 4.264 | 4.260 | (0.859) | 255322 | 49.0600 | 49.06 |
| $ | 35 | 1,2-Dichloroethane-d4 | 65 | 4.470 | 4.470 | (1.070) | 233432 | 50.3661 | 50.36 |
| * | 36 | 1,4-Difluorobenzene | 114 | 4.965 | 4.965 | (1.000) | 686467 | 50.0000 | |
| | 37 | Benzene | 78 | 4.511 | 4.507 | (0.909) | 824422 | 50.2921 | 50.29 |
| | 38 | Trichloroethene | 130 | 5.205 | 5.205 | (1.048) | 238429 | 51.2807 | 51.28 |
| | 39 | Bromodichloromethane | 83 | 5.726 | 5.726 | (1.153) | 302844 | 49.2265 | 49.22 |
| | 41 | 2-Chloroethylvinyl ether | 63 | 6.048 | 6.044 | (1.218) | 182363 | 104.194 | 104.19 |
| | 42 | 1,2-Dichloropropane | 63 | 5.433 | 5.433 | (1.094) | 216322 | 49.6089 | 49.60 |
| | 44 | Dibromomethane | 93 | 5.550 | 5.550 | (1.118) | 145797 | 49.1915 | 49.19 |
| | 45 | 4-Methyl-2-Pentanone | 43 | 6.325 | 6.322 | (0.825) | 334751 | 94.0316 | 94.03 |
| | 46 | cis-1,3-Dichloropropene | 75 | 6.153 | 6.153 | (1.239) | 376514 | 52.1120 | 52.11 |
| * | 47 | Chlorobenzene-d5 | 117 | 7.667 | 7.668 | (1.000) | 666040 | 50.0000 | |
| $ | 48 | Toluene-d8 | 98 | 6.385 | 6.386 | (0.833) | 814721 | 49.5021 | 49.50 |
| | 50 | Toluene | 91 | 6.445 | 6.446 | (0.841) | 905906 | 49.2085 | 49.20 |
| | 51 | trans-1,3-Dichloropropene | 75 | 6.682 | 6.678 | (1.346) | 314805 | 52.5028 | 52.50 |
| | 52 | 2-Hexanone | 43 | 7.086 | 7.083 | (0.924) | 234303 | 96.7356 | 96.73 |
| | 53 | 1,1,2-Trichloroethane | 83 | 6.839 | 6.839 | (0.892) | 176962 | 47.9147 | 47.91 |
| | 54 | 1,3-Dichloropropane | 76 | 6.981 | 6.982 | (0.911) | 347689 | 47.8282 | 47.82 |
| | 55 | Dibromochloromethane | 129 | 7.176 | 7.173 | (0.936) | 263907 | 49.5095 | 49.50 |
| | 56 | Tetrachloroethene | 164 | 6.929 | 6.925 | (0.904) | 194246 | 50.9965 | 50.99 |
| | 57 | 1,2-Dibromoethane | 107 | 7.259 | 7.259 | (0.947) | 232024 | 50.2468 | 50.24 |
| | 58 | 1-Chlorohexane | 55 | 7.694 | 7.694 | (1.550) | 172462 | 51.9860 | 51.98 |
| | 59 | Chlorobenzene | 112 | 7.694 | 7.694 | (1.003) | 631235 | 48.3416 | 48.34 |
| | 60 | 1,1,1,2-Tetrachloroethane | 131 | 7.772 | 7.772 | (1.014) | 236254 | 48.6176 | 48.61 |
| | 61 | Ethylbenzene | 106 | 7.799 | 7.799 | (1.017) | 315635 | 51.3153 | 51.31 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 62 m,p-Xylenes | 106 | 7.904 | 7.904 (1.031) | 794307 | 100.175 | 100.17 |
| 63 o-Xylene | 106 | 8.241 | 8.241 (1.075) | 389371 | 49.7531 | 49.75 |

| | | | QUANT SIG MASS | RT | EXP RT | REL RT | RESPONSE | CONCENTRATIONS ON-COLUMN ( ug/l) | FINAL ( ug/l) |
|---|---|---|---|---|---|---|---|---|---|
| | 64 | Styrene | 104 | 8.260 | 8.256 | (1.077) | 683415 | 52.0997 | 52.09 |
| | 66 | Bromoform | 173 | 8.410 | 8.410 | (1.097) | 182169 | 49.3304 | 49.33 |
| | 67 | Isopropylbenzene | 105 | 8.560 | 8.560 | (1.116) | 931467 | 52.0964 | 52.09 |
| | 68 | 1,1,2,2-Tetrachloroethane | 83 | 8.837 | 8.837 | (0.915) | 280729 | 46.7506 | 46.75 |
| $ | 69 | 4-Bromofluorobenzene | 95 | 8.687 | 8.687 | (1.133) | 307493 | 49.9836 | 49.98 |
| * | 70 | 1,4-Dichlorobenzene-d4 | 152 | 9.662 | 9.662 | (1.000) | 376748 | 50.0000 | |
| | 71 | 1,2,3-Trichloropropane | 75 | 8.863 | 8.863 | (0.917) | 201551 | 48.0786 | 48.07(M) |
| | 73 | n-Propylbenzene | 91 | 8.912 | 8.912 | (0.922) | 1099273 | 52.6761 | 52.67 |
| | 74 | Bromobenzene | 156 | 8.803 | 8.803 | (0.911) | 306751 | 49.6271 | 49.62 |
| | 75 | 1,3,5-Trimethylbenzene | 105 | 9.066 | 9.066 | (0.938) | 806374 | 52.3068 | 52.30 |
| | 76 | 2-Chlorotoluene | 91 | 8.972 | 8.972 | (0.929) | 683941 | 49.9441 | 49.94 |
| | 77 | 4-Chlorotoluene | 91 | 9.069 | 9.070 | (0.939) | 800114 | 51.2527 | 51.25 |
| | 78 | tert-Butylbenzene | 119 | 9.336 | 9.336 | (0.966) | 666730 | 52.8346 | 52.83 |
| | 79 | 1,2,4-Trimethylbenzene | 105 | 9.381 | 9.381 | (0.971) | 832541 | 51.3249 | 51.32 |
| | 81 | sec-Butylbenzene | 105 | 9.519 | 9.519 | (0.985) | 909529 | 54.1700 | 54.16 |
| | 82 | p-Isopropyltoluene | 119 | 9.651 | 9.647 | (0.999) | 823827 | 54.7550 | 54.75 |
| | 83 | 1,3-Dichlorobenzene | 146 | 9.606 | 9.606 | (0.994) | 525438 | 51.2160 | 51.21 |
| | 84 | 1,4-Dichlorobenzene | 146 | 9.681 | 9.681 | (1.002) | 556610 | 49.7188 | 49.71 |
| | 87 | n-Butylbenzene | 91 | 9.995 | 9.992 | (1.035) | 735043 | 50.6672 | 50.66 |
| | 88 | 1,2-Dichlorobenzene | 146 | 9.992 | 9.992 | (1.034) | 523296 | 49.5268 | 49.52 |
| | 89 | 1,2-Dibromo-3-Chloropropane | 155 | 10.655 | 10.655 | (1.103) | 48516 | 50.5353 | 50.53 |
| | 90 | 1,2,4-Trichlorobenzene | 180 | 11.337 | 11.337 | (1.173) | 364475 | 54.6601 | 54.66 |
| | 91 | Hexachlorobutadiene | 225 | 11.480 | 11.480 | (1.188) | 170927 | 57.7383 | 57.73 |
| | 92 | Naphthalene | 128 | 11.544 | 11.540 | (1.195) | 799121 | 52.6729 | 52.67 |
| | 93 | 1,2,3-Trichlorobenzene | 180 | 11.739 | 11.739 | (1.215) | 337140 | 52.7917 | 52.79 |
| M | 94 | 1,2-Dichloroethylene (total) | 96 | | | | 422281 | 98.2454 | 98.24 |
| M | 95 | Xylenes (total) | 106 | | | | 1183678 | 149.928 | 149.92 |
| | 141 | Cyclohexane | 56 | 4.121 | 4.121 | (0.987) | 238664 | 51.7326 | 51.73 |
| | 138 | Freon TF | 101 | 1.913 | 1.913 | (0.458) | 177599 | 52.9072 | 52.90 |
| | 147 | Methylcyclohexane | 55 | 5.377 | 5.377 | (1.083) | 427649 | 50.8929 | 50.89 |
| | 146 | Methyl Acetate | 43 | 2.228 | 2.228 | (0.533) | 99131 | 48.1755 | 48.17 |
| | 148 | Tert-Butyl alcohol | 59 | 2.423 | 2.427 | (0.580) | 311463 | 983.641 | 983.64 |
| | 149 | Isopropyl Alcohol | 45 | 2.090 | 2.090 | (0.500) | 170003 | 1028.04 | 1028.03 |

## QC Flag Legend

M - Compound response manually integrated.
H - Operator selected an alternate compound hit.




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Column phase: DB624

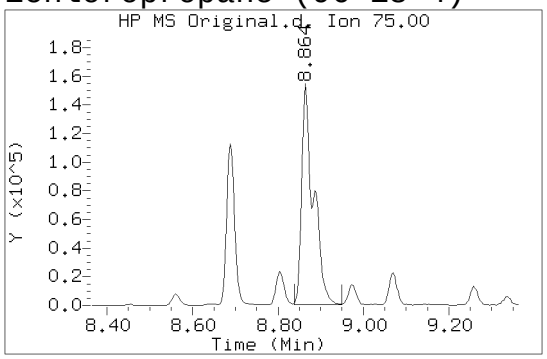
Instrument: voa6.i
Operator: PC
Column diameter: 0.18

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Inj Date : 16-DEC-2022 15:49
InstruID : voa6.i
LabSampID : ICV

## 1,2,3-Trichloropropane (96-18-4)

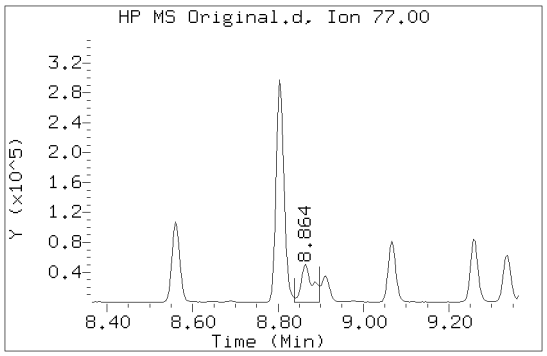
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27-Dec-2022
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### BEFORE

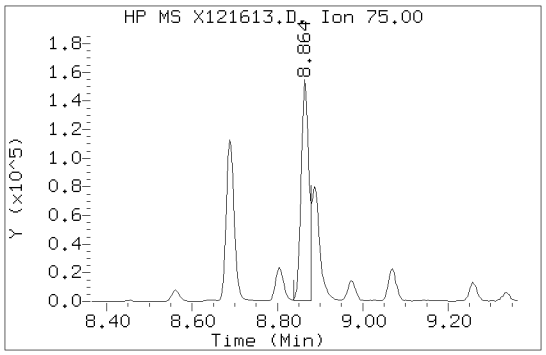
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### Reason Code:

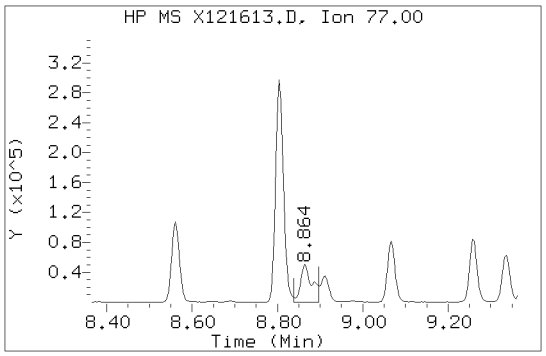
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13-Feb-2023
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linh
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### AFTER

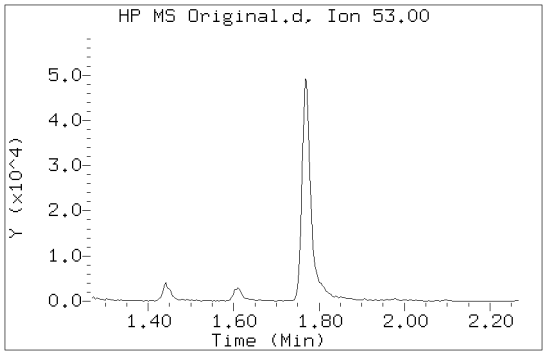
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## Chloroprene (126-99-8)

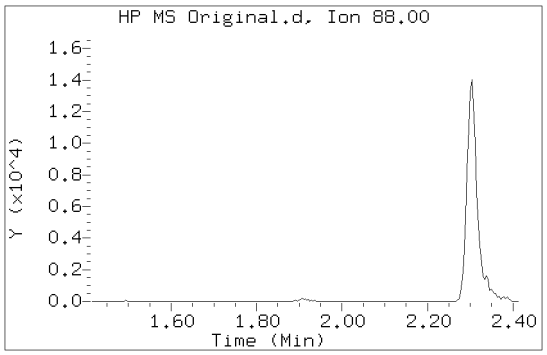
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### BEFORE

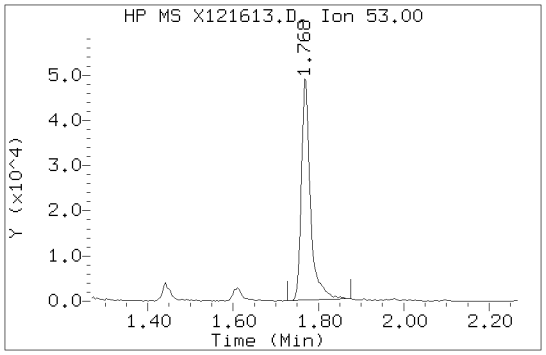
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pham




### Reason Code:

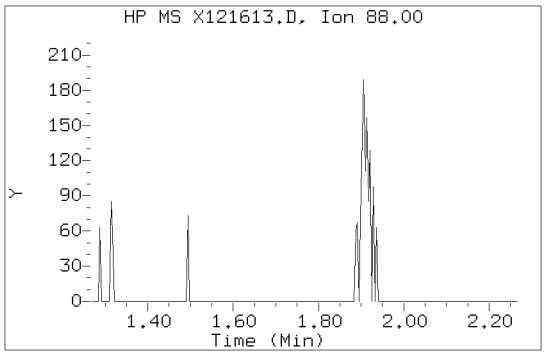
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MASS
53
AREA
74243
HEIGHT
48931
13-Feb-2023
13:08
linh
pham




### AFTER

MASS
88
AREA
0
HEIGHT
0
13-Feb-2023
13:08
linh
pham



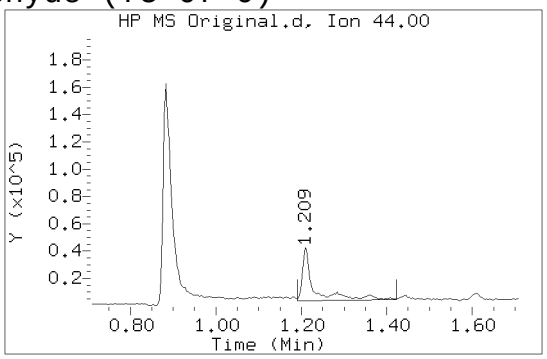
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Inj Date : 16-DEC-2022 15:49
InstruID : voa6.i
LabSampID : ICV

Acetaldehyde (75-07-0)

Reason Code:

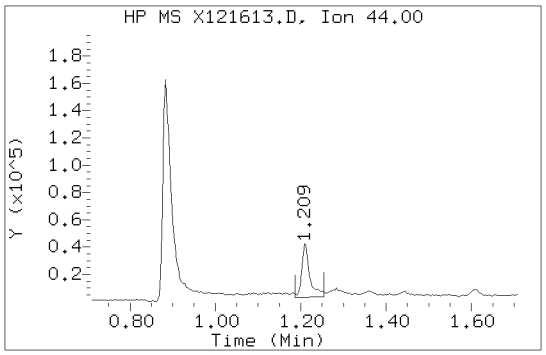
BEFORE

MASS
44
AREA
75387
HEIGHT
39303
27-Dec-2022
16:04
linh
pham



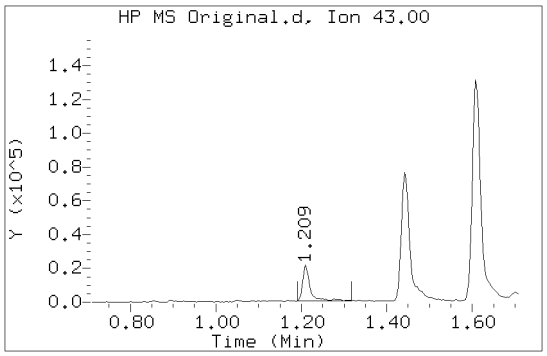

AFTER

MASS
44
AREA
52697
HEIGHT
39303
13-Feb-2023
13:08
linh
pham



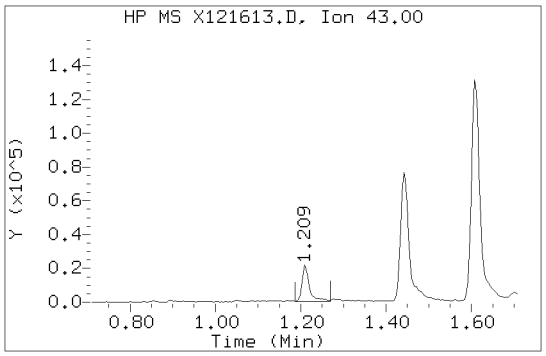

BEFORE

MASS
43
AREA
27778
HEIGHT
21502
27-Dec-2022
16:04
linh
pham



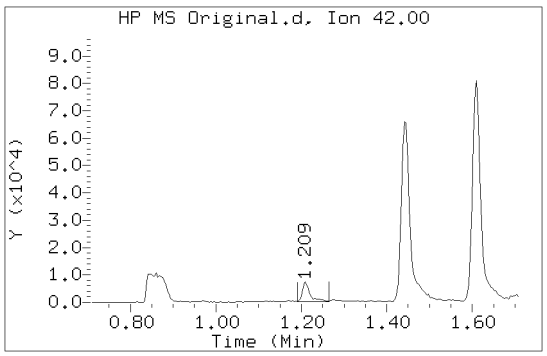

AFTER

MASS
43
AREA
26760
HEIGHT
21664
13-Feb-2023
13:08
linh
pham



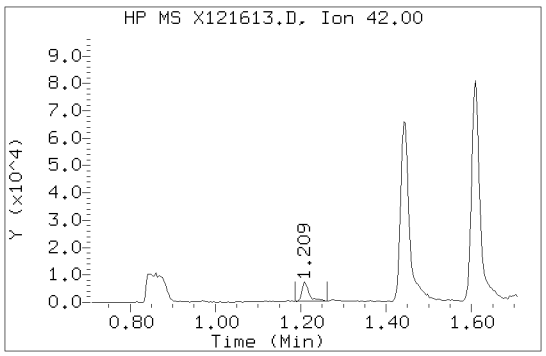

BEFORE

MASS
42
AREA
8969
HEIGHT
7131
27-Dec-2022
16:04
linh
pham




AFTER

MASS
42
AREA
8550
HEIGHT
7027
13-Feb-2023
13:08
linh
pham



01255472

right solutions.
right partner.

# Raw Data VOA6 427850

## Volatiles by  by EPA 8260

Workorder

HS23020265

Client

Aptim Environmental & Infrastucture, Inc.

Project

LHAAP46 Febuary 2023

02/28/2023

ALS Environmental–Houston Laboratory
10450 Stancliff Road, Suite 210, Houston, TX 77099
Phone (281) 530-5656 Fax (281) 530-5887
www.alsglobal.com

Data File: \\NAHSTWS005\Target\chem\voa6.i\X230211.b\X021101.D  Page 1
Report Date: 11-Feb-2023 12:36

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X230211.b\X021101.D
Lab Smp Id: BFB  Client Smp ID: BFB
Inj Date  : 11-FEB-2023 11:54
Operator  : PC  Inst ID: voa6.i
Smp Info  : BFB;BFB;3;;BFB
Misc Info : V6;WATER;0;1;
Comment   :
Method    : \\NAHSTWS005\Target\chem\voa6.i\X230211.b\bfb.m
Meth Date : 01-Dec-2022 12:59 Linh.Pham  Quant Type: ISTD
Cal Date  :  Cal File:
Als bottle: 1  QC Sample: BFB
Dil Factor: 1.00000
Integrator: HP RTE  Compound Sublist: all.sub
Target Version:  4.14  Sample Matrix: WATER
Processing Host: NAHSTW7051

Concentration Formula: Amt * DF * Uf * Vf * Vi * CpndVariable

| Name | Value | Description |
|---|---|---|
| DF | 1.000 | Dilution Factor |
| Uf | 5.000 | ng unit correction factor |
| Vf | 1.000 | Volumetric correction factor |
| Vi | 2.000 | Injection Volume |
| Cpnd Variable | | Local Compound Variable |

| RT | EXP RT | REL RT | MASS | RESPONSE | CONCENTRATIONS ON-COL ( ug/L) | CONCENTRATIONS FINAL ( ug/l) | TARGET RANGE | RATIO |
|---|---|---|---|---|---|---|---|---|
| 1 bfb | | | | | | CAS #: 460-00-4 | | |
| 8.687 | 8.889 | ( 0.000) | 95 | 195968 | | | 0.00- 100.00 | 100.00 |
| 8.687 | 8.889 | ( 0.000) | 50 | 30128 | | | 15.00- 40.00 | 15.37 |
| 8.687 | 8.889 | ( 0.000) | 75 | 90576 | | | 30.00- 60.00 | 46.22 |
| 8.687 | 8.889 | ( 0.000) | 96 | 13038 | | | 5.00- 9.00 | 6.65 |
| 8.687 | 8.889 | ( 0.000) | 173 | 1122 | | | 0.00- 2.00 | 0.73 |
| 8.687 | 8.889 | ( 0.000) | 174 | 153152 | | | 50.00- 0.00 | 78.15 |
| 8.687 | 8.889 | ( 0.000) | 175 | 11843 | | | 5.00- 9.00 | 7.73 |
| 8.687 | 8.889 | ( 0.000) | 176 | 150336 | | | 95.00- 101.00 | 98.16 |
| 8.687 | 8.889 | ( 0.000) | 177 | 10971 | | | 5.00- 9.00 | 7.30 |

| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 95 | Base Peak, 100% relative abundance | 100.00 |
| 50 | 15.00 - 40.00% of mass 95 | 15.37 |
| 75 | 30.00 - 60.00% of mass 95 | 46.22 |
| 96 | 5.00 - 9.00% of mass 95 | 6.65 |
| 173 | Less than 2.00% of mass 174 | 0.57 ( 0.73) |
| 174 | Greater than 50.00% of mass 95 | 78.15 |
| 175 | 5.00 - 9.00% of mass 174 | 6.04 ( 7.73) |
| 176 | 95.00 - 101.00% of mass 174 | 76.71 ( 98.16) |
| 177 | 5.00 - 9.00% of mass 176 | 5.60 ( 7.30) |

Data File: X021101.D
Spectrum: Scan 2159 ( 8.68)
Location of Maximum: 95.00
Number of points: 119

| m/z | Y | m/z | Y | m/z | Y | m/z | Y |
|---|---|---|---|---|---|---|---|
| 36.00 | 1666 | 67.00 | 578 | 99.10 | 298 | 143.80 | 122 |
| 37.00 | 7767 | 68.00 | 18000 | 102.80 | 92 | 144.70 | 107 |
| 38.00 | 7440 | 69.10 | 19512 | 103.90 | 706 | 145.80 | 279 |
| 39.00 | 3817 | 70.00 | 2052 | 104.90 | 543 | 146.70 | 147 |
| 40.00 | 1945 | 71.10 | 503 | 105.80 | 666 | 147.90 | 542 |
| 41.10 | 1432 | 72.00 | 996 | 107.00 | 296 | 148.90 | 83 |
| 42.10 | 2256 | 73.00 | 7575 | 110.60 | 126 | 150.00 | 149 |
| 43.10 | 1318 | 74.00 | 27904 | 111.90 | 185 | 151.80 | 102 |
| 44.00 | 1792 | 75.00 | 90576 | 112.60 | 80 | 152.40 | 153 |
| 45.10 | 1833 | 76.00 | 7895 | 113.00 | 86 | 152.90 | 288 |
| 47.00 | 2146 | 76.90 | 1136 | 115.00 | 225 | 153.80 | 117 |
| 48.00 | 1214 | 78.10 | 1029 | 115.70 | 634 | 155.00 | 304 |
| 49.10 | 6753 | 78.90 | 4381 | 116.80 | 1298 | 157.00 | 342 |
| 50.00 | 30128 | 80.00 | 1008 | 117.90 | 684 | 158.70 | 215 |
| 51.10 | 11002 | 81.00 | 4251 | 118.90 | 767 | 159.10 | 198 |
| 52.00 | 552 | 82.00 | 722 | 120.10 | 60 | 159.70 | 58 |
| 52.80 | 181 | 82.80 | 318 | 121.50 | 74 | 160.80 | 176 |
| 53.90 | 260 | 83.90 | 107 | 122.80 | 56 | 170.00 | 75 |
| 55.00 | 3630 | 85.20 | 270 | 123.90 | 63 | 170.80 | 103 |
| 56.10 | 3474 | 86.00 | 349 | 125.90 | 51 | 171.80 | 66 |
| 57.00 | 5634 | 87.00 | 7695 | 126.80 | 95 | 173.00 | 1122 |
| 58.10 | 535 | 87.90 | 8607 | 127.90 | 662 | 173.90 | 153152 |
| 58.90 | 63 | 90.90 | 672 | 128.80 | 345 | 175.00 | 11843 |
| 60.00 | 1579 | 92.00 | 4748 | 129.90 | 728 | 175.90 | 150336 |
| 61.00 | 7872 | 93.00 | 7660 | 130.90 | 250 | 176.90 | 10971 |
| 62.10 | 8078 | 94.00 | 19776 | 135.00 | 316 | 178.00 | 356 |
| 63.00 | 5824 | 95.00 | 195968 | 136.90 | 394 | 185.80 | 161 |
| 64.00 | 712 | 96.00 | 13038 | 141.00 | 1520 | 207.20 | 59 |
| 65.20 | 220 | 97.10 | 361 | 141.90 | 261 | 278.20 | 55 |
| 65.80 | 135 | 98.10 | 1528 | 142.90 | 1269 | | |

Data File: \\NAHSTWS005\Target\chem\voa6.i\X230211.b\X021101.D



Date : 11-FEB-2023 11:54

Client ID: BFB

Instrument: voa6.i

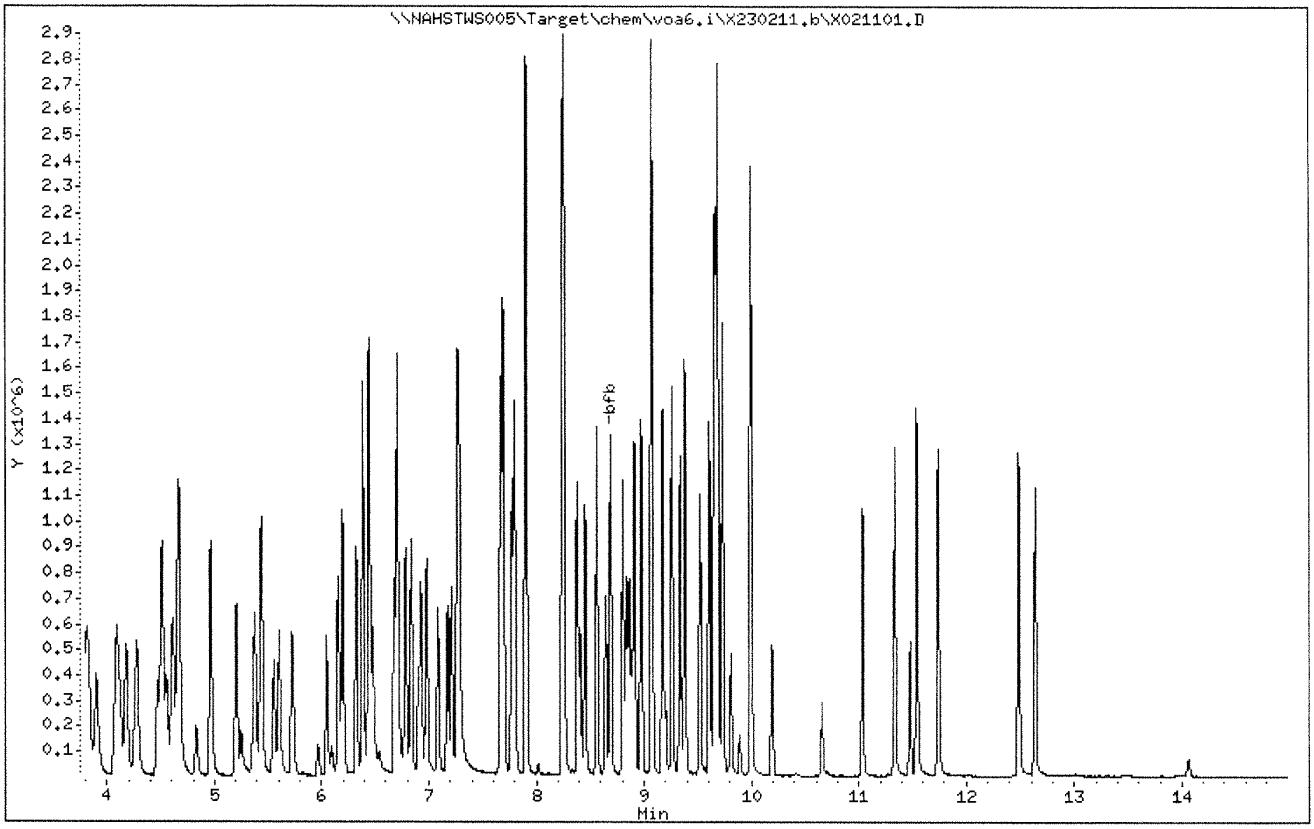
Sample Info: BFB;BFB;3;;BFB

Volume Injected (uL): 2.0

Operator: PC

Column phase: DB624

Column diameter: 0.25



Data File: \\NAHSTWS005\Target\chem\voa6.i\X230211.b\X021101.D



Date : 11-FEB-2023 11:54

Client ID: BFB

Instrument: voa6.i

Sample Info: BFB;BFB;3;;BFB

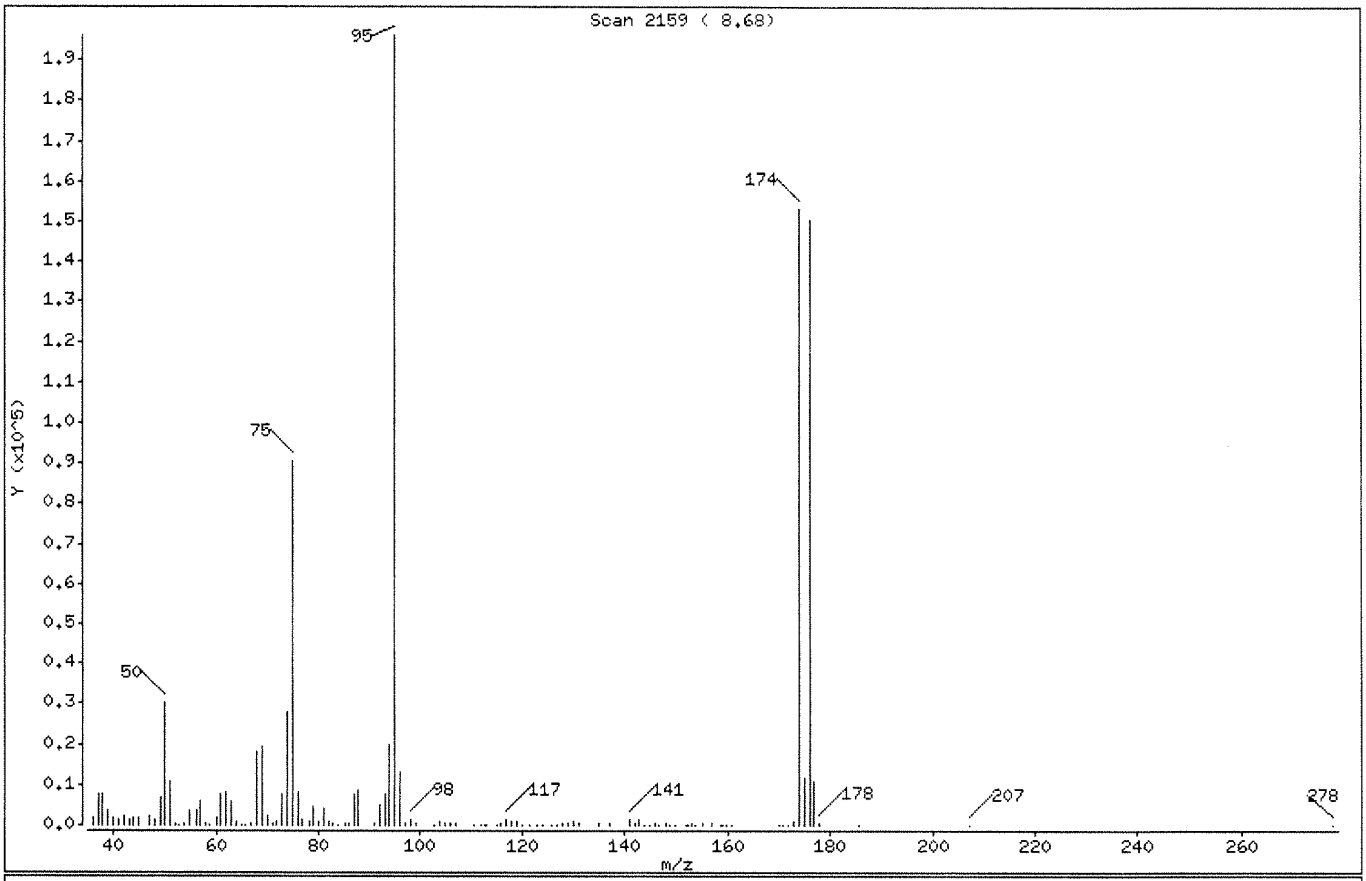
Volume Injected (uL): 2.0

Operator: PC

Column phase: DB624

Column diameter: 0.25

1 bfb




| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 95 | Base Peak, 100% relative abundance | 100.00 |
| 50 | 15.00 - 40.00% of mass 95 | 15.37 |
| 75 | 30.00 - 60.00% of mass 95 | 46.22 |
| 96 | 5.00 - 9.00% of mass 95 | 6.65 |
| 173 | Less than 2.00% of mass 174 | 0.57 ( 0.73) |
| 174 | Greater than 50.00% of mass 95 | 78.15 |
| 175 | 5.00 - 9.00% of mass 174 | 6.04 ( 7.73) |
| 176 | 95.00 - 101.00% of mass 174 | 76.71 ( 98.16) |
| 177 | 5.00 - 9.00% of mass 176 | 5.60 ( 7.30) |

Data File: \\NAHSTWS005\Target\chem\voa6.i\X230211.b\X021101.D 

Date : 11-FEB-2023 11:54

Client ID: BFB Instrument: voa6.i

Sample Info: BFB;BFB;3;;BFB

Volume Injected (uL): 2.0 Operator: PC

Column phase: DB624 Column diameter: 0.25

Data File: X021101.D
Spectrum: Scan 2159 ( 8.68)
Location of Maximum: 95.00
Number of points: 119

| m/z | Y | m/z | Y | m/z | Y | m/z | Y |
|---|---|---|---|---|---|---|---|
| 36.00 | 1666 | 67.00 | 578 | 99.10 | 298 | 143.80 | 122 |
| 37.00 | 7767 | 68.00 | 18000 | 102.80 | 92 | 144.70 | 107 |
| 38.00 | 7440 | 69.10 | 19512 | 103.90 | 706 | 145.80 | 279 |
| 39.00 | 3817 | 70.00 | 2052 | 104.90 | 543 | 146.70 | 147 |
| 40.00 | 1945 | 71.10 | 503 | 105.80 | 666 | 147.90 | 542 |
| 41.10 | 1432 | 72.00 | 996 | 107.00 | 296 | 148.90 | 83 |
| 42.10 | 2256 | 73.00 | 7575 | 110.60 | 126 | 150.00 | 149 |
| 43.10 | 1318 | 74.00 | 27904 | 111.90 | 185 | 151.80 | 102 |
| 44.00 | 1792 | 75.00 | 90576 | 112.60 | 80 | 152.40 | 153 |
| 45.10 | 1833 | 76.00 | 7895 | 113.00 | 86 | 152.90 | 288 |
| 47.00 | 2146 | 76.90 | 1136 | 115.00 | 225 | 153.80 | 117 |
| 48.00 | 1214 | 78.10 | 1029 | 115.70 | 634 | 155.00 | 304 |
| 49.10 | 6753 | 78.90 | 4381 | 116.80 | 1298 | 157.00 | 342 |
| 50.00 | 30128 | 80.00 | 1008 | 117.90 | 684 | 158.70 | 215 |
| 51.10 | 11002 | 81.00 | 4251 | 118.90 | 767 | 159.10 | 198 |
| 52.00 | 552 | 82.00 | 722 | 120.10 | 60 | 159.70 | 58 |
| 52.80 | 181 | 82.80 | 318 | 121.50 | 74 | 160.80 | 176 |
| 53.90 | 260 | 83.90 | 107 | 122.80 | 56 | 170.00 | 75 |
| 55.00 | 3630 | 85.20 | 270 | 123.90 | 63 | 170.80 | 103 |
| 56.10 | 3474 | 86.00 | 349 | 125.90 | 51 | 171.80 | 66 |
| 57.00 | 5634 | 87.00 | 7695 | 126.80 | 95 | 173.00 | 1122 |
| 58.10 | 535 | 87.90 | 8607 | 127.90 | 662 | 173.90 | 153152 |
| 58.90 | 63 | 90.90 | 672 | 128.80 | 345 | 175.00 | 11843 |
| 60.00 | 1579 | 92.00 | 4748 | 129.90 | 728 | 175.90 | 150336 |
| 61.00 | 7872 | 93.00 | 7660 | 130.90 | 250 | 176.90 | 10971 |
| 62.10 | 8078 | 94.00 | 19776 | 135.00 | 316 | 178.00 | 356 |
| 63.00 | 5824 | 95.00 | 195968 | 136.90 | 394 | 185.80 | 161 |
| 64.00 | 712 | 96.00 | 13038 | 141.00 | 1520 | 207.20 | 59 |
| 65.20 | 220 | 97.10 | 361 | 141.90 | 261 | 278.20 | 55 |
| 65.80 | 135 | 98.10 | 1528 | 142.90 | 1269 | | |

Data File : \\NAHSTWS005\Target\chem\voa6.i\X230211.b\X021101.D
Inj Date  : 11-FEB-2023 11:54
InstruID  : voa6.i
LabSampID : BFB

NO MANUAL INTEGRATIONS

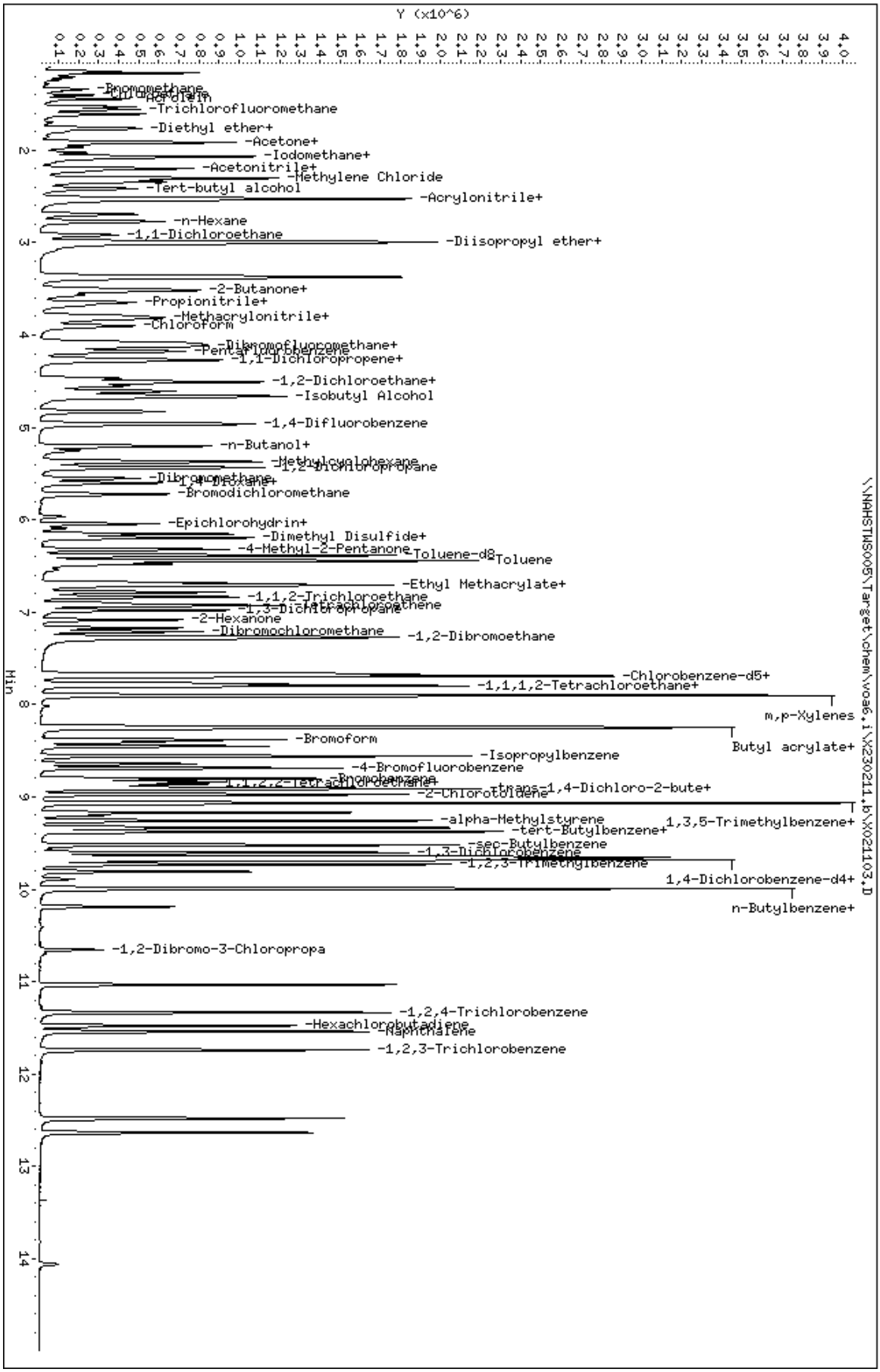
ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X230211.b\X021103.D
Lab Smp Id: CCV Client Smp ID: CCV
Inj Date : 11-FEB-2023 12:36
Operator : PC Inst ID: voa6.i
Smp Info : CCV;CCV;2;;
Misc Info : V6;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X230211.b\8260W.m
Meth Date : 28-Feb-2023 10:34 voa6.i Quant Type: ISTD
Cal Date : 16-DEC-2022 14:04 Cal File: X121608.D
Als bottle: 3 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260-dryclean.sub
Target Version: 4.14
Processing Host: NAHSTW7017

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

| Name | Value | Description |
|---|---|---|
| DF | 1.000 | Dilution Factor |
| Uf | 5.000 | ng unit correction factor |
| Vo | 5.000 | sample purged |
| Cpnd Variable | | Local Compound Variable |

| Compounds | QUANT SIG MASS | RT | EXP RT | REL RT | RESPONSE | AMOUNTS CAL-AMT ( ug/l) | ON-COL ( ug/l) |
|---|---|---|---|---|---|---|---|
| * 1 Pentafluorobenzene | 168 | 4.178 | 4.178 | (1.000) | 579862 | 50.0000 | |
| $ 30 Dibromofluoromethane | 113 | 4.095 | 4.095 | (0.980) | 262711 | 50.0000 | 47.17 |
| $ 35 1,2-Dichloroethane-d4 | 65 | 4.466 | 4.466 | (1.069) | 296085 | 50.0000 | 50.38 |
| * 36 1,4-Difluorobenzene | 114 | 4.961 | 4.961 | (1.000) | 877428 | 50.0000 | |
| * 47 Chlorobenzene-d5 | 117 | 7.668 | 7.668 | (1.000) | 808203 | 50.0000 | |
| $ 48 Toluene-d8 | 98 | 6.386 | 6.386 | (0.833) | 1014203 | 50.0000 | 50.78 |
| $ 69 4-Bromofluorobenzene | 95 | 8.687 | 8.687 | (1.133) | 401474 | 50.0000 | 53.77 |
| * 70 1,4-Dichlorobenzene-d4 | 152 | 9.662 | 9.662 | (1.000) | 444497 | 50.0000 | |
| 5 Vinyl Chloride | 62 | 1.141 | 1.141 | (0.273) | 254669 | 50.0000 | 50.27 |
| 11 1,1-Dichloroethene | 96 | 1.914 | 1.914 | (0.458) | 186902 | 50.0000 | 42.46 |
| 20 trans-1,2-Dichloroethene | 96 | 2.525 | 2.525 | (0.604) | 234351 | 50.0000 | 47.58 |
| 27 cis-1,2-Dichloroethene | 96 | 3.522 | 3.522 | (0.843) | 272931 | 50.0000 | 45.53 |
| 38 Trichloroethene | 130 | 5.205 | 5.205 | (1.049) | 287287 | 50.0000 | 48.34 |
| 56 Tetrachloroethene | 164 | 6.925 | 6.925 | (0.903) | 226184 | 50.0000 | 48.93 |




Data File: \\NAHSTWS005\Target\chem\voa6.i\X230211.b\X021103.D
Date : 11-FEB-2023 12:36
Client ID: CCV
Sample Info: CCV;CCV;2;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File : \\NAHSTWS005\Target\chem\voa6.i\X230211.b\X021103.D
Inj Date  : 11-FEB-2023 12:36
InstruID  : voa6.i
LabSampID : CCV

NO MANUAL INTEGRATIONS

Data File: \\NAHSTWS005\Target\chem\voa6.i\X230211.b\X021104.D  Page 1
Report Date: 28-Feb-2023 10:34

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X230211.b\X021104.D
Lab Smp Id: CCB  Client Smp ID: CCB
Inj Date  : 11-FEB-2023 12:57
Operator  : PC  Inst ID: voa6.i
Smp Info  : CCB;CCB;;;
Misc Info : V6;WATER;0;1;
Comment   :
Method    : \\nahstws005\Target\chem\voa6.i\X230211.b\8260W.m
Meth Date : 28-Feb-2023 10:34 voa6.i  Quant Type: ISTD
Cal Date  : 16-DEC-2022 14:04  Cal File: X121608.D
Als bottle: 4
Dil Factor: 1.00000
Integrator: HP RTE  Compound Sublist: 8260-dryclean.sub
Target Version:  4.14
Processing Host: NAHSTW7017

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

| Name | Value | Description |
|---|---|---|
| DF | 1.000 | Dilution Factor |
| Uf | 5.000 | ng unit correction factor |
| Vo | 5.000 | sample purged |
| Cpnd Variable | | Local Compound Variable |

| Compounds | QUANT SIG MASS | RT | EXP RT | REL RT | RESPONSE | CONCENTRATIONS ON-COLUMN ( ug/l) | FINAL ( ug/l) |
|---|---|---|---|---|---|---|---|
| * 1 Pentafluorobenzene | 168 | 4.177 | 4.178 | (1.000) | 637997 | 50.0000 | |
| $ 30 Dibromofluoromethane | 113 | 4.091 | 4.095 | (0.979) | 286248 | 46.7156 | 46.71 |
| $ 35 1,2-Dichloroethane-d4 | 65 | 4.470 | 4.466 | (1.070) | 319914 | 49.4797 | 49.47 |
| * 36 1,4-Difluorobenzene | 114 | 4.965 | 4.961 | (1.000) | 940120 | 50.0000 | |
| * 47 Chlorobenzene-d5 | 117 | 7.667 | 7.668 | (1.000) | 848699 | 50.0000 | |
| $ 48 Toluene-d8 | 98 | 6.385 | 6.386 | (0.833) | 1112717 | 53.0574 | 53.05 |
| $ 69 4-Bromofluorobenzene | 95 | 8.687 | 8.687 | (1.133) | 427081 | 54.4757 | 54.47 |
| * 70 1,4-Dichlorobenzene-d4 | 152 | 9.662 | 9.662 | (1.000) | 455522 | 50.0000 | |

Data File: \\NAHSTWS005\Target\chem\voa6.i\X230211.b\X021105.D  Page 1
Report Date: 28-Feb-2023 10:34

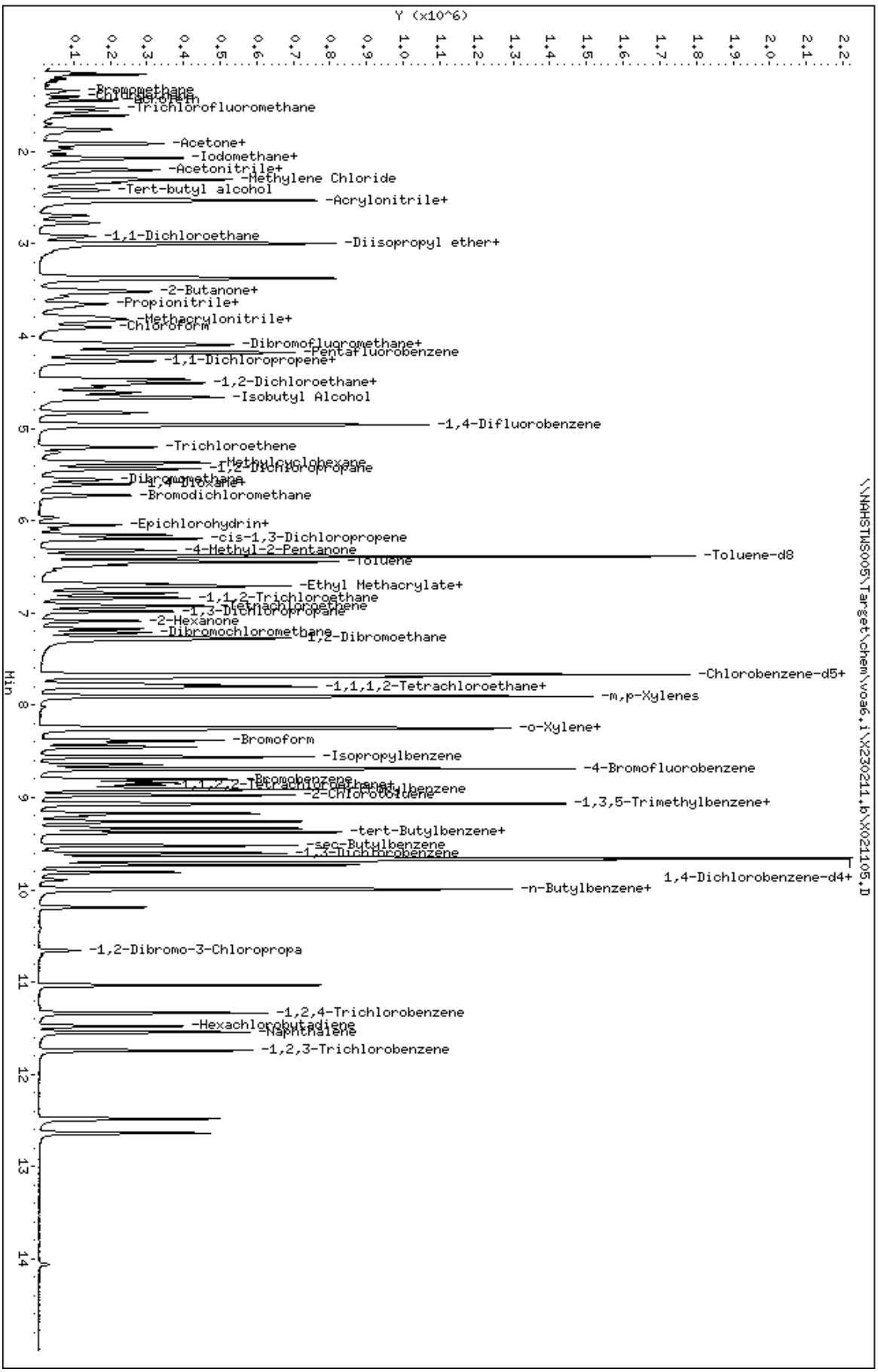
ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X230211.b\X021105.D
Lab Smp Id: VLCSW-230211  Client Smp ID: VLCSW-230211
Inj Date  : 11-FEB-2023 13:18
Operator  : PC  Inst ID: voa6.i
Smp Info  : VLCSW-230211;VLCSW-230211;3;;LCS
Misc Info : V6;WATER;0;1;
Comment   :
Method    : \\NAHSTWS005\Target\chem\voa6.i\X230211.b\8260W.m
Meth Date : 28-Feb-2023 10:34 voa6.i  Quant Type: ISTD
Cal Date  : 16-DEC-2022 14:04  Cal File: X121608.D
Als bottle: 5  QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE  Compound Sublist: 8260-dryclean.sub
Target Version:  4.14
Processing Host: NAHSTW7017

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

| Name | Value | Description |
|---|---|---|
| DF | 1.000 | Dilution Factor |
| Uf | 5.000 | ng unit correction factor |
| Vo | 5.000 | sample purged |
| Cpnd Variable | | Local Compound Variable |

| Compounds | QUANT SIG MASS | RT | EXP RT | REL RT | RESPONSE | CONCENTRATIONS ON-COLUMN ( ug/l) | FINAL ( ug/l) |
|---|---|---|---|---|---|---|---|
| * 1 Pentafluorobenzene | 168 | 4.177 | 4.178 | (1.000) | 563679 | 50.0000 | |
| $ 30 Dibromofluoromethane | 113 | 4.095 | 4.095 | (0.980) | 269794 | 49.8466 | 49.84 |
| $ 35 1,2-Dichloroethane-d4 | 65 | 4.470 | 4.466 | (1.070) | 313206 | 54.7997 | 54.79 |
| * 36 1,4-Difluorobenzene | 114 | 4.961 | 4.961 | (1.000) | 862489 | 50.0000 | |
| * 47 Chlorobenzene-d5 | 117 | 7.667 | 7.668 | (1.000) | 814754 | 50.0000 | |
| $ 48 Toluene-d8 | 98 | 6.385 | 6.386 | (0.833) | 1025842 | 50.9529 | 50.95 |
| $ 69 4-Bromofluorobenzene | 95 | 8.687 | 8.687 | (1.133) | 409387 | 54.3945 | 54.39 |
| * 70 1,4-Dichlorobenzene-d4 | 152 | 9.662 | 9.662 | (1.000) | 449808 | 50.0000 | |
| 5 Vinyl Chloride | 62 | 1.141 | 1.141 | (0.273) | 93301 | 18.9480 | 18.94 |
| 11 1,1-Dichloroethene | 96 | 1.913 | 1.914 | (0.458) | 69041 | 16.1383 | 16.13 |
| 20 trans-1,2-Dichloroethene | 96 | 2.528 | 2.525 | (0.605) | 92185 | 19.2536 | 19.25 |
| 27 cis-1,2-Dichloroethene | 96 | 3.525 | 3.522 | (0.844) | 107714 | 18.4858 | 18.48 |
| 38 Trichloroethene | 130 | 5.204 | 5.205 | (1.049) | 106823 | 18.2863 | 18.28 |
| 56 Tetrachloroethene | 164 | 6.925 | 6.925 | (0.903) | 82247 | 17.6515 | 17.65 |




Data File: \\NAHSTMS005\Target\chem\voa6.i\X230211.b\X021105.D
Date : 11-FEB-2023 13:18
Client ID: VLCSW-230211
Sample Info: VLCSW-230211;VLCSW-230211;3;;LCS
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File : \\NAHSTWS005\Target\chem\voa6.i\X230211.b\X021105.D
Inj Date  : 11-FEB-2023 13:18
InstruID  : voa6.i
LabSampID : VLCSW-230211

NO MANUAL INTEGRATIONS

Data File: \\NAHSTWS005\Target\chem\voa6.i\X230211.b\X021107.D  Page 1
Report Date: 28-Feb-2023 10:34

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X230211.b\X021107.D
Lab Smp Id: VBLKW-230211  Client Smp ID: VBLKW-230211
Inj Date  : 11-FEB-2023 14:00
Operator  : PC  Inst ID: voa6.i
Smp Info  : VBLKW-230211;VBLKW-230211;3;;BLANK
Misc Info : V6;WATER;0;1;
Comment   :
Method    : \\NAHSTWS005\Target\chem\voa6.i\X230211.b\8260W.m
Meth Date : 28-Feb-2023 10:34 voa6.i  Quant Type: ISTD
Cal Date  : 16-DEC-2022 14:04  Cal File: X121608.D
Als bottle: 7  QC Sample: BLANK
Dil Factor: 1.00000
Integrator: HP RTE  Compound Sublist: 8260-dryclean.sub
Target Version:  4.14
Processing Host: NAHSTW7017

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

| Name | Value | Description |
|---|---|---|
| DF | 1.000 | Dilution Factor |
| Uf | 5.000 | ng unit correction factor |
| Vo | 5.000 | sample purged |
| Cpnd Variable | | Local Compound Variable |

| Compounds | QUANT SIG MASS | RT | EXP RT | REL RT | RESPONSE | CONCENTRATIONS ON-COLUMN ( ug/l) | FINAL ( ug/l) |
|---|---|---|---|---|---|---|---|
| * 1 Pentafluorobenzene | 168 | 4.178 | 4.178 | (1.000) | 653632 | 50.0000 | |
| $ 30 Dibromofluoromethane | 113 | 4.095 | 4.095 | (0.980) | 297242 | 47.3517 | 47.35 |
| $ 35 1,2-Dichloroethane-d4 | 65 | 4.466 | 4.466 | (1.069) | 331664 | 50.0668 | 50.06 |
| * 36 1,4-Difluorobenzene | 114 | 4.961 | 4.961 | (1.000) | 964669 | 50.0000 | |
| * 47 Chlorobenzene-d5 | 117 | 7.668 | 7.668 | (1.000) | 878934 | 50.0000 | |
| $ 48 Toluene-d8 | 98 | 6.386 | 6.386 | (0.833) | 1152652 | 53.0709 | 53.07 |
| $ 69 4-Bromofluorobenzene | 95 | 8.687 | 8.687 | (1.133) | 434814 | 53.5553 | 53.55 |
| * 70 1,4-Dichlorobenzene-d4 | 152 | 9.662 | 9.662 | (1.000) | 464071 | 50.0000 | |

01255488

Data File: \\NAHSTWS005\Target\chem\voa6.i\X230211.b\X021107.D



Date : 11-FEB-2023 14:00

Client ID: VBLKW-230211

Instrument: voa6.i

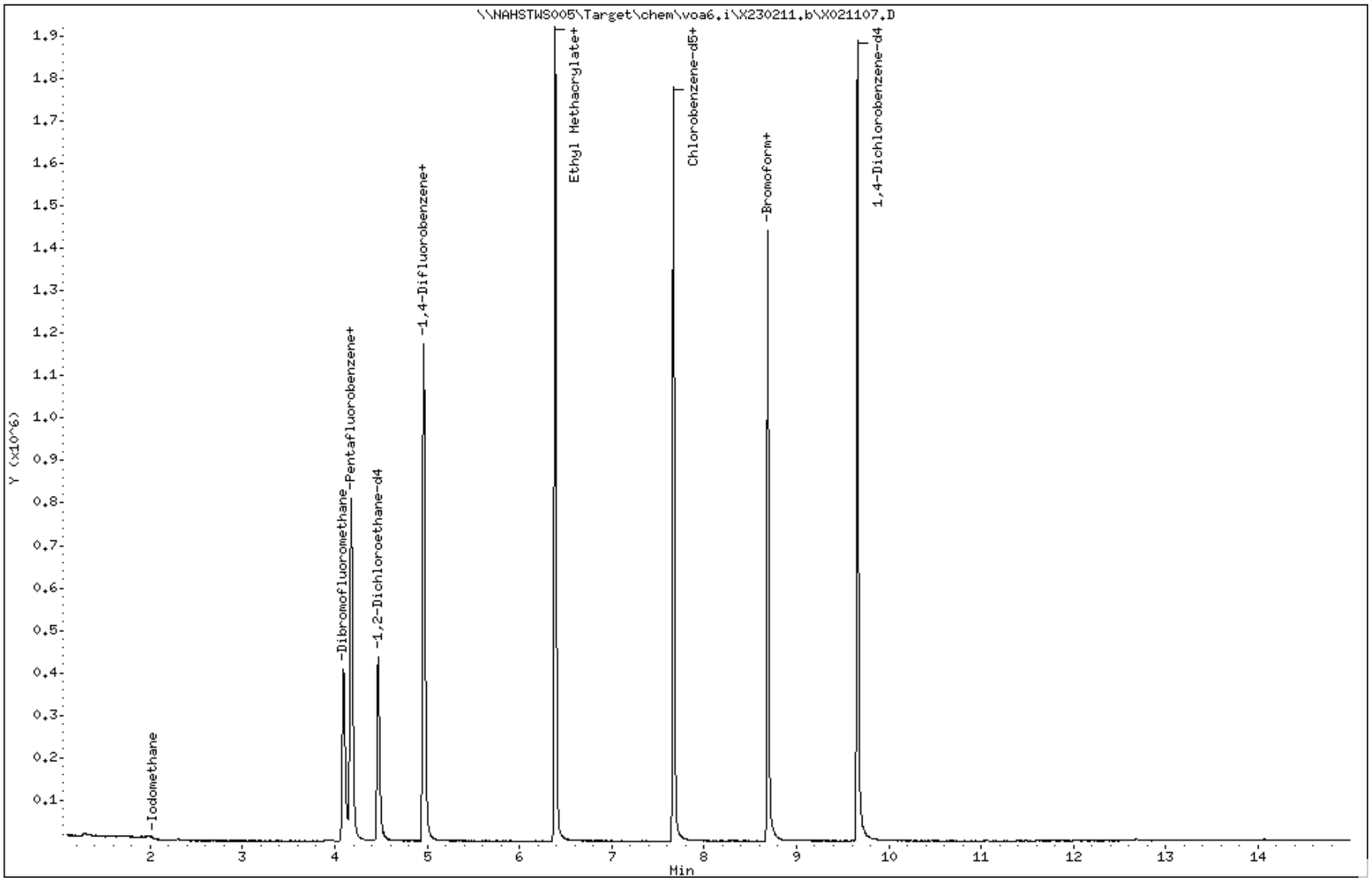
Sample Info: VBLKW-230211;VBLKW-230211;3;;BLANK

Purge Volume: 5.0

Operator: PC

Column phase: DB624

Column diameter: 0.18



Data File : \\NAHSTWS005\Target\chem\voa6.i\X230211.b\X021107.D
Inj Date  : 11-FEB-2023 14:00
InstruID  : voa6.i
LabSampID : VBLKW-230211

NO MANUAL INTEGRATIONS

Data File: \\NAHSTWS005\Target\chem\voa6.i\X230211.b\X021108.D  Page 1
Report Date: 20-Feb-2023 15:09

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X230211.b\X021108.D
Lab Smp Id: HS23020265-07  Client Smp ID: HS23020265-07
Inj Date  : 11-FEB-2023 14:21
Operator  : PC  Inst ID: voa6.i
Smp Info  : HS23020265-07;HS23020265-07;;;
Misc Info : V6;WATER;0;1;
Comment   :
Method    : \\NAHSTWS005\Target\chem\voa6.i\X230211.b\8260W.m
Meth Date : 20-Feb-2023 15:09 voa6.i  Quant Type: ISTD
Cal Date  : 16-DEC-2022 14:04  Cal File: X121608.D
Als bottle: 8
Dil Factor: 1.00000
Integrator: HP RTE  Compound Sublist: 8260-dryclean.sub
Target Version:  4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

| Name | Value | Description |
|---|---|---|
| DF | 1.000 | Dilution Factor |
| Uf | 5.000 | ng unit correction factor |
| Vo | 5.000 | sample purged |
| Cpnd Variable | | Local Compound Variable |

| Compounds | QUANT SIG MASS | RT | EXP RT | REL RT | RESPONSE | CONCENTRATIONS ON-COLUMN ( ug/l) | FINAL ( ug/l) |
|---|---|---|---|---|---|---|---|
| * 1 Pentafluorobenzene | 168 | 4.178 | 4.178 | (1.000) | 641042 | 50.0000 | |
| $ 30 Dibromofluoromethane | 113 | 4.095 | 4.095 | (0.980) | 287711 | 46.7314 | 46.73 |
| $ 35 1,2-Dichloroethane-d4 | 65 | 4.466 | 4.466 | (1.069) | 325029 | 50.0290 | 50.02 |
| * 36 1,4-Difluorobenzene | 114 | 4.965 | 4.961 | (1.000) | 939520 | 50.0000 | |
| * 47 Chlorobenzene-d5 | 117 | 7.668 | 7.668 | (1.000) | 829730 | 50.0000 | |
| $ 48 Toluene-d8 | 98 | 6.386 | 6.386 | (0.833) | 1109965 | 54.1361 | 54.13 |
| $ 69 4-Bromofluorobenzene | 95 | 8.687 | 8.687 | (1.133) | 417290 | 54.4437 | 54.44 |
| * 70 1,4-Dichlorobenzene-d4 | 152 | 9.662 | 9.662 | (1.000) | 441014 | 50.0000 | |

01255491

Data File: \\NAHSTWS005\Target\chem\voa6.i\X230211.b\X021108.D



Date : 11-FEB-2023 14:21

Client ID: HS23020265-07

Instrument: voa6.i

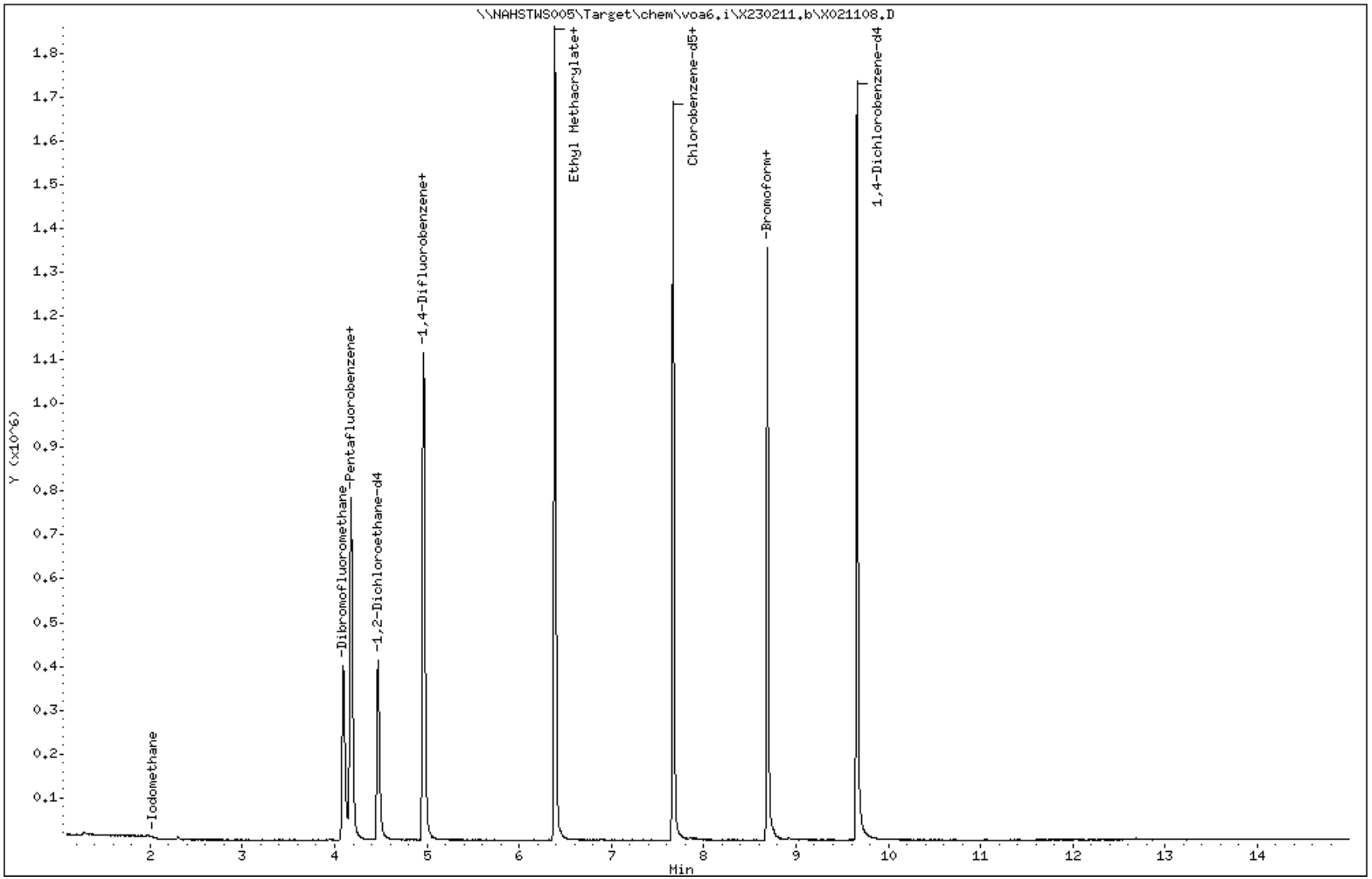
Sample Info: HS23020265-07;HS23020265-07;;;

Purge Volume: 5.0

Operator: PC

Column phase: DB624

Column diameter: 0.18



Data File : \\NAHSTWS005\Target\chem\voa6.i\X230211.b\X021108.D
Inj Date  : 11-FEB-2023 14:21
InstruID  : voa6.i
LabSampID : HS23020265-07

NO MANUAL INTEGRATIONS

Data File: \\NAHSTWS005\Target\chem\voa6.i\X230211.b\X021109.D  Page 1
Report Date: 20-Feb-2023 15:09

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X230211.b\X021109.D
Lab Smp Id: HS23020265-04  Client Smp ID: HS23020265-04
Inj Date  : 11-FEB-2023 14:42
Operator  : PC  Inst ID: voa6.i
Smp Info  : HS23020265-04;HS23020265-04;;;
Misc Info : V6;WATER;0;1;
Comment   :
Method    : \\NAHSTWS005\Target\chem\voa6.i\X230211.b\8260W.m
Meth Date : 20-Feb-2023 15:09 voa6.i  Quant Type: ISTD
Cal Date  : 16-DEC-2022 14:04  Cal File: X121608.D
Als bottle: 9
Dil Factor: 1.00000
Integrator: HP RTE  Compound Sublist: 8260-dryclean.sub
Target Version:  4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

| Name | Value | Description |
|---|---|---|
| DF | 1.000 | Dilution Factor |
| Uf | 5.000 | ng unit correction factor |
| Vo | 5.000 | sample purged |
| Cpnd Variable | | Local Compound Variable |

| Compounds | QUANT SIG MASS | RT | EXP RT | REL RT | RESPONSE | CONCENTRATIONS ON-COLUMN ( ug/l) | FINAL ( ug/l) |
|---|---|---|---|---|---|---|---|
| * 1 Pentafluorobenzene | 168 | 4.177 | 4.178 | (1.000) | 653275 | 50.0000 | |
| $ 30 Dibromofluoromethane | 113 | 4.099 | 4.095 | (0.981) | 294262 | 46.9010 | 46.90 |
| $ 35 1,2-Dichloroethane-d4 | 65 | 4.466 | 4.466 | (1.069) | 331556 | 50.0778 | 50.07 |
| * 36 1,4-Difluorobenzene | 114 | 4.961 | 4.961 | (1.000) | 956066 | 50.0000 | |
| * 47 Chlorobenzene-d5 | 117 | 7.667 | 7.668 | (1.000) | 861421 | 50.0000 | |
| $ 48 Toluene-d8 | 98 | 6.385 | 6.386 | (0.833) | 1134846 | 53.3134 | 53.31 |
| $ 69 4-Bromofluorobenzene | 95 | 8.687 | 8.687 | (1.133) | 428638 | 53.8676 | 53.86 |
| * 70 1,4-Dichlorobenzene-d4 | 152 | 9.662 | 9.662 | (1.000) | 453436 | 50.0000 | |
| 5 Vinyl Chloride | 62 | 1.145 | 1.141 | (0.274) | 2480 | 0.43458 | 0.43(a) |
| 11 1,1-Dichloroethene | 96 | 1.917 | 1.914 | (0.459) | 9540 | 1.92414 | 1.92(a) |
| 27 cis-1,2-Dichloroethene | 96 | 3.533 | 3.522 | (0.846) | 11936 | 1.76751 | 1.76(a) |
| 38 Trichloroethene | 130 | 5.205 | 5.205 | (1.049) | 185690 | 28.6758 | 28.67 |

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).

01255494

Data File: \\NAHSTWS005\Target\chem\voa6.i\X230211.b\X021109.D

Page 1

Date : 11-FEB-2023 14:42

Client ID: HS23020265-04

Instrument: voa6.i

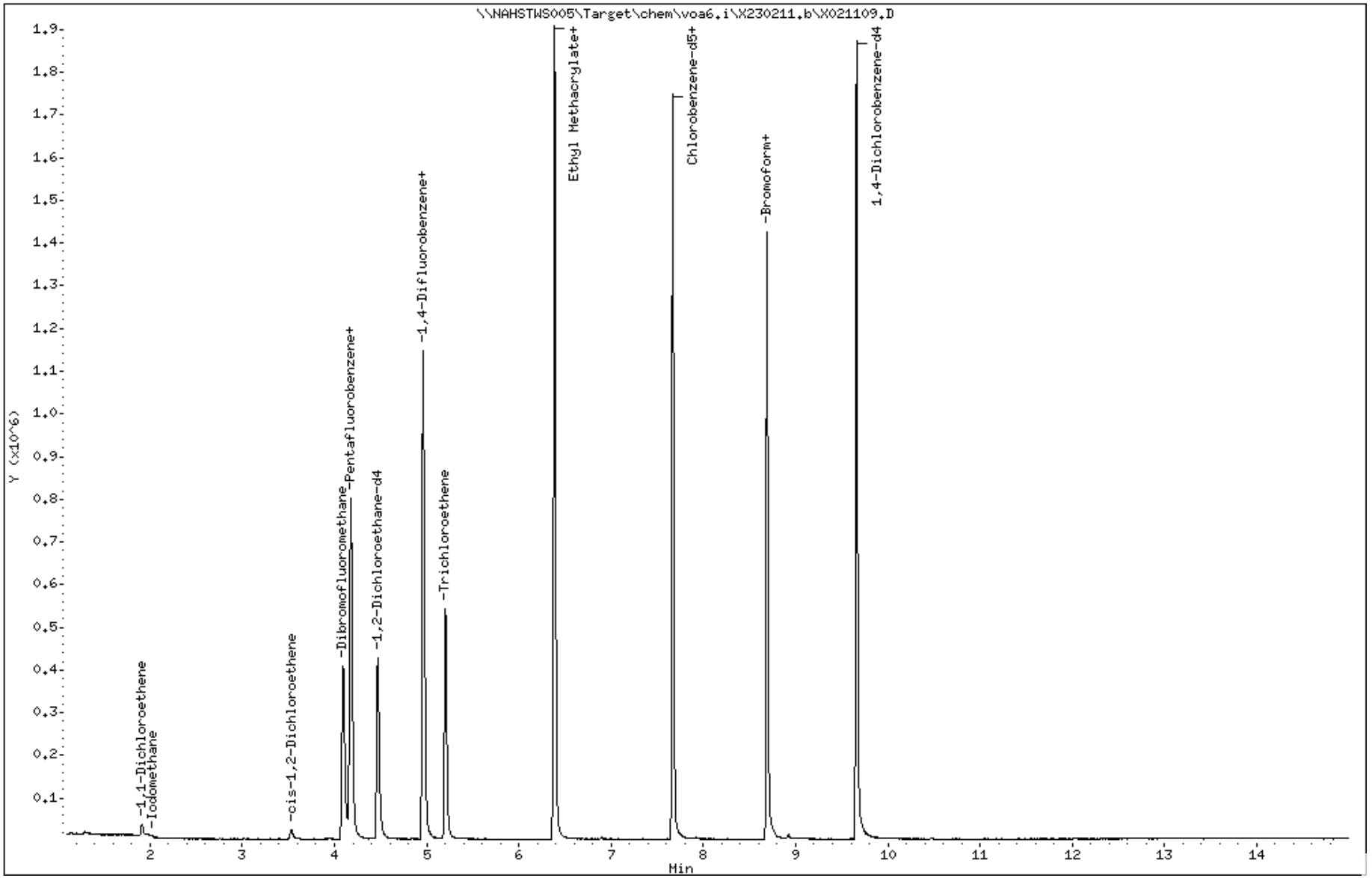
Sample Info: HS23020265-04;HS23020265-04;;;

Purge Volume: 5.0

Operator: PC

Column phase: DB624

Column diameter: 0.18



Data File: \\NAHSTWS005\Target\chem\voa6.i\X230211.b\X021109.D

Date : 11-FEB-2023 14:42

Client ID: HS23020265-04

Instrument: voa6.i

Sample Info: HS23020265-04;HS23020265-04;;;

Purge Volume: 5.0

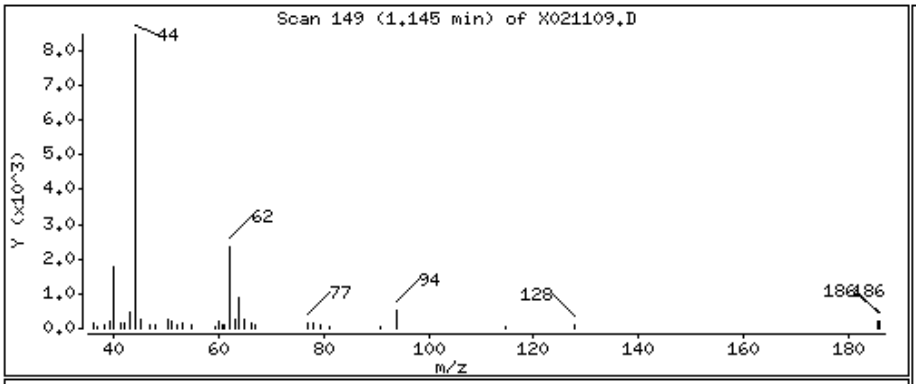
Operator: PC

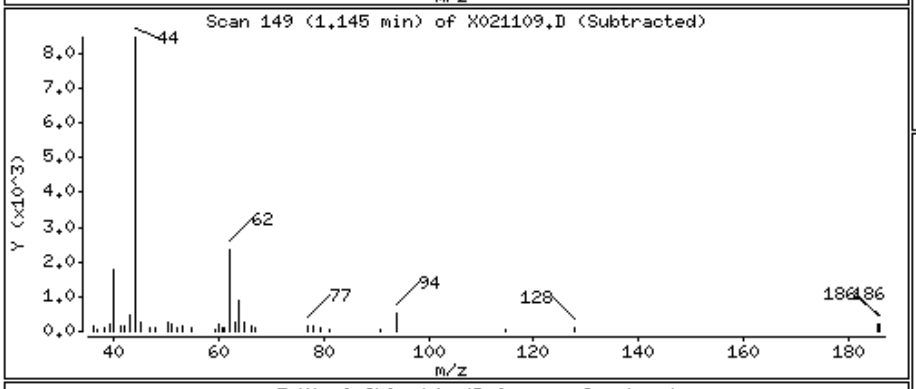
Column phase: DB624

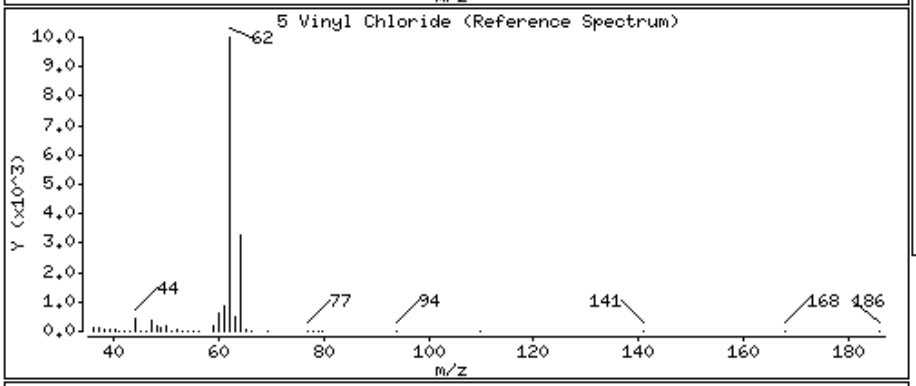
Column diameter: 0.18

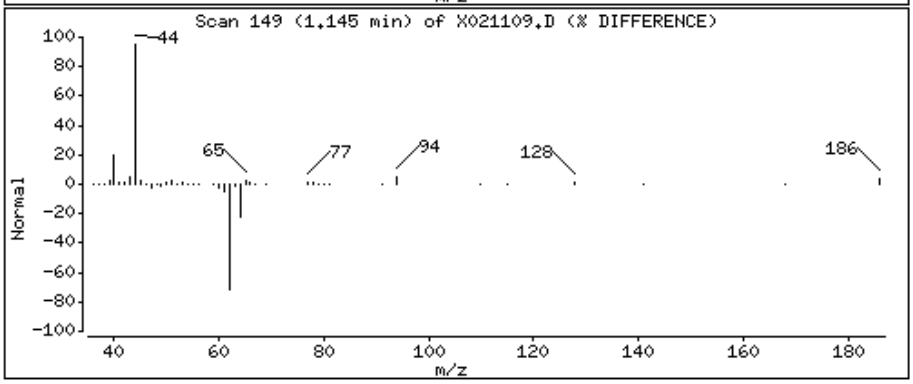
5 Vinyl Chloride

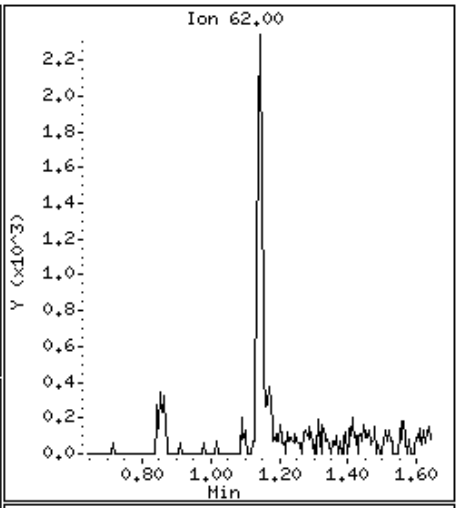
Concentration: 0.43 ug/l

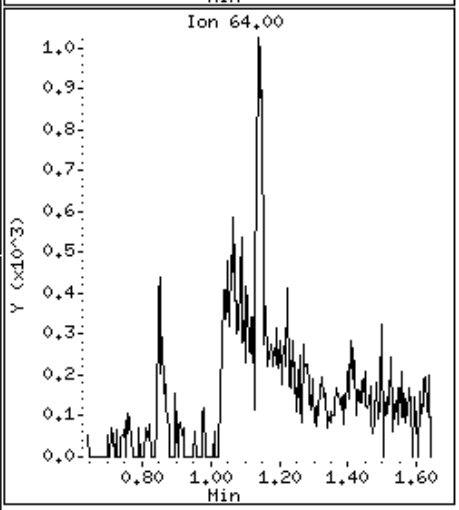


Data File: \\NAHSTWS005\Target\chem\voa6.i\X230211.b\X021109.D

Date : 11-FEB-2023 14:42

Client ID: HS23020265-04

Instrument: voa6.i

Sample Info: HS23020265-04;HS23020265-04;;;

Purge Volume: 5.0

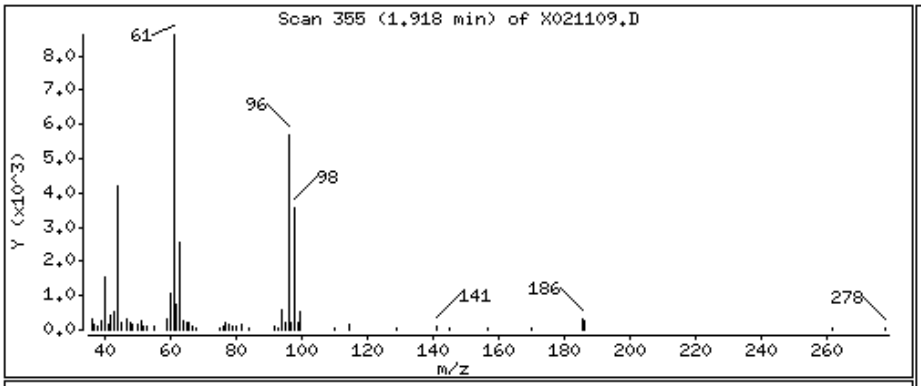
Operator: PC

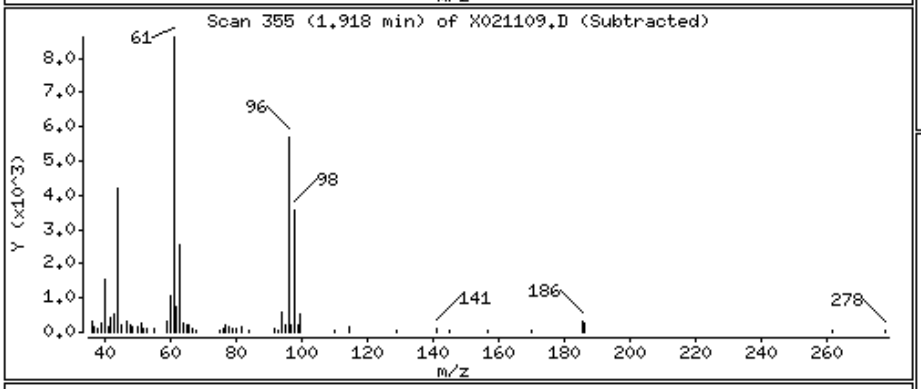
Column phase: DB624

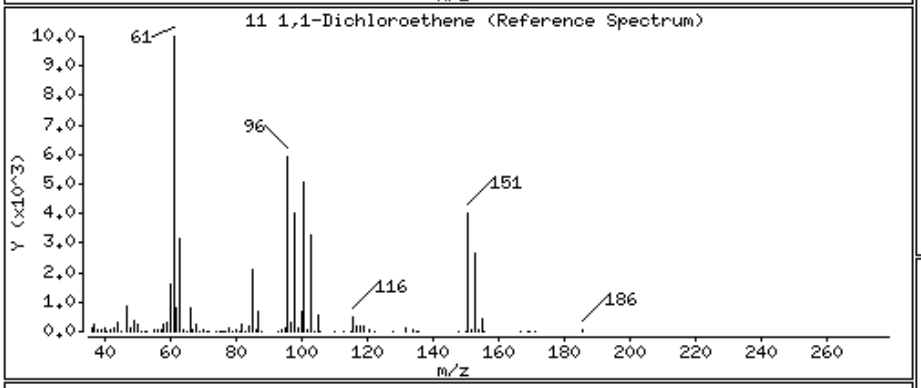
Column diameter: 0.18

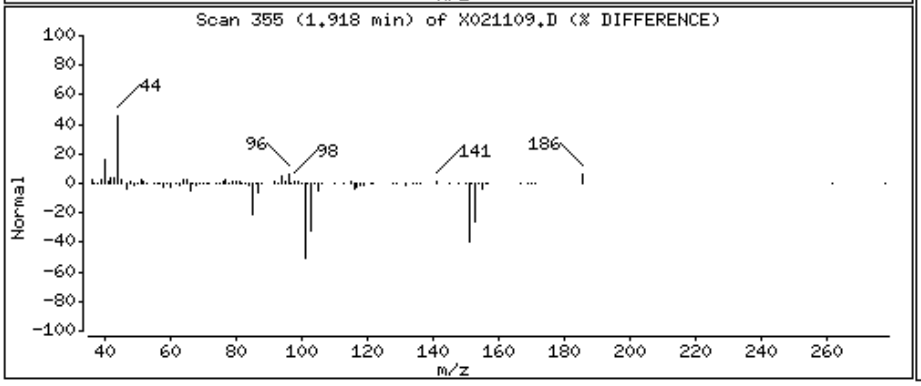
11 1,1-Dichloroethene

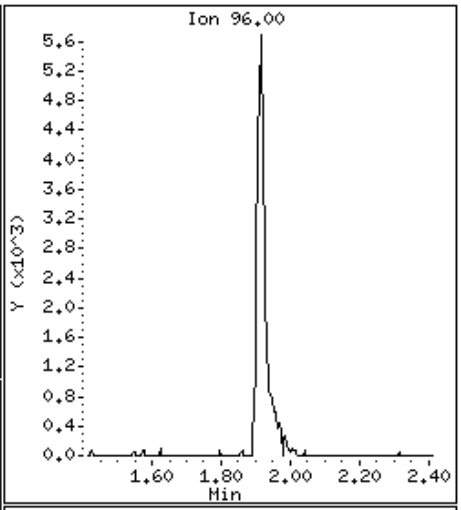
Concentration: 1.92 ug/l

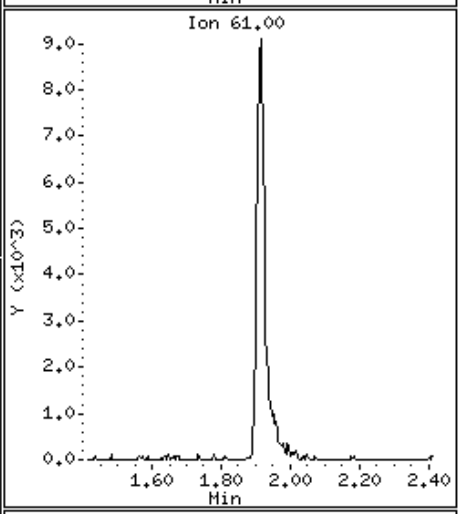


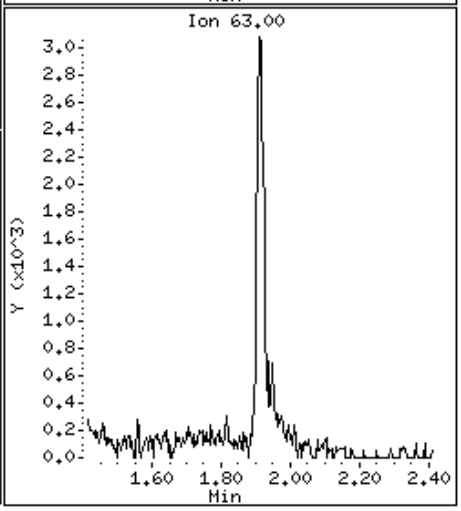



Data File: \\NAHSTWS005\Target\chem\voa6.i\X230211.b\X021109.D 

Date : 11-FEB-2023 14:42

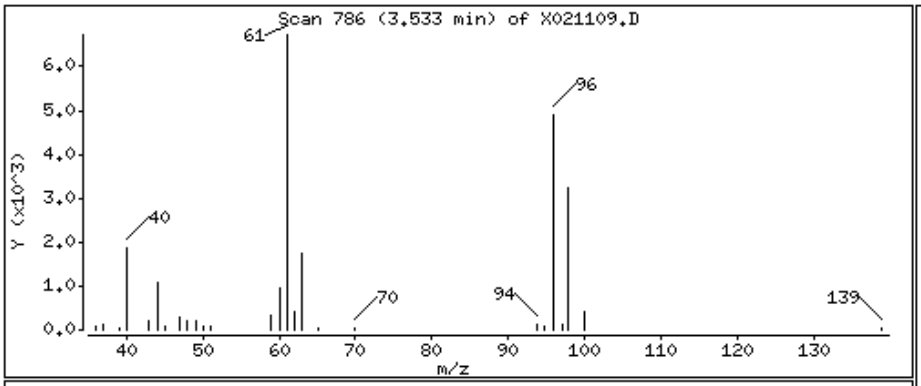
Client ID: HS23020265-04 Instrument: voa6.i

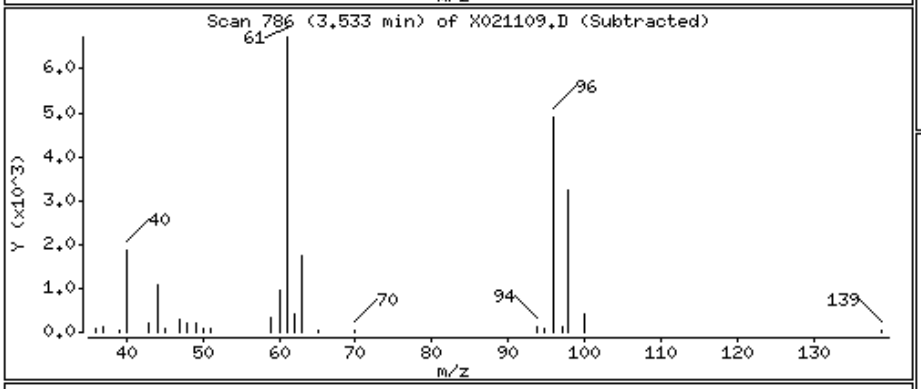
Sample Info: HS23020265-04;HS23020265-04;;;

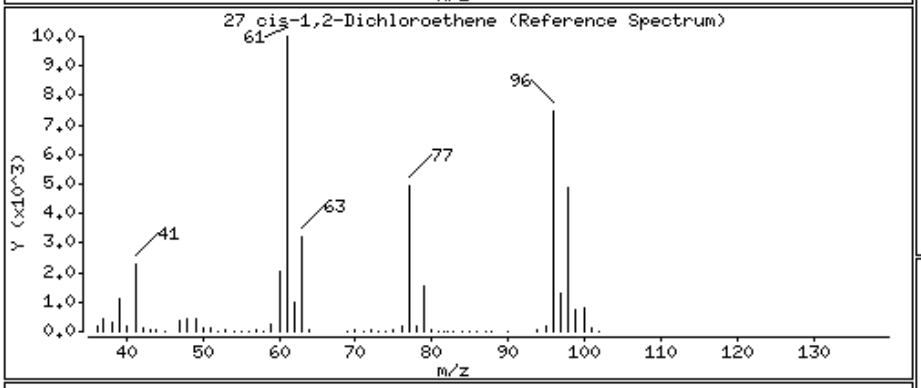
Purge Volume: 5.0 Operator: PC

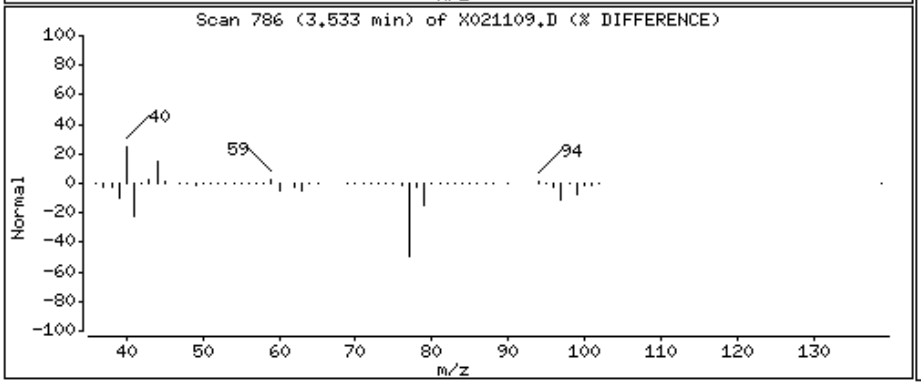
Column phase: DB624 Column diameter: 0.18

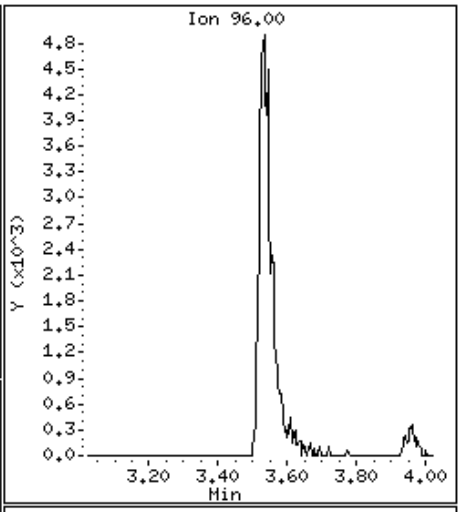
27 cis-1,2-Dichloroethene Concentration: 1.76 ug/l

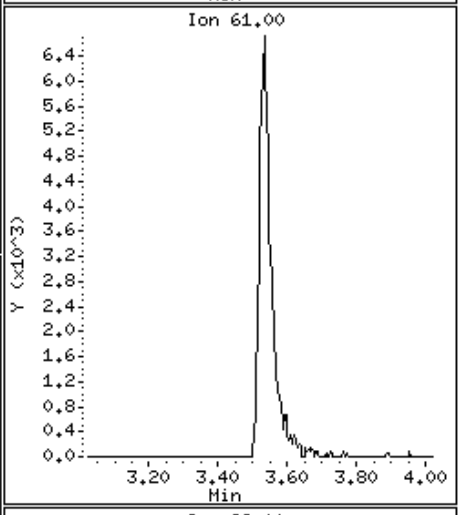


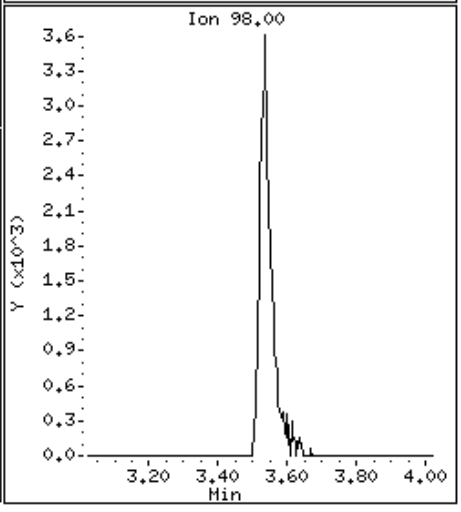



Data File: \\NAHSTWS005\Target\chem\voa6.i\X230211.b\X021109.D Page 5

Date : 11-FEB-2023 14:42

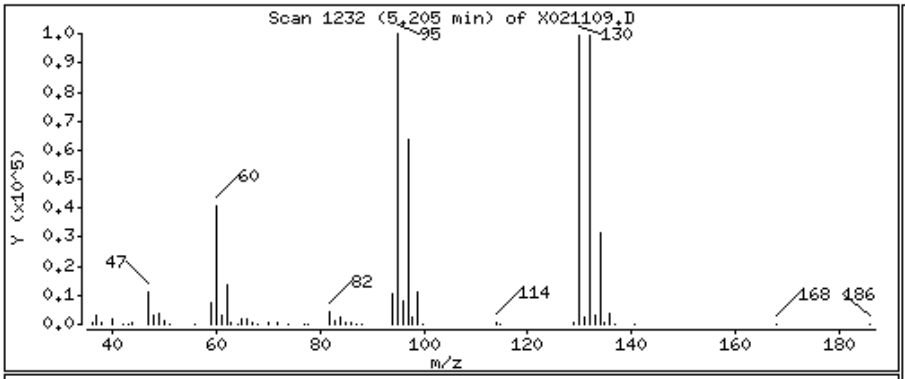
Client ID: HS23020265-04 Instrument: voa6.i

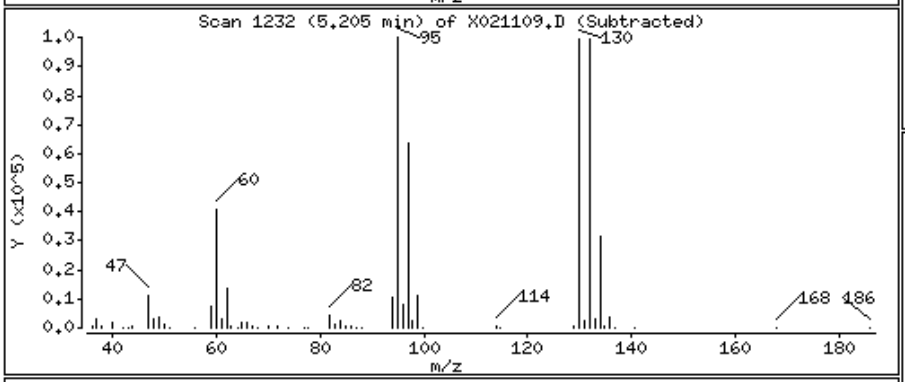
Sample Info: HS23020265-04;HS23020265-04;;;

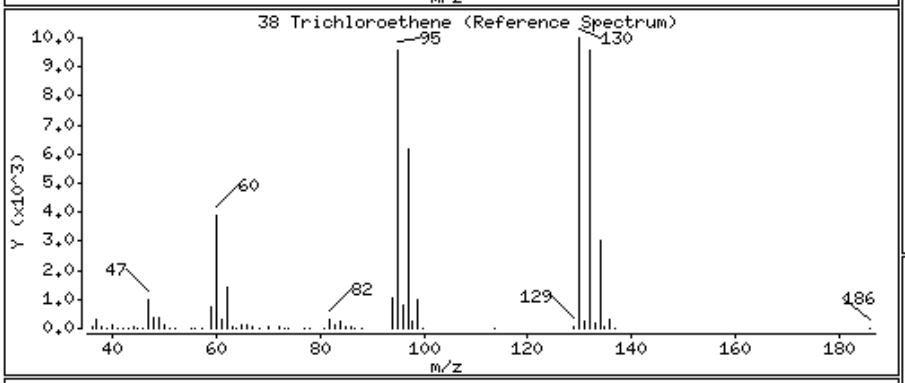
Purge Volume: 5.0 Operator: PC

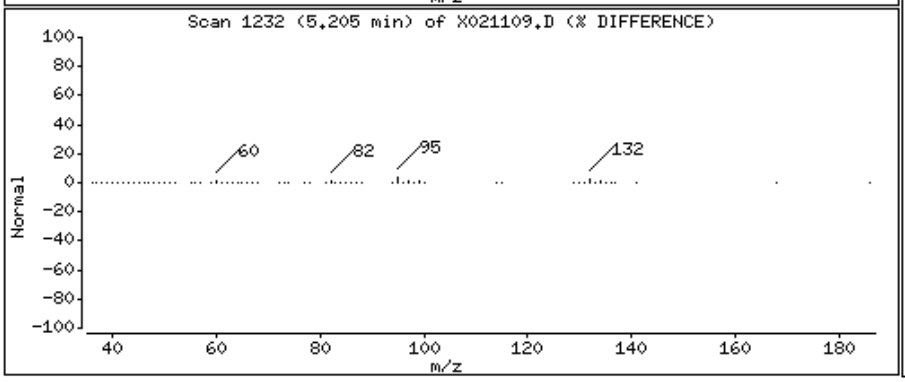
Column phase: DB624 Column diameter: 0.18

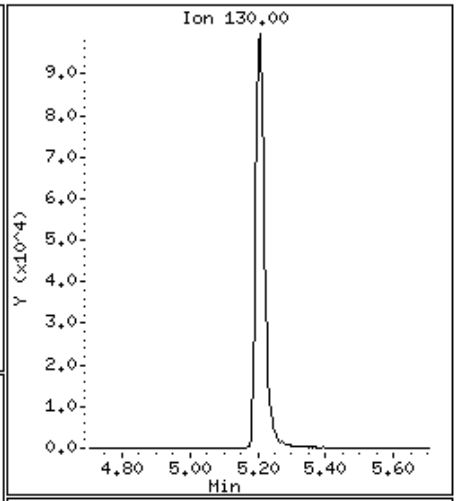
38 Trichloroethene Concentration: 28.67 ug/l

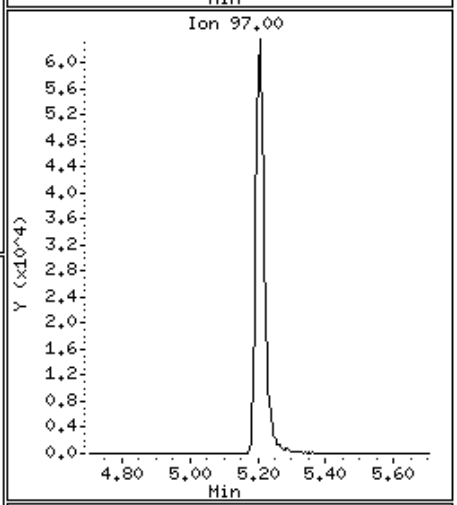


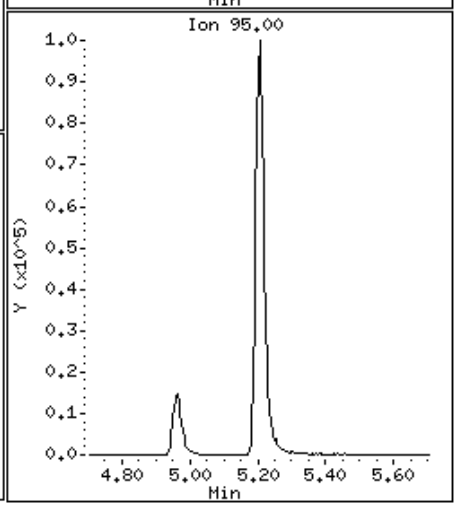



Data File : \\NAHSTWS005\Target\chem\voa6.i\X230211.b\X021109.D
Inj Date  : 11-FEB-2023 14:42
InstruID  : voa6.i
LabSampID : HS23020265-04

NO MANUAL INTEGRATIONS

Data File: \\NAHSTWS005\Target\chem\voa6.i\X230211.b\X021110.D  Page 1
Report Date: 20-Feb-2023 15:09

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X230211.b\X021110.D
Lab Smp Id: HS23020265-01  Client Smp ID: HS23020265-01
Inj Date  : 11-FEB-2023 15:03
Operator  : PC  Inst ID: voa6.i
Smp Info  : HS23020265-01;HS23020265-01;;;
Misc Info : V6;WATER;0;1;
Comment   :
Method    : \\NAHSTWS005\Target\chem\voa6.i\X230211.b\8260W.m
Meth Date : 20-Feb-2023 15:09 voa6.i  Quant Type: ISTD
Cal Date  : 16-DEC-2022 14:04  Cal File: X121608.D
Als bottle: 10
Dil Factor: 1.00000
Integrator: HP RTE  Compound Sublist: 8260-dryclean.sub
Target Version:  4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

| Name | Value | Description |
|---|---|---|
| DF | 1.000 | Dilution Factor |
| Uf | 5.000 | ng unit correction factor |
| Vo | 5.000 | sample purged |
| Cpnd Variable | | Local Compound Variable |

| Compounds | QUANT SIG MASS | RT | EXP RT | REL RT | RESPONSE | CONCENTRATIONS ON-COLUMN ( ug/l) | FINAL ( ug/l) |
|---|---|---|---|---|---|---|---|
| * 1 Pentafluorobenzene | 168 | 4.177 | 4.178 | (1.000) | 643792 | 50.0000 | |
| $ 30 Dibromofluoromethane | 113 | 4.095 | 4.095 | (0.980) | 289584 | 46.8351 | 46.83 |
| $ 35 1,2-Dichloroethane-d4 | 65 | 4.470 | 4.466 | (1.070) | 324960 | 49.8060 | 49.80 |
| * 36 1,4-Difluorobenzene | 114 | 4.961 | 4.961 | (1.000) | 942280 | 50.0000 | |
| * 47 Chlorobenzene-d5 | 117 | 7.667 | 7.668 | (1.000) | 848445 | 50.0000 | |
| $ 48 Toluene-d8 | 98 | 6.385 | 6.386 | (0.833) | 1115373 | 53.1999 | 53.19 |
| $ 69 4-Bromofluorobenzene | 95 | 8.687 | 8.687 | (1.133) | 425966 | 54.3499 | 54.34 |
| * 70 1,4-Dichlorobenzene-d4 | 152 | 9.662 | 9.662 | (1.000) | 453142 | 50.0000 | |
| 5 Vinyl Chloride | 62 | 1.141 | 1.141 | (0.273) | 45053 | 8.01101 | 8.01 |
| 11 1,1-Dichloroethene | 96 | 1.913 | 1.914 | (0.458) | 5114 | 1.04664 | 1.04(a) |
| 20 trans-1,2-Dichloroethene | 96 | 2.532 | 2.525 | (0.606) | 27886 | 5.09946 | 5.09 |
| 27 cis-1,2-Dichloroethene | 96 | 3.521 | 3.522 | (0.843) | 1380385 | 207.421 | 207.42(A) |
| 38 Trichloroethene | 130 | 5.205 | 5.205 | (1.049) | 392408 | 61.4854 | 61.48 |

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).
A - Target compound detected but, quantitated amount

exceeded maximum amount.

01255502

Data File: \\NAHSTWS005\Target\chem\voa6.i\X230211.b\X021110.D



Date : 11-FEB-2023 15:03

Client ID: HS23020265-01

Instrument: voa6.i

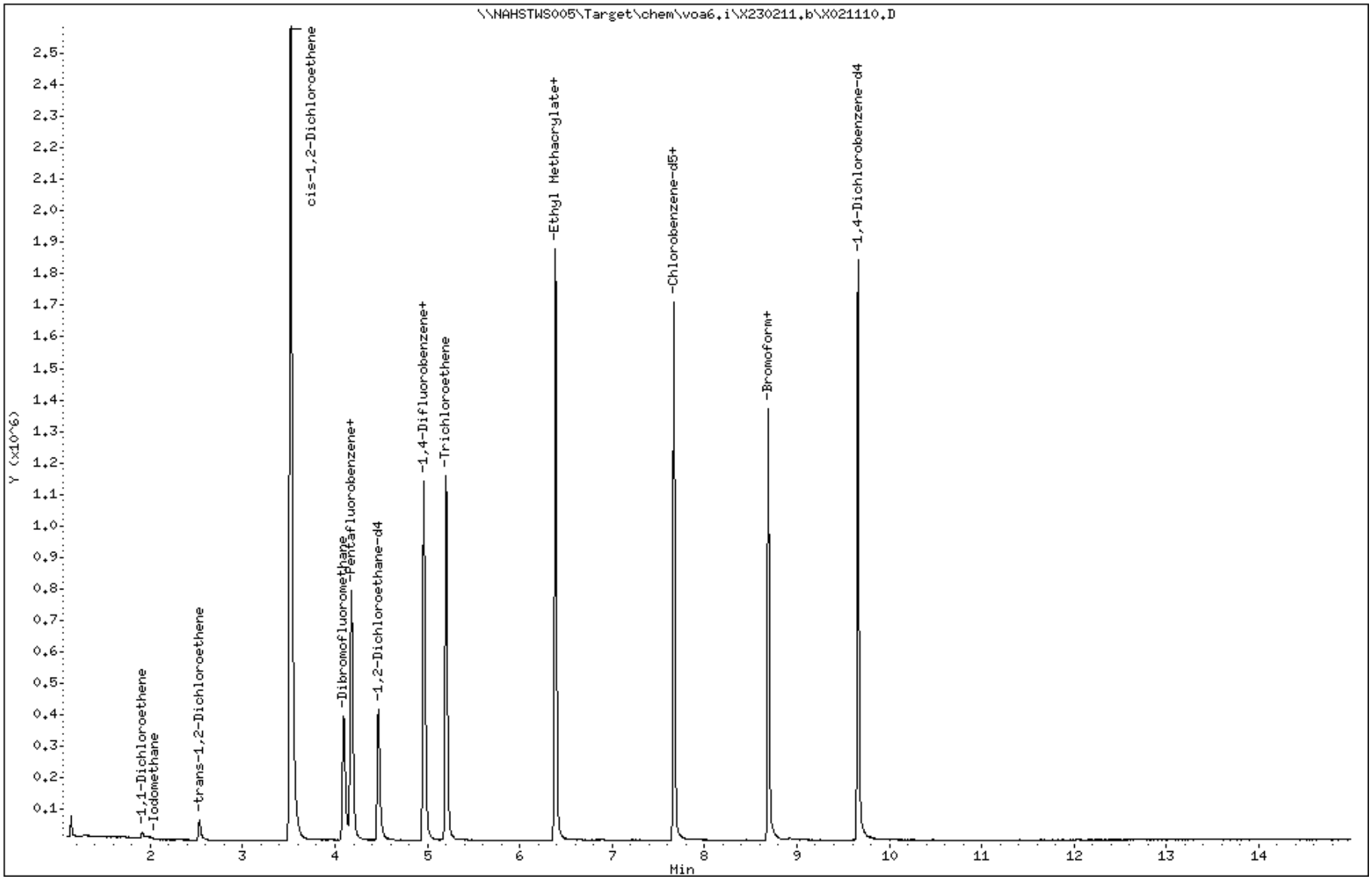
Sample Info: HS23020265-01;HS23020265-01;;;

Purge Volume: 5.0

Operator: PC

Column phase: DB624

Column diameter: 0.18



Data File: \\NAHSTWS005\Target\chem\voa6.i\X230211.b\X021110.D

Date : 11-FEB-2023 15:03

Client ID: HS23020265-01

Instrument: voa6.i

Sample Info: HS23020265-01;HS23020265-01;;;

Purge Volume: 5.0

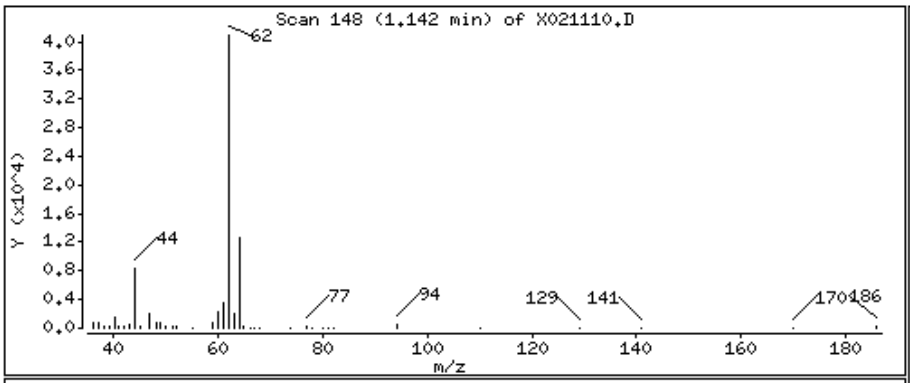
Operator: PC

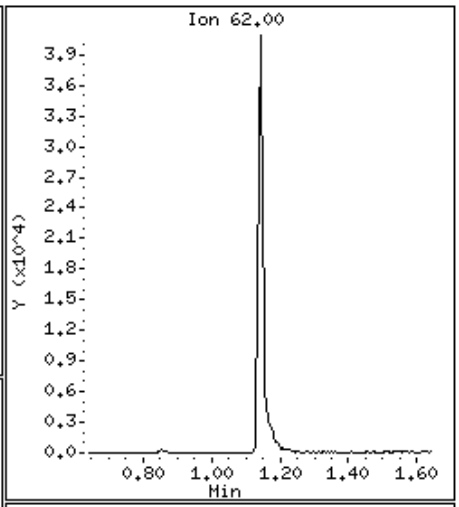
Column phase: DB624

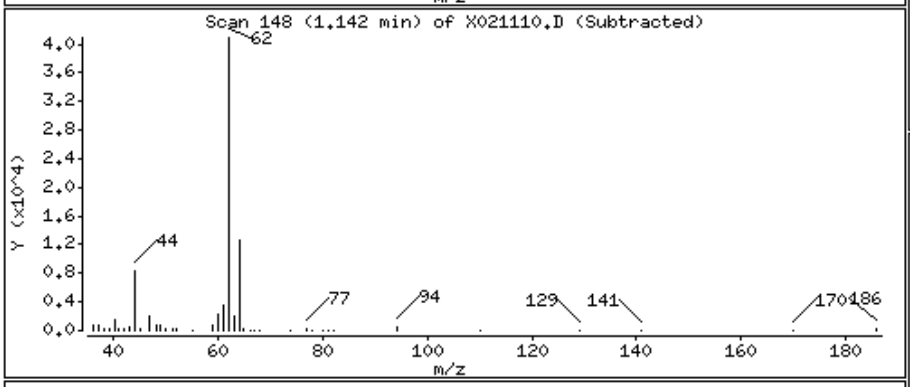
Column diameter: 0.18

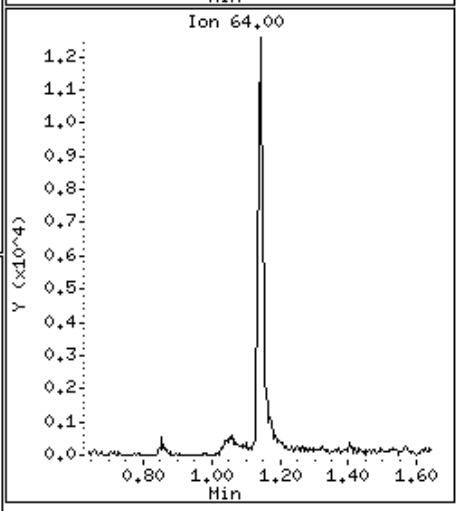
5 Vinyl Chloride

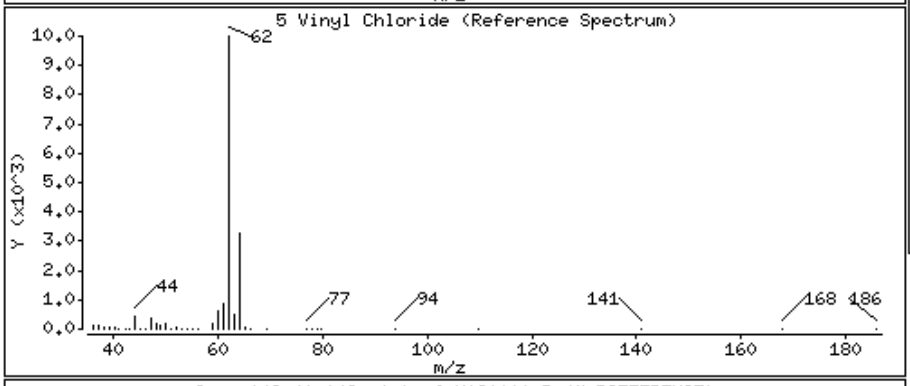
Concentration: 8.01 ug/l

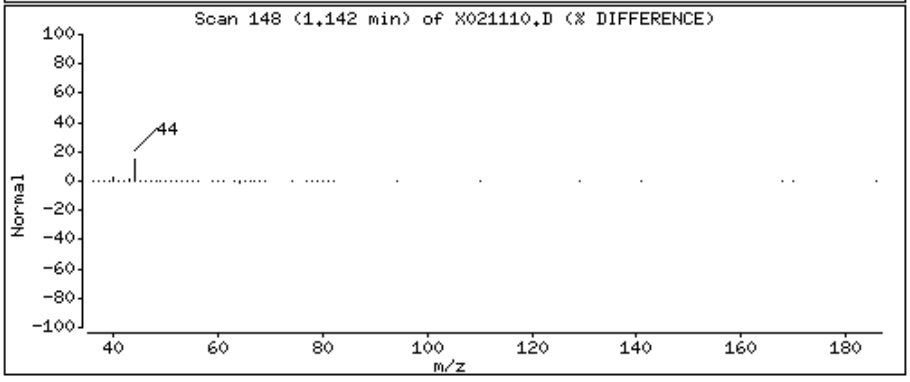


Data File: \\NAHSTWS005\Target\chem\voa6.i\X230211.b\X021110.D

Date : 11-FEB-2023 15:03

Client ID: HS23020265-01

Instrument: voa6.i

Sample Info: HS23020265-01;HS23020265-01;;;

Purge Volume: 5.0

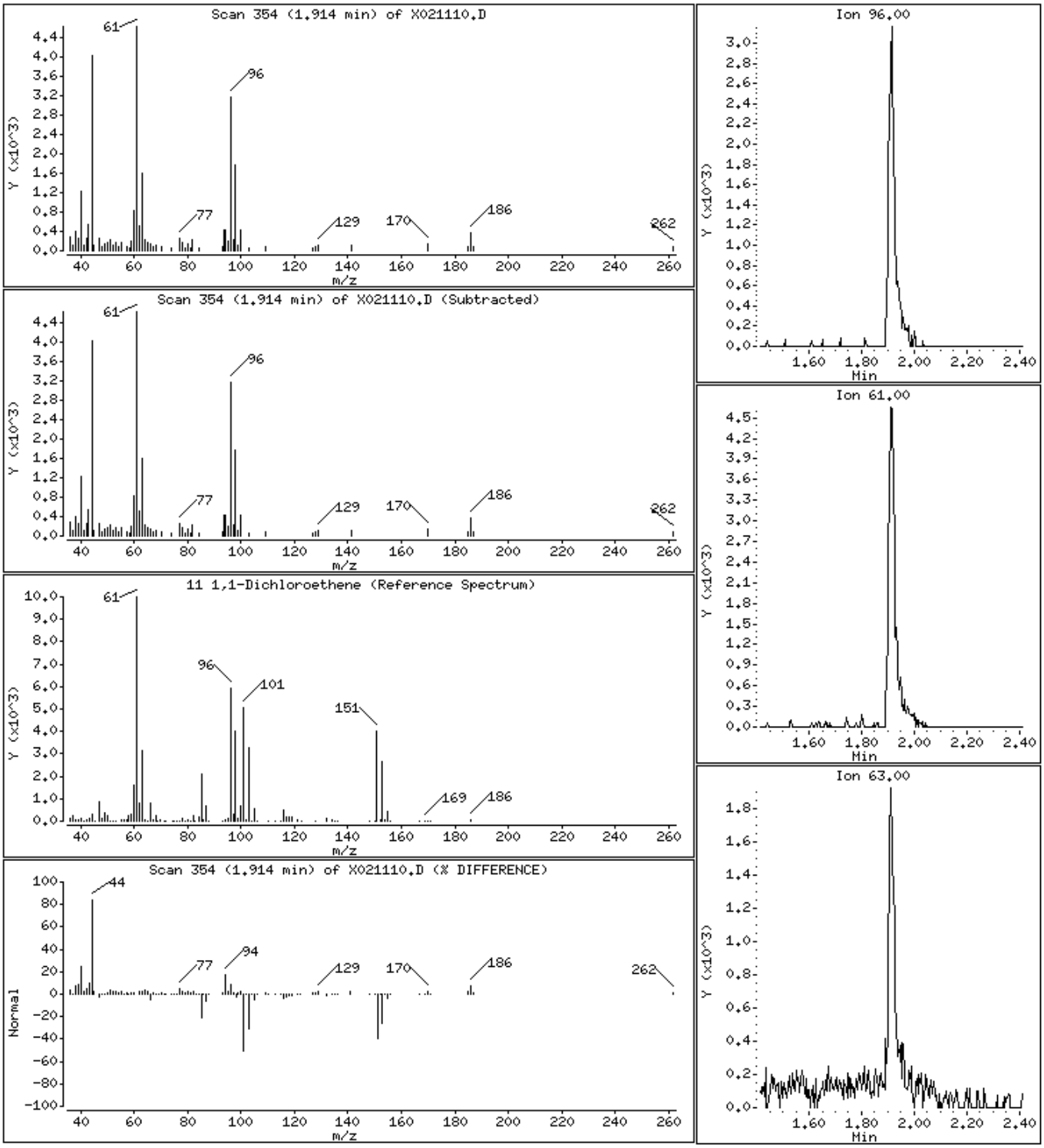
Operator: PC

Column phase: DB624

Column diameter: 0.18

11 1,1-Dichloroethene

Concentration: 1.04 ug/l



Data File: \\NAHSTWS005\Target\chem\voa6.i\X230211.b\X021110.D Page 4

Date : 11-FEB-2023 15:03

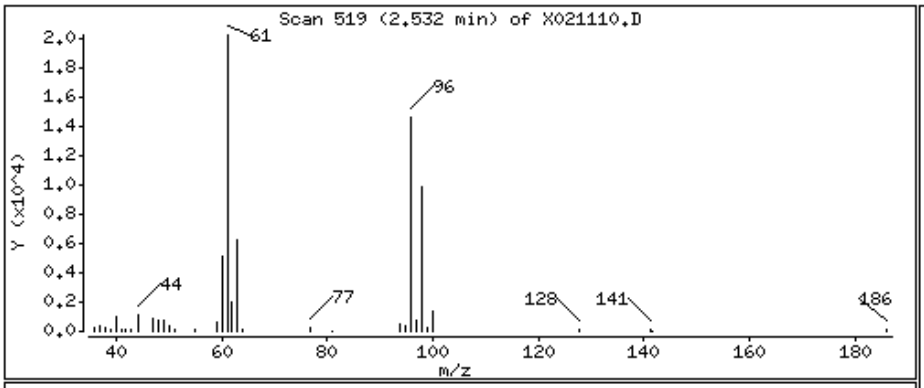
Client ID: HS23020265-01 Instrument: voa6.i

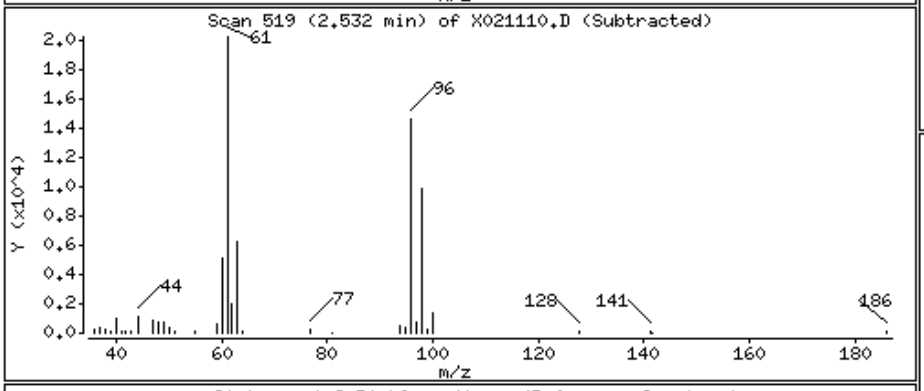
Sample Info: HS23020265-01;HS23020265-01;;;

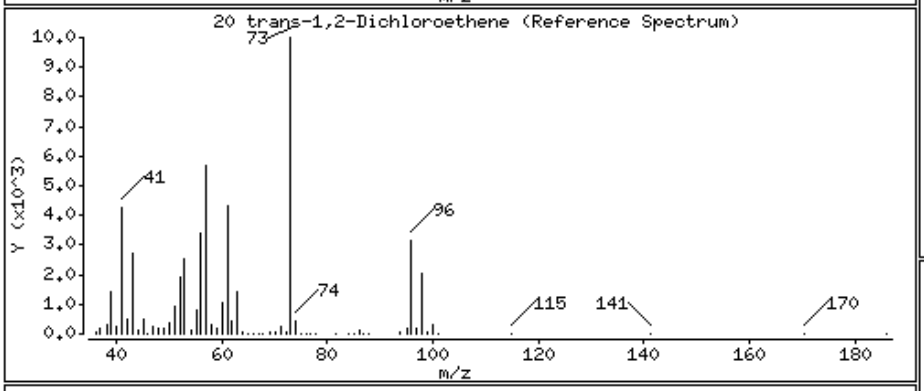
Purge Volume: 5.0 Operator: PC

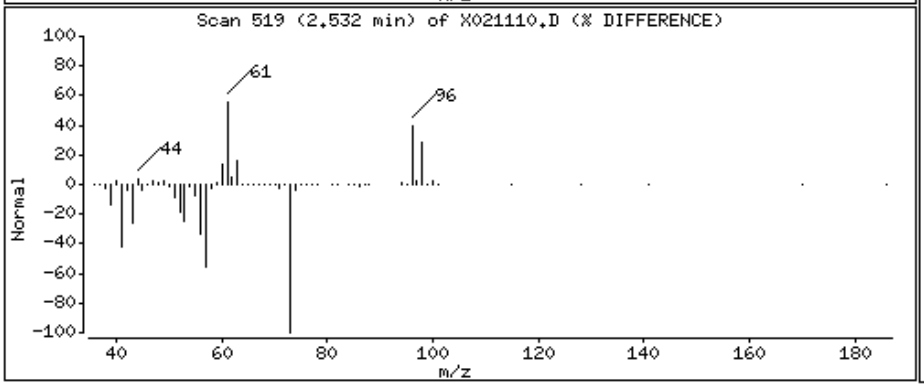
Column phase: DB624 Column diameter: 0.18

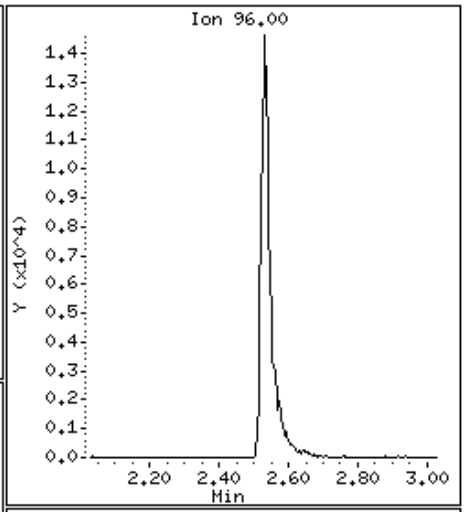
20 trans-1,2-Dichloroethene Concentration: 5.09 ug/l

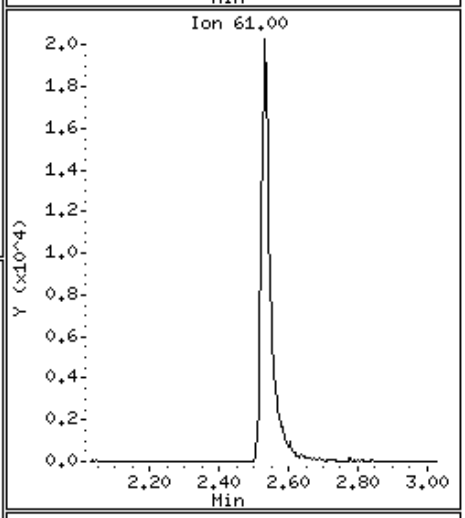


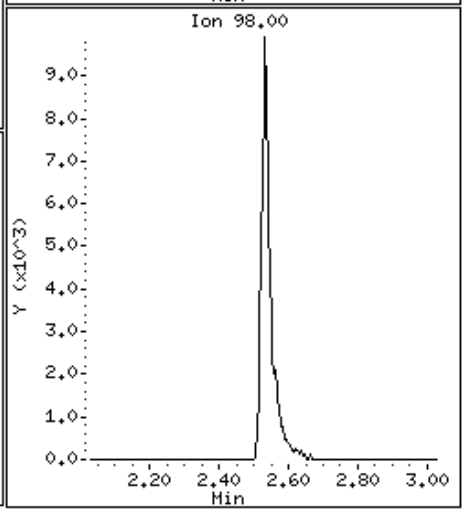



Data File: \\NAHSTWS005\Target\chem\voa6.i\X230211.b\X021110.D Page 5

Date : 11-FEB-2023 15:03

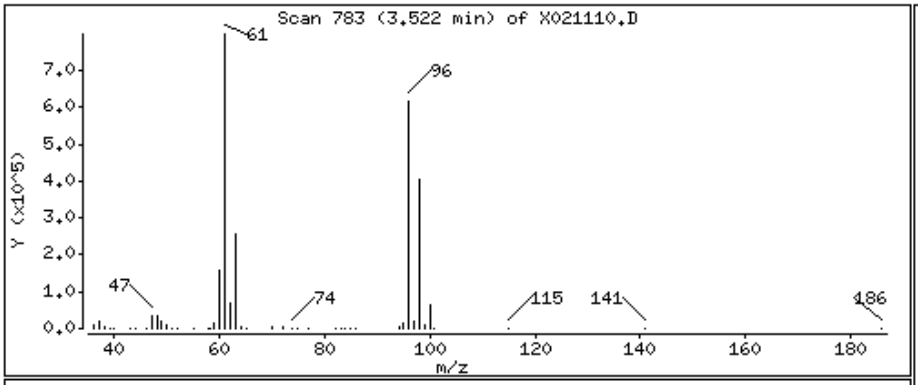
Client ID: HS23020265-01 Instrument: voa6.i

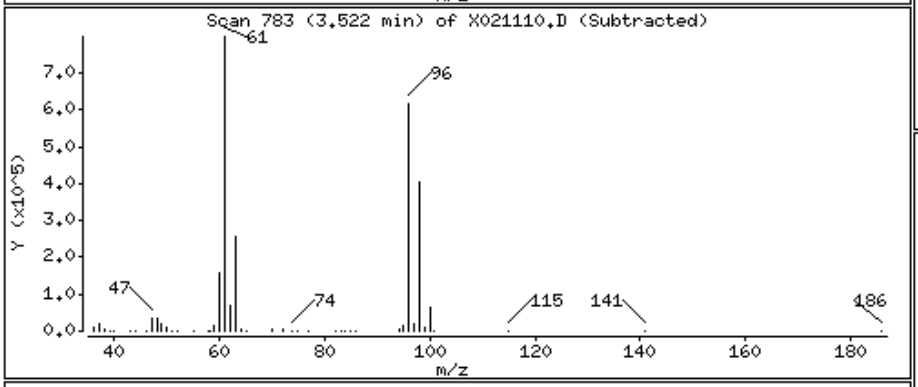
Sample Info: HS23020265-01;HS23020265-01;;;

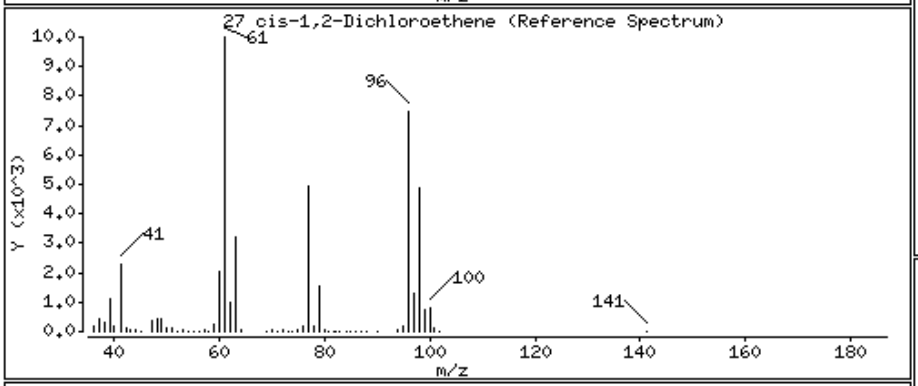
Purge Volume: 5.0 Operator: PC

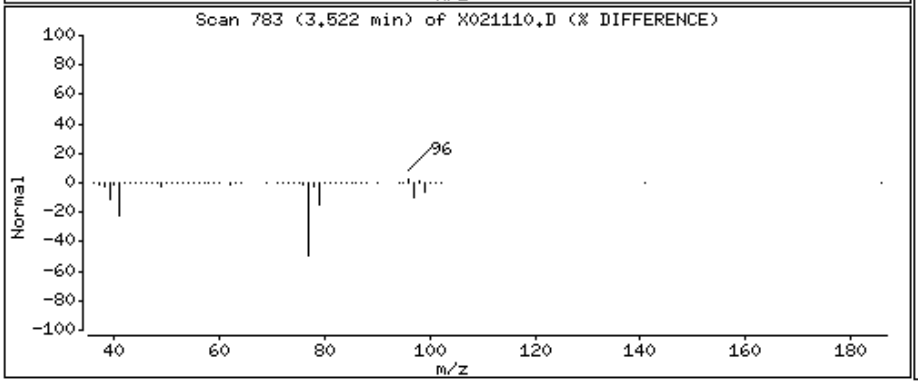
Column phase: DB624 Column diameter: 0.18

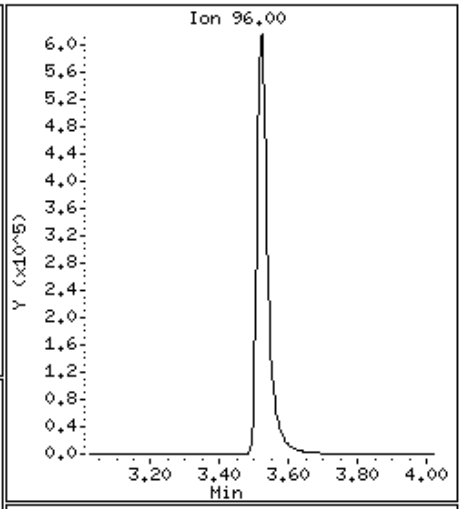
27 cis-1,2-Dichloroethene Concentration: 207.42 ug/l

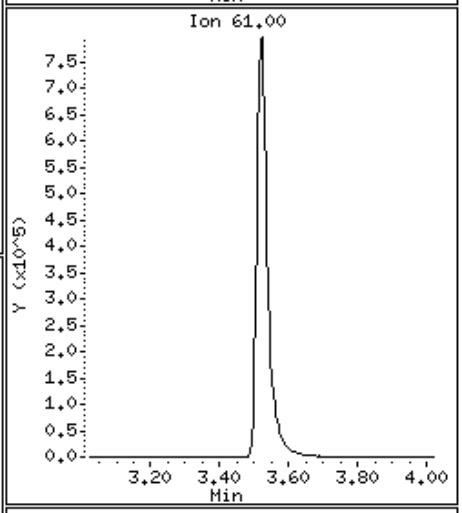


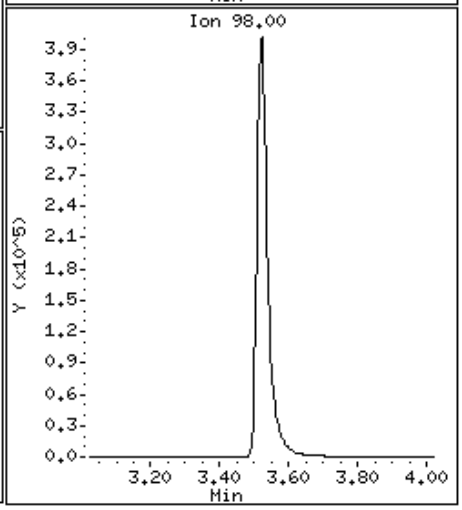



Data File: \\NAHSTWS005\Target\chem\voa6.i\X230211.b\X021110.D Page 6

Date : 11-FEB-2023 15:03

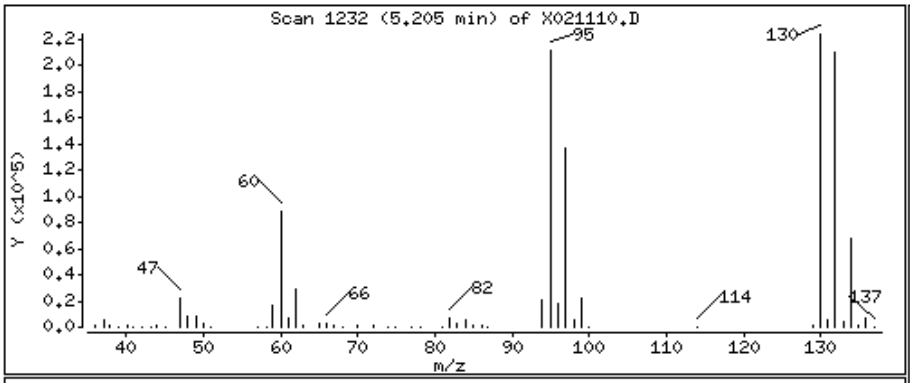
Client ID: HS23020265-01 Instrument: voa6.i

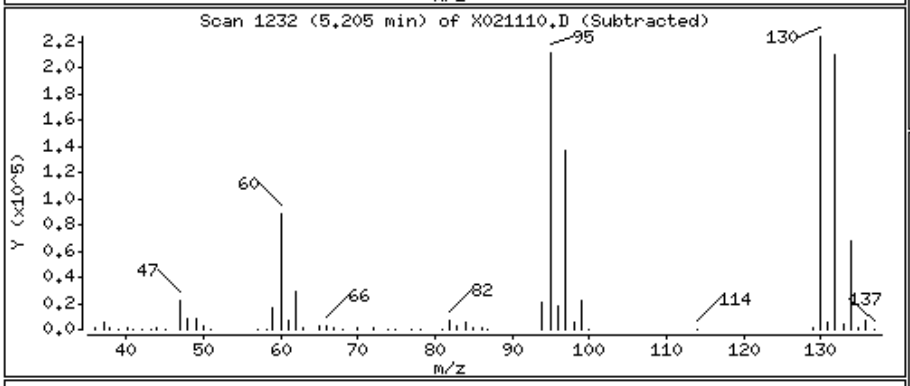
Sample Info: HS23020265-01;HS23020265-01;;;

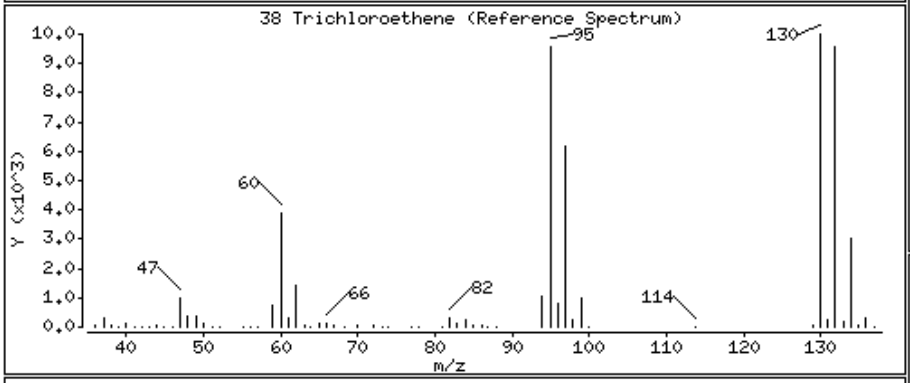
Purge Volume: 5.0 Operator: PC

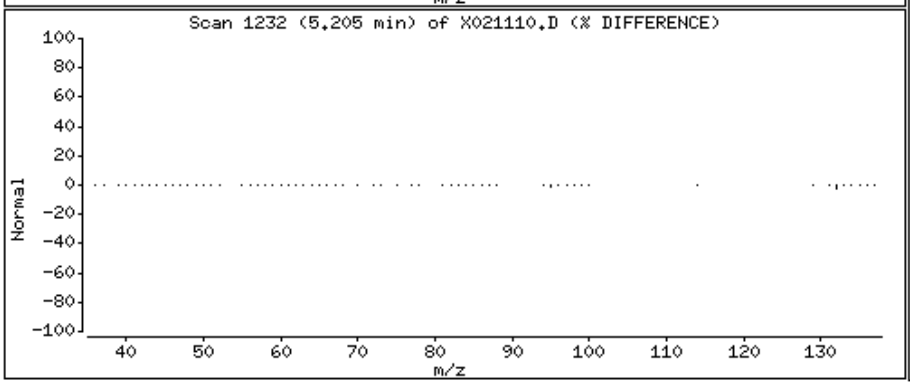
Column phase: DB624 Column diameter: 0.18

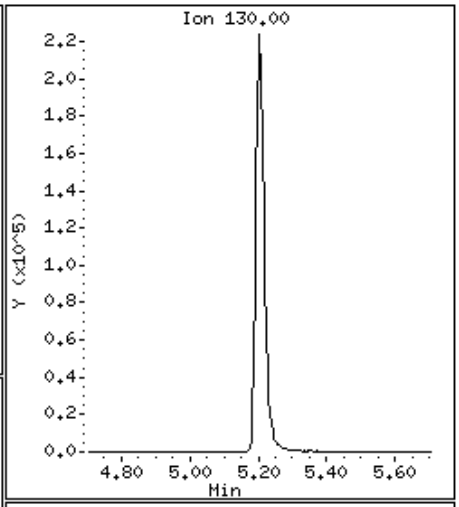
38 Trichloroethene Concentration: 61.48 ug/l

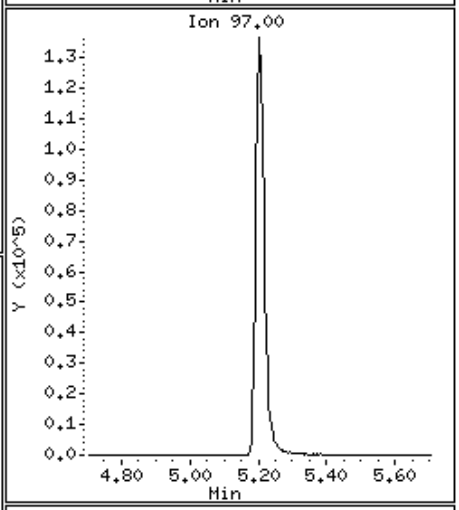


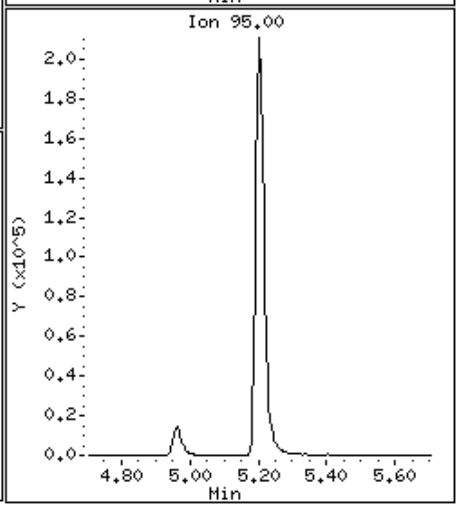



Data File : \\NAHSTWS005\Target\chem\voa6.i\X230211.b\X021110.D
Inj Date  : 11-FEB-2023 15:03
InstruID  : voa6.i
LabSampID : HS23020265-01

NO MANUAL INTEGRATIONS

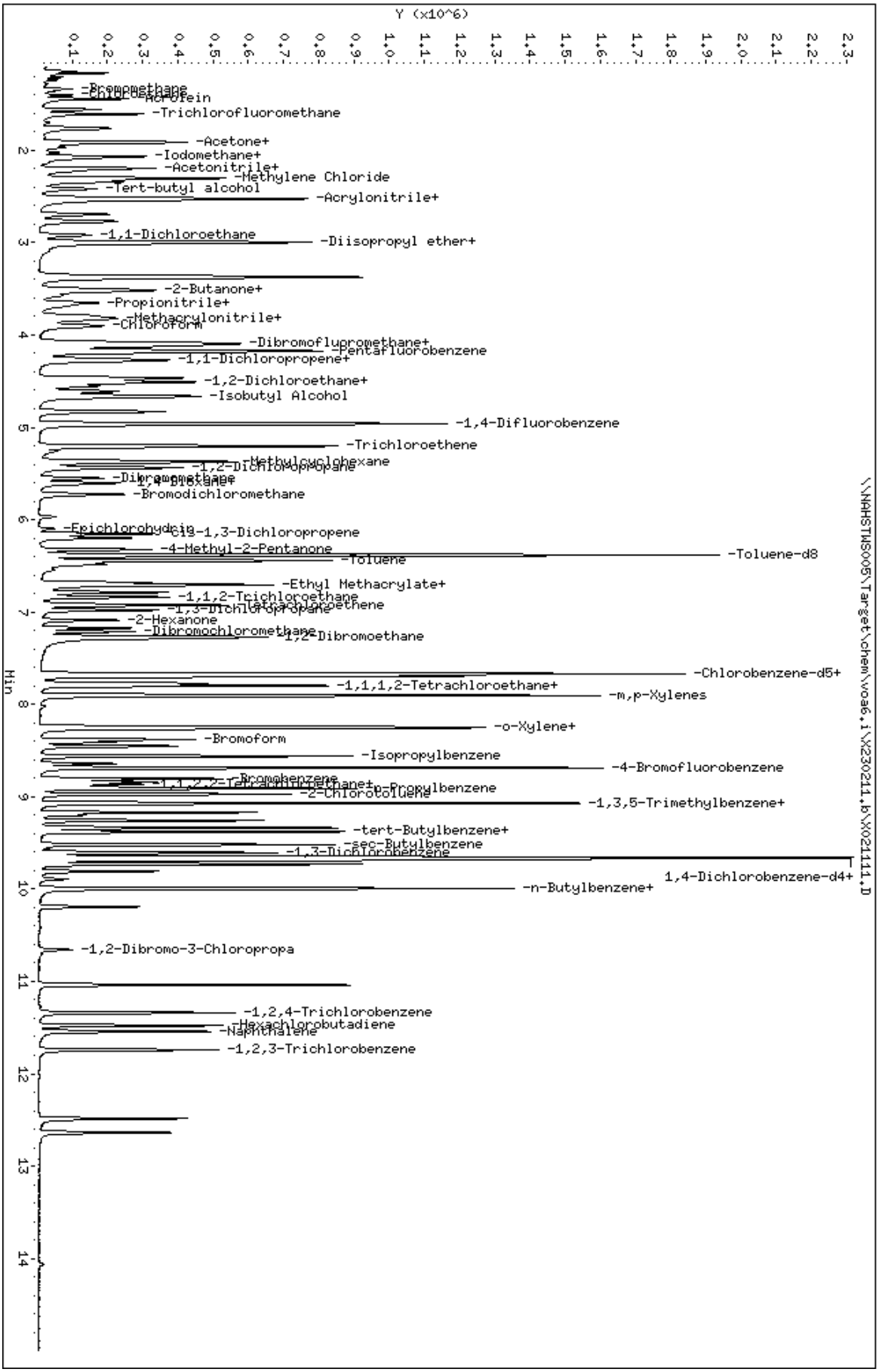
ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X230211.b\X021111.D
Lab Smp Id: HS23020265-04MS  Client Smp ID: HS23020265-04MS
Inj Date  : 11-FEB-2023 15:24
Operator  : PC  Inst ID: voa6.i
Smp Info  : HS23020265-04MS;HS23020265-04MS;3;;MS
Misc Info : V6;WATER;0;1;
Comment   :
Method    : \\NAHSTWS005\Target\chem\voa6.i\X230211.b\8260W.m
Meth Date : 28-Feb-2023 10:34 voa6.i  Quant Type: ISTD
Cal Date  : 16-DEC-2022 14:04  Cal File: X121608.D
Als bottle: 11  QC Sample: MS
Dil Factor: 1.00000
Integrator: HP RTE  Compound Sublist: 8260-dryclean.sub
Target Version:  4.14
Processing Host: NAHSTW7017

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

| Name | Value | Description |
|---|---|---|
| DF | 1.000 | Dilution Factor |
| Uf | 5.000 | ng unit correction factor |
| Vo | 5.000 | sample purged |
| Cpnd Variable | | Local Compound Variable |

| Compounds | QUANT SIG MASS | RT | EXP RT | REL RT | RESPONSE | CONCENTRATIONS ON-COLUMN ( ug/l) | FINAL ( ug/l) |
|---|---|---|---|---|---|---|---|
| * 1 Pentafluorobenzene | 168 | 4.178 | 4.178 | (1.000) | 645464 | 50.0000 | |
| $ 30 Dibromofluoromethane | 113 | 4.091 | 4.095 | (0.979) | 285868 | 46.1117 | 46.11 |
| $ 35 1,2-Dichloroethane-d4 | 65 | 4.466 | 4.466 | (1.069) | 329251 | 50.3301 | 50.33 |
| * 36 1,4-Difluorobenzene | 114 | 4.965 | 4.961 | (1.000) | 948105 | 50.0000 | |
| * 47 Chlorobenzene-d5 | 117 | 7.668 | 7.668 | (1.000) | 842519 | 50.0000 | |
| $ 48 Toluene-d8 | 98 | 6.382 | 6.386 | (0.832) | 1117176 | 53.6607 | 53.66 |
| $ 69 4-Bromofluorobenzene | 95 | 8.687 | 8.687 | (1.133) | 422083 | 54.2334 | 54.23 |
| * 70 1,4-Dichlorobenzene-d4 | 152 | 9.662 | 9.662 | (1.000) | 452635 | 50.0000 | |
| 5 Vinyl Chloride | 62 | 1.141 | 1.141 | (0.273) | 65020 | 11.5315 | 11.53 |
| 11 1,1-Dichloroethene | 96 | 1.913 | 1.914 | (0.458) | 81497 | 16.6362 | 16.63 |
| 20 trans-1,2-Dichloroethene | 96 | 2.528 | 2.525 | (0.605) | 92528 | 16.8766 | 16.87 |
| 27 cis-1,2-Dichloroethene | 96 | 3.522 | 3.522 | (0.843) | 115937 | 17.3760 | 17.37 |
| 38 Trichloroethene | 130 | 5.205 | 5.205 | (1.048) | 287958 | 44.8422 | 44.84 |
| 56 Tetrachloroethene | 164 | 6.925 | 6.925 | (0.903) | 98219 | 20.3847 | 20.38 |




Data File: \\NAHSTWS005\Target\chem\voa6.i\X230211.b\X021111.D
Date : 11-FEB-2023 15:24
Client ID: HS23020265-04HS
Sample Info: HS23020265-04HS;HS23020265-04HS;3;;HS
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File : \\NAHSTWS005\Target\chem\voa6.i\X230211.b\X021111.D
Inj Date  : 11-FEB-2023 15:24
InstruID  : voa6.i
LabSampID : HS23020265-04MS

NO MANUAL INTEGRATIONS

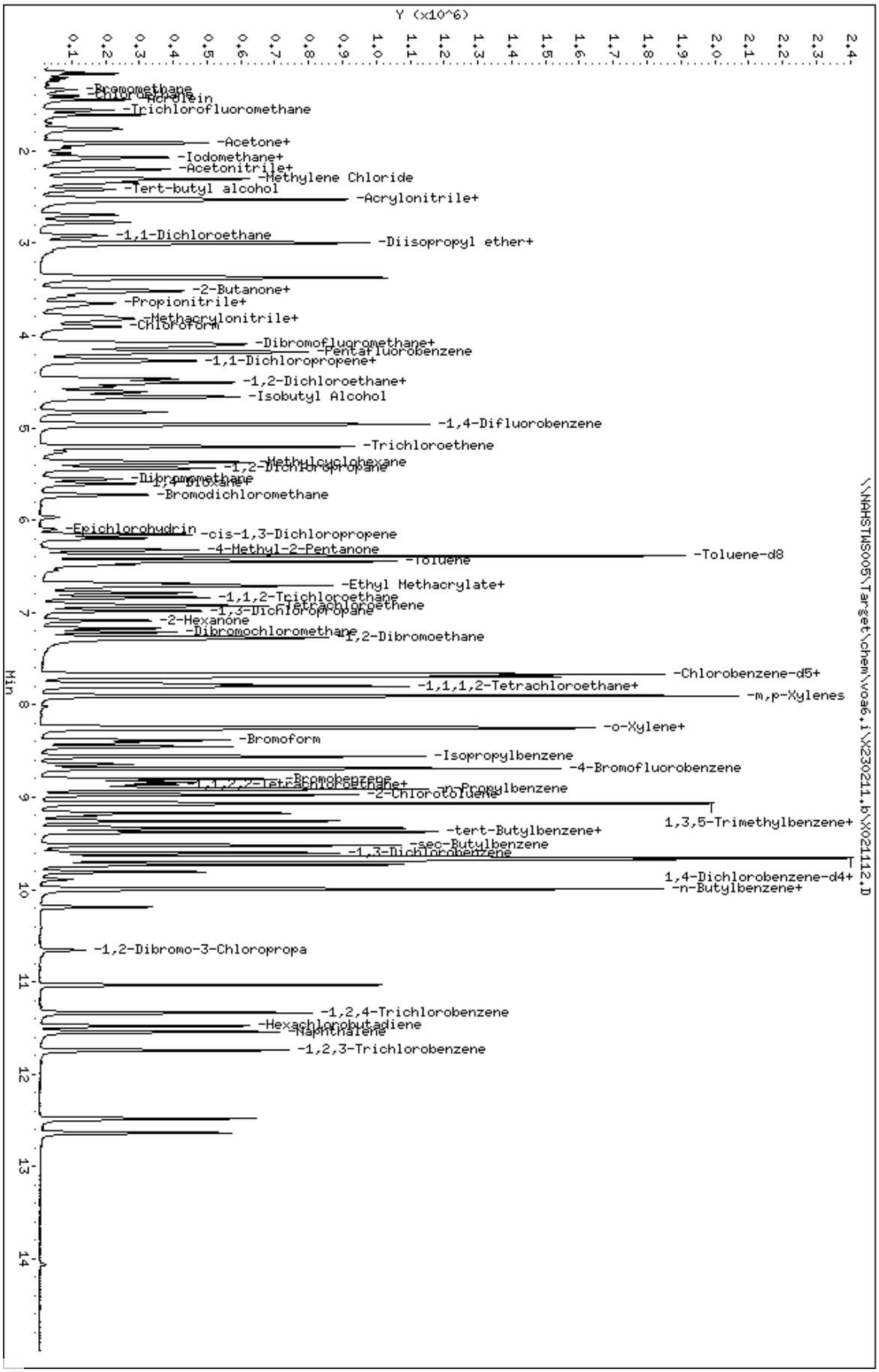
ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X230211.b\X021112.D
Lab Smp Id: HS23020265-04MSD Client Smp ID: HS23020265-04MSD
Inj Date : 11-FEB-2023 15:45
Operator : PC Inst ID: voa6.i
Smp Info : HS23020265-04MSD;HS23020265-04MSD;3;;MSD
Misc Info : V6;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X230211.b\8260W.m
Meth Date : 28-Feb-2023 10:34 voa6.i Quant Type: ISTD
Cal Date : 16-DEC-2022 14:04 Cal File: X121608.D
Als bottle: 11 QC Sample: MSD
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260-dryclean.sub
Target Version: 4.14
Processing Host: NAHSTW7017

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

| Name | Value | Description |
|---|---|---|
| DF | 1.000 | Dilution Factor |
| Uf | 5.000 | ng unit correction factor |
| Vo | 5.000 | sample purged |
| Cpnd Variable | | Local Compound Variable |

| Compounds | QUANT SIG MASS | RT | EXP RT | REL RT | RESPONSE | CONCENTRATIONS ON-COLUMN ( ug/l) | FINAL ( ug/l) |
|---|---|---|---|---|---|---|---|
| * 1 Pentafluorobenzene | 168 | 4.174 | 4.178 | (1.000) | 633006 | 50.0000 | |
| $ 30 Dibromofluoromethane | 113 | 4.095 | 4.095 | (0.981) | 278467 | 45.8008 | 45.80 |
| $ 35 1,2-Dichloroethane-d4 | 65 | 4.470 | 4.466 | (1.071) | 325228 | 50.6916 | 50.69 |
| * 36 1,4-Difluorobenzene | 114 | 4.961 | 4.961 | (1.000) | 932649 | 50.0000 | |
| * 47 Chlorobenzene-d5 | 117 | 7.667 | 7.668 | (1.000) | 841154 | 50.0000 | |
| $ 48 Toluene-d8 | 98 | 6.385 | 6.386 | (0.833) | 1105214 | 53.1723 | 53.17 |
| $ 69 4-Bromofluorobenzene | 95 | 8.687 | 8.687 | (1.133) | 416906 | 53.6558 | 53.65 |
| * 70 1,4-Dichlorobenzene-d4 | 152 | 9.662 | 9.662 | (1.000) | 450019 | 50.0000 | |
| 5 Vinyl Chloride | 62 | 1.141 | 1.141 | (0.273) | 78456 | 14.1882 | 14.18 |
| 11 1,1-Dichloroethene | 96 | 1.913 | 1.914 | (0.458) | 97127 | 20.2170 | 20.21 |
| 20 trans-1,2-Dichloroethene | 96 | 2.528 | 2.525 | (0.606) | 116167 | 21.6052 | 21.60 |
| 27 cis-1,2-Dichloroethene | 96 | 3.521 | 3.522 | (0.844) | 148546 | 22.7013 | 22.70 |
| 38 Trichloroethene | 130 | 5.205 | 5.205 | (1.049) | 309106 | 48.9332 | 48.93 |
| 56 Tetrachloroethene | 164 | 6.925 | 6.925 | (0.903) | 122626 | 25.4915 | 25.49 |




Data File: \\NAHSTWS005\Target\chem\voa6,i\X230211,b\X021112.D
Date : 11-FEB-2023 15:45
Client ID: HS23020265-04HSD
Sample Info: HS23020265-04HSD;HS23020265-04HSD;3;;HSD
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6,i
Operator: PC
Column diameter: 0.18

Data File : \\NAHSTWS005\Target\chem\voa6.i\X230211.b\X021112.D
Inj Date  : 11-FEB-2023 15:45
InstruID  : voa6.i
LabSampID : HS23020265-04MSD

NO MANUAL INTEGRATIONS

Data File: \\NAHSTWS005\Target\chem\voa6.i\X230211.b\X021115.D  Page 1
Report Date: 20-Feb-2023 15:10

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X230211.b\X021115.D
Lab Smp Id: HS23020265-02  Client Smp ID: HS23020265-02
Inj Date  : 11-FEB-2023 16:49
Operator  : PC  Inst ID: voa6.i
Smp Info  : HS23020265-02;HS23020265-02;;;
Misc Info : V6;WATER;0;1;
Comment   :
Method    : \\NAHSTWS005\Target\chem\voa6.i\X230211.b\8260W.m
Meth Date : 20-Feb-2023 15:09 voa6.i  Quant Type: ISTD
Cal Date  : 16-DEC-2022 14:04  Cal File: X121608.D
Als bottle: 14
Dil Factor: 1.00000
Integrator: HP RTE  Compound Sublist: 8260-dryclean.sub
Target Version:  4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

| Name | Value | Description |
|---|---|---|
| DF | 1.000 | Dilution Factor |
| Uf | 5.000 | ng unit correction factor |
| Vo | 5.000 | sample purged |
| Cpnd Variable | | Local Compound Variable |

| Compounds | QUANT SIG MASS | RT | EXP RT | REL RT | RESPONSE | CONCENTRATIONS ON-COLUMN ( ug/l) | FINAL ( ug/l) |
|---|---|---|---|---|---|---|---|
| * 1 Pentafluorobenzene | 168 | 4.177 | 4.178 | (1.000) | 647399 | 50.0000 | |
| $ 30 Dibromofluoromethane | 113 | 4.095 | 4.095 | (0.980) | 289527 | 46.5640 | 46.56 |
| $ 35 1,2-Dichloroethane-d4 | 65 | 4.470 | 4.466 | (1.070) | 330349 | 50.3469 | 50.34 |
| * 36 1,4-Difluorobenzene | 114 | 4.961 | 4.961 | (1.000) | 957757 | 50.0000 | |
| * 47 Chlorobenzene-d5 | 117 | 7.667 | 7.668 | (1.000) | 855461 | 50.0000 | |
| $ 48 Toluene-d8 | 98 | 6.385 | 6.386 | (0.833) | 1130270 | 53.4683 | 53.46 |
| $ 69 4-Bromofluorobenzene | 95 | 8.687 | 8.687 | (1.133) | 419925 | 53.1411 | 53.14 |
| * 70 1,4-Dichlorobenzene-d4 | 152 | 9.662 | 9.662 | (1.000) | 440961 | 50.0000 | |

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Data File: \\NAHSTWS005\Target\chem\voa6.i\X230211.b\X021115.D



Date : 11-FEB-2023 16:49

Client ID: HS23020265-02

Instrument: voa6.i

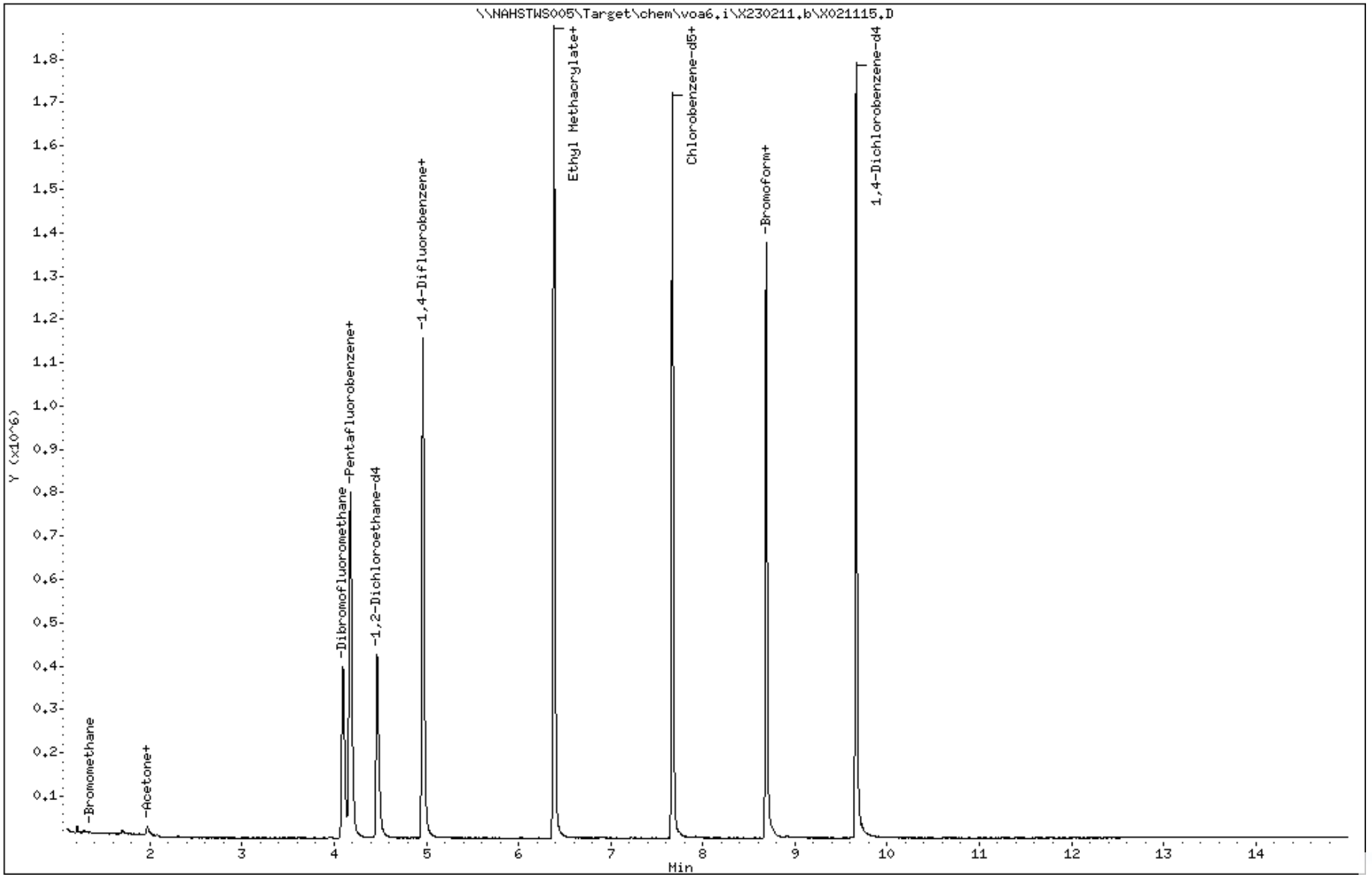
Sample Info: HS23020265-02;HS23020265-02;;;

Purge Volume: 5.0

Operator: PC

Column phase: DB624

Column diameter: 0.18



Data File : \\NAHSTWS005\Target\chem\voa6.i\X230211.b\X021115.D
Inj Date  : 11-FEB-2023 16:49
InstruID  : voa6.i
LabSampID : HS23020265-02

NO MANUAL INTEGRATIONS

Data File: \\NAHSTWS005\Target\chem\voa6.i\X230211.b\X021116.D  Page 1
Report Date: 20-Feb-2023 15:10

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X230211.b\X021116.D
Lab Smp Id: HS23020265-03  Client Smp ID: HS23020265-03
Inj Date  : 11-FEB-2023 17:10
Operator  : PC  Inst ID: voa6.i
Smp Info  : HS23020265-03;HS23020265-03;;;
Misc Info : V6;WATER;0;1;
Comment   :
Method    : \\NAHSTWS005\Target\chem\voa6.i\X230211.b\8260W.m
Meth Date : 20-Feb-2023 15:09 voa6.i  Quant Type: ISTD
Cal Date  : 16-DEC-2022 14:04  Cal File: X121608.D
Als bottle: 15
Dil Factor: 1.00000
Integrator: HP RTE  Compound Sublist: 8260-dryclean.sub
Target Version:  4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

| Name | Value | Description |
|---|---|---|
| DF | 1.000 | Dilution Factor |
| Uf | 5.000 | ng unit correction factor |
| Vo | 5.000 | sample purged |
| Cpnd Variable | | Local Compound Variable |

| Compounds | QUANT SIG MASS | RT | EXP RT | REL RT | RESPONSE | CONCENTRATIONS ON-COLUMN ( ug/l) | FINAL ( ug/l) |
|---|---|---|---|---|---|---|---|
| * 1 Pentafluorobenzene | 168 | 4.178 | 4.178 | (1.000) | 658879 | 50.0000 | |
| $ 30 Dibromofluoromethane | 113 | 4.095 | 4.095 | (0.980) | 295378 | 46.6777 | 46.67 |
| $ 35 1,2-Dichloroethane-d4 | 65 | 4.466 | 4.466 | (1.069) | 335596 | 50.2559 | 50.25 |
| * 36 1,4-Difluorobenzene | 114 | 4.965 | 4.961 | (1.000) | 960576 | 50.0000 | |
| * 47 Chlorobenzene-d5 | 117 | 7.667 | 7.668 | (1.000) | 859504 | 50.0000 | |
| $ 48 Toluene-d8 | 98 | 6.385 | 6.386 | (0.833) | 1139844 | 53.6676 | 53.66 |
| $ 69 4-Bromofluorobenzene | 95 | 8.687 | 8.687 | (1.133) | 422784 | 53.2511 | 53.25 |
| * 70 1,4-Dichlorobenzene-d4 | 152 | 9.662 | 9.662 | (1.000) | 437309 | 50.0000 | |

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Data File: \\NAHSTWS005\Target\chem\voa6.i\X230211.b\X021116.D



Date : 11-FEB-2023 17:10

Client ID: HS23020265-03

Instrument: voa6.i

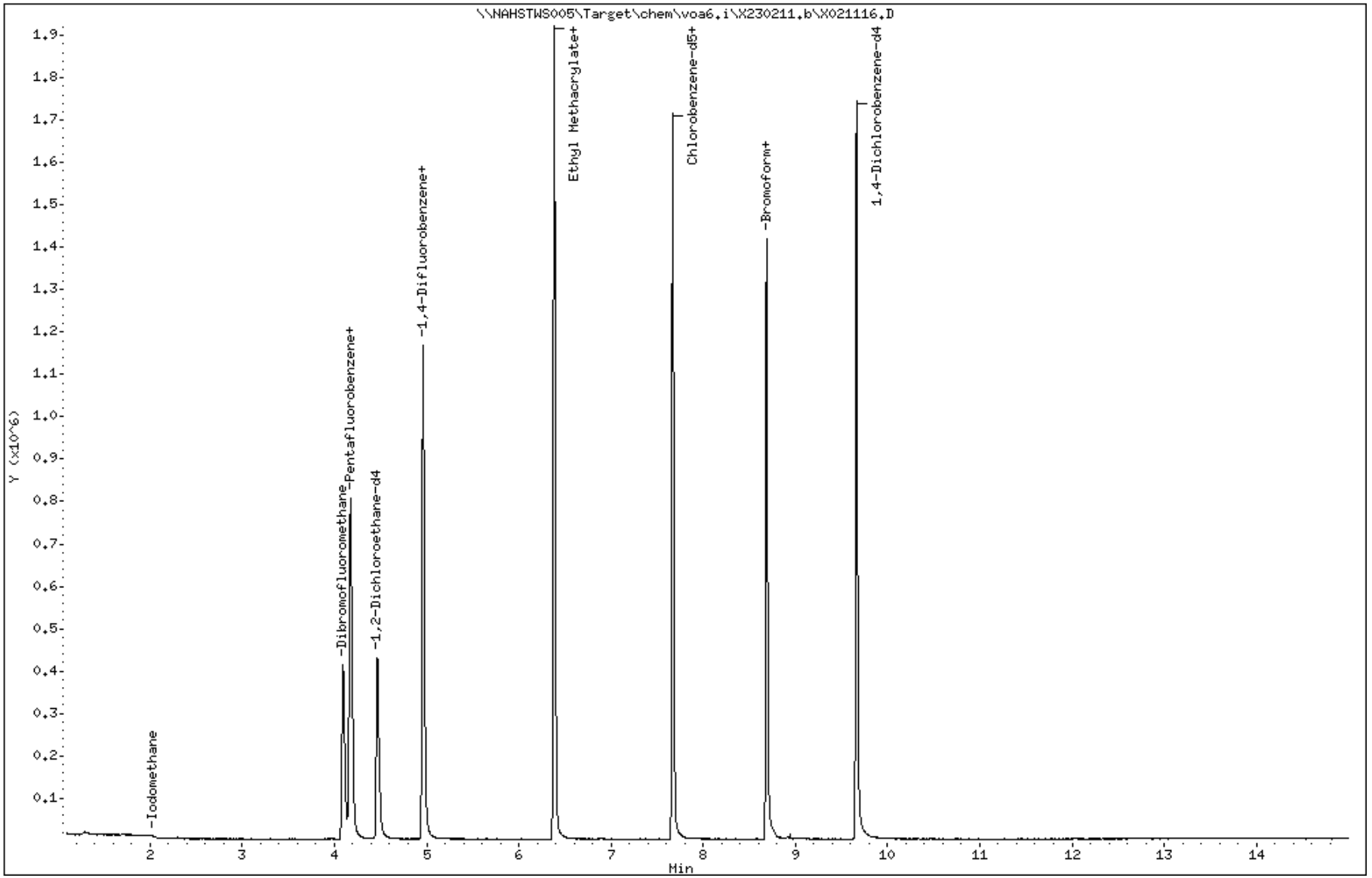
Sample Info: HS23020265-03;HS23020265-03;;;

Purge Volume: 5.0

Operator: PC

Column phase: DB624

Column diameter: 0.18



Data File : \\NAHSTWS005\Target\chem\voa6.i\X230211.b\X021116.D
Inj Date  : 11-FEB-2023 17:10
InstruID  : voa6.i
LabSampID : HS23020265-03

NO MANUAL INTEGRATIONS

Data File: \\NAHSTWS005\Target\chem\voa6.i\X230211.b\X021117.D  Page 1
Report Date: 20-Feb-2023 15:10

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Data file : \\NAHSTWS005\Target\chem\voa6.i\X230211.b\X021117.D
Lab Smp Id: HS23020265-05  Client Smp ID: HS23020265-05
Inj Date  : 11-FEB-2023 17:31
Operator  : PC  Inst ID: voa6.i
Smp Info  : HS23020265-05;HS23020265-05;;;
Misc Info : V6;WATER;0;1;
Comment   :
Method    : \\NAHSTWS005\Target\chem\voa6.i\X230211.b\8260W.m
Meth Date : 20-Feb-2023 15:09 voa6.i  Quant Type: ISTD
Cal Date  : 16-DEC-2022 14:04  Cal File: X121608.D
Als bottle: 16
Dil Factor: 1.00000
Integrator: HP RTE  Compound Sublist: 8260-dryclean.sub
Target Version:  4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

| Name | Value | Description |
|---|---|---|
| DF | 1.000 | Dilution Factor |
| Uf | 5.000 | ng unit correction factor |
| Vo | 5.000 | sample purged |
| Cpnd Variable | | Local Compound Variable |

| Compounds | QUANT SIG MASS | RT | EXP RT | REL RT | RESPONSE | CONCENTRATIONS ON-COLUMN ( ug/l) | FINAL ( ug/l) |
|---|---|---|---|---|---|---|---|
| * 1 Pentafluorobenzene | 168 | 4.178 | 4.178 | (1.000) | 645950 | 50.0000 | |
| $ 30 Dibromofluoromethane | 113 | 4.091 | 4.095 | (0.979) | 289180 | 46.6127 | 46.61 |
| $ 35 1,2-Dichloroethane-d4 | 65 | 4.466 | 4.466 | (1.069) | 331560 | 50.6432 | 50.64 |
| * 36 1,4-Difluorobenzene | 114 | 4.961 | 4.961 | (1.000) | 956646 | 50.0000 | |
| * 47 Chlorobenzene-d5 | 117 | 7.668 | 7.668 | (1.000) | 855392 | 50.0000 | |
| $ 48 Toluene-d8 | 98 | 6.385 | 6.386 | (0.833) | 1120066 | 52.9899 | 52.98 |
| $ 69 4-Bromofluorobenzene | 95 | 8.687 | 8.687 | (1.133) | 422669 | 53.4923 | 53.49 |
| * 70 1,4-Dichlorobenzene-d4 | 152 | 9.662 | 9.662 | (1.000) | 442768 | 50.0000 | |

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Data File: \\NAHSTWS005\Target\chem\voa6.i\X230211.b\X021117.D



Date : 11-FEB-2023 17:31

Client ID: HS23020265-05

Instrument: voa6.i

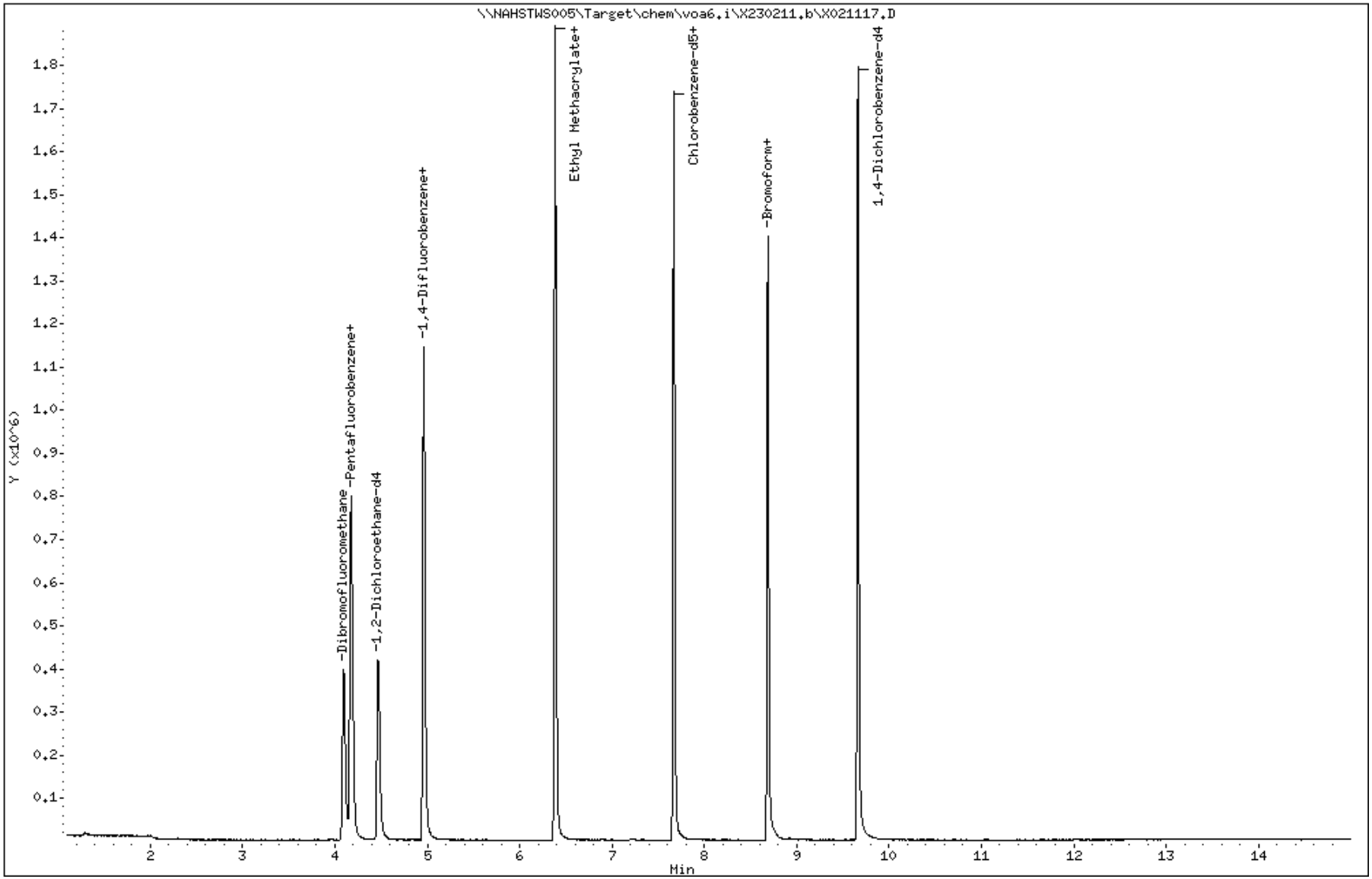
Sample Info: HS23020265-05;HS23020265-05;;;

Purge Volume: 5.0

Operator: PC

Column phase: DB624

Column diameter: 0.18



Data File : \\NAHSTWS005\Target\chem\voa6.i\X230211.b\X021117.D
Inj Date  : 11-FEB-2023 17:31
InstruID  : voa6.i
LabSampID : HS23020265-05

NO MANUAL INTEGRATIONS

Data File: \\NAHSTWS005\Target\chem\voa6.i\X230211.b\X021118.D  Page 1
Report Date: 20-Feb-2023 15:10

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X230211.b\X021118.D
Lab Smp Id: HS23020265-06  Client Smp ID: HS23020265-06
Inj Date  : 11-FEB-2023 17:52
Operator  : PC  Inst ID: voa6.i
Smp Info  : HS23020265-06;HS23020265-06;;;
Misc Info : V6;WATER;0;1;
Comment   :
Method    : \\NAHSTWS005\Target\chem\voa6.i\X230211.b\8260W.m
Meth Date : 20-Feb-2023 15:09 voa6.i  Quant Type: ISTD
Cal Date  : 16-DEC-2022 14:04  Cal File: X121608.D
Als bottle: 17
Dil Factor: 1.00000
Integrator: HP RTE  Compound Sublist: 8260-dryclean.sub
Target Version:  4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

| Name | Value | Description |
|---|---|---|
| DF | 1.000 | Dilution Factor |
| Uf | 5.000 | ng unit correction factor |
| Vo | 5.000 | sample purged |
| Cpnd Variable | | Local Compound Variable |

| Compounds | QUANT SIG MASS | RT | EXP RT | REL RT | RESPONSE | CONCENTRATIONS ON-COLUMN ( ug/l) | FINAL ( ug/l) |
|---|---|---|---|---|---|---|---|
| * 1 Pentafluorobenzene | 168 | 4.178 | 4.178 | (1.000) | 634259 | 50.0000 | |
| $ 30 Dibromofluoromethane | 113 | 4.095 | 4.095 | (0.980) | 285959 | 46.9443 | 46.94 |
| $ 35 1,2-Dichloroethane-d4 | 65 | 4.470 | 4.466 | (1.070) | 325041 | 50.5630 | 50.56 |
| * 36 1,4-Difluorobenzene | 114 | 4.961 | 4.961 | (1.000) | 937867 | 50.0000 | |
| * 47 Chlorobenzene-d5 | 117 | 7.668 | 7.668 | (1.000) | 827827 | 50.0000 | |
| $ 48 Toluene-d8 | 98 | 6.386 | 6.386 | (0.833) | 1099689 | 53.7582 | 53.75 |
| $ 69 4-Bromofluorobenzene | 95 | 8.687 | 8.687 | (1.133) | 408339 | 53.3996 | 53.39 |
| * 70 1,4-Dichlorobenzene-d4 | 152 | 9.662 | 9.662 | (1.000) | 429749 | 50.0000 | |

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Data File: \\NAHSTWS005\Target\chem\voa6.i\X230211.b\X021118.D



Date : 11-FEB-2023 17:52

Client ID: HS23020265-06

Instrument: voa6.i

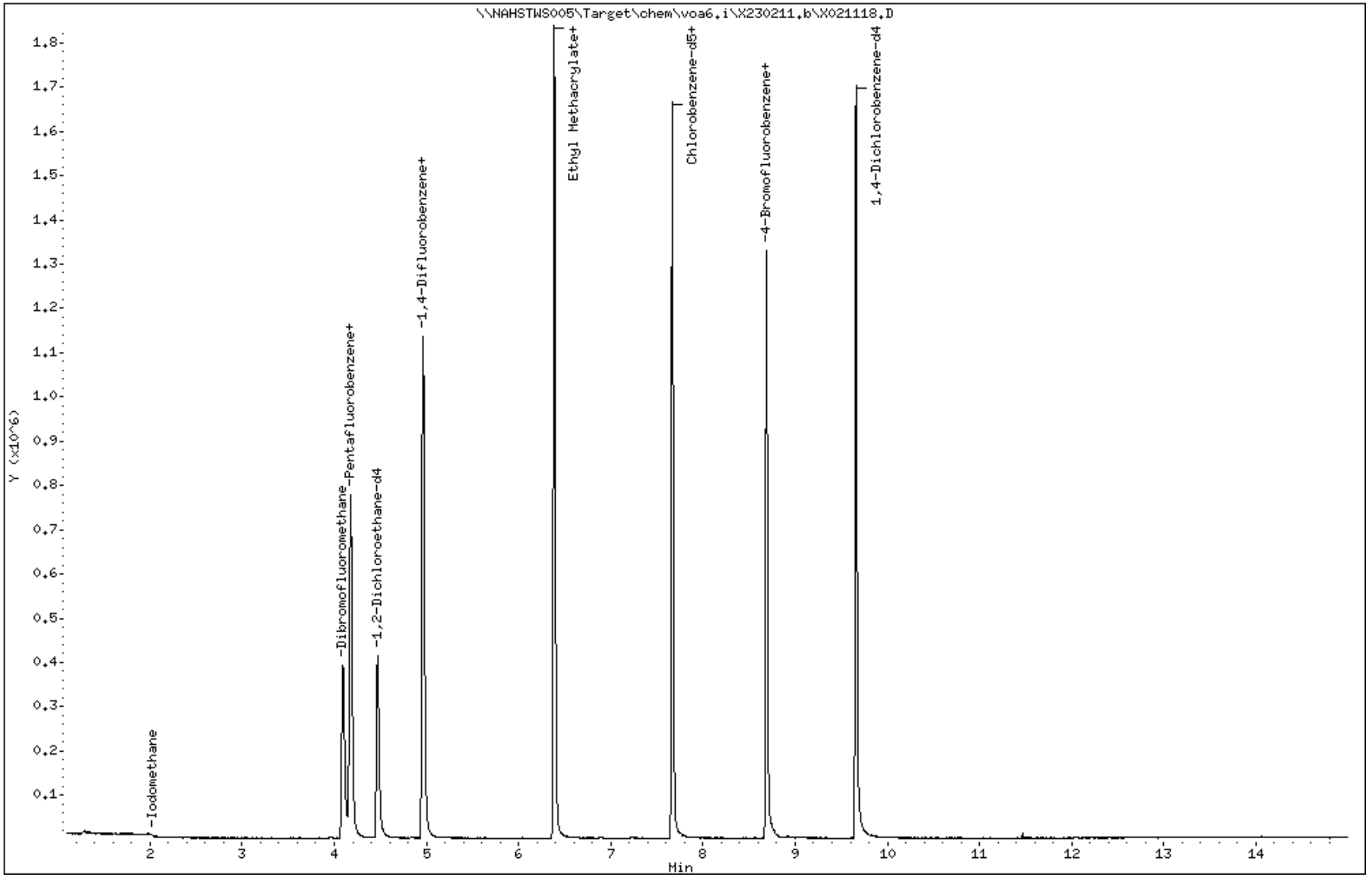
Sample Info: HS23020265-06;HS23020265-06;;;

Purge Volume: 5.0

Operator: PC

Column phase: DB624

Column diameter: 0.18



Data File : \\NAHSTWS005\Target\chem\voa6.i\X230211.b\X021118.D
Inj Date  : 11-FEB-2023 17:52
InstruID  : voa6.i
LabSampID : HS23020265-06

NO MANUAL INTEGRATIONS

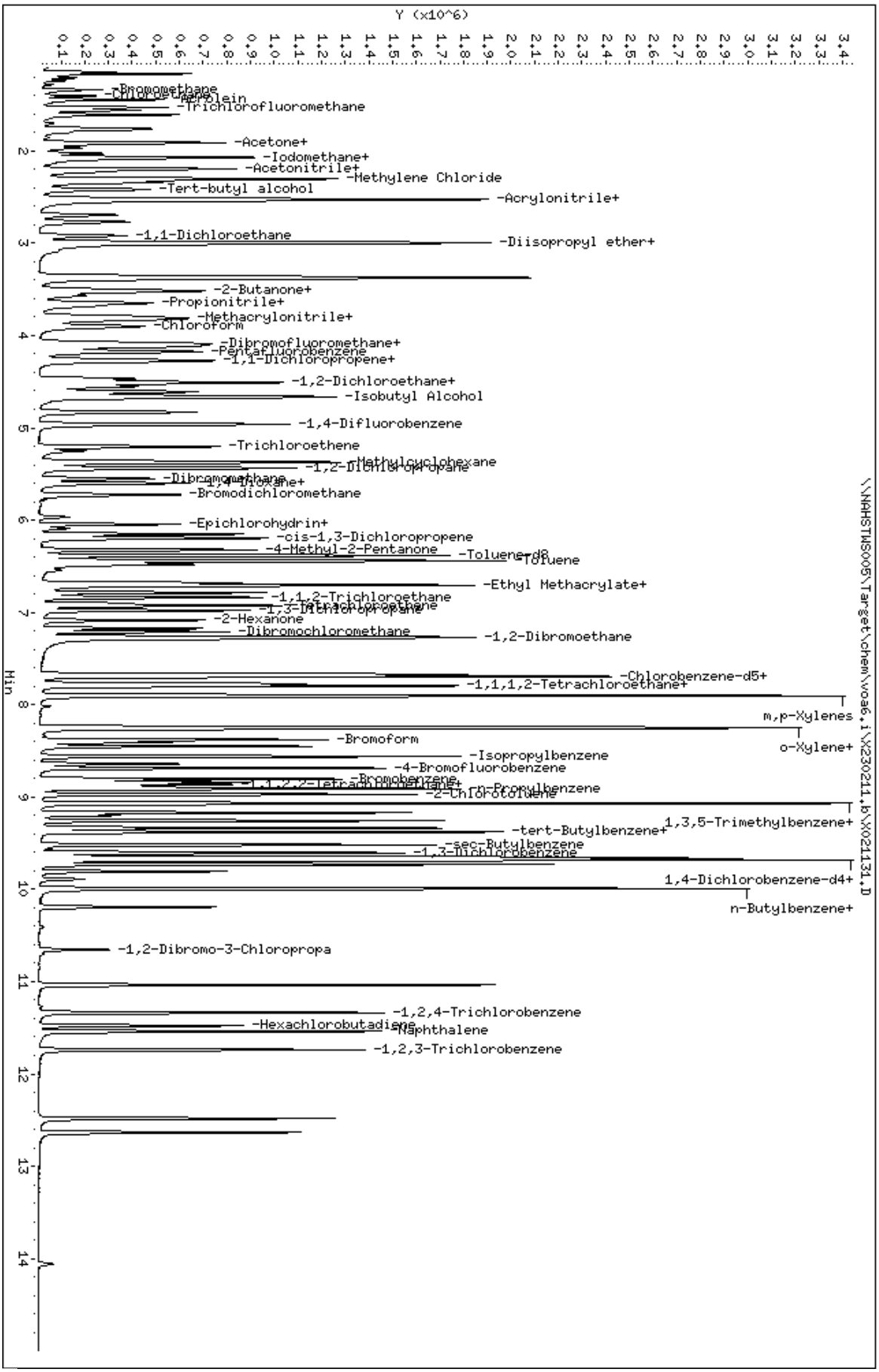
ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X230211.b\X021131.D
Lab Smp Id: CCV-END Client Smp ID: CCV-END
Inj Date : 11-FEB-2023 22:25
Operator : PC Inst ID: voa6.i
Smp Info : CCV-END;CCV-END;2;;
Misc Info : V6;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X230211.b\8260W.m
Meth Date : 28-Feb-2023 10:34 voa6.i Quant Type: ISTD
Cal Date : 16-DEC-2022 14:04 Cal File: X121608.D
Als bottle: 30 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260-dryclean.sub
Target Version: 4.14
Processing Host: NAHSTW7017

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

| Name | Value | Description |
|---|---|---|
| DF | 1.000 | Dilution Factor |
| Uf | 5.000 | ng unit correction factor |
| Vo | 5.000 | sample purged |
| Cpnd Variable | | Local Compound Variable |

| Compounds | QUANT SIG MASS | RT | EXP RT | REL RT | RESPONSE | AMOUNTS CAL-AMT ( ug/l) | ON-COL ( ug/l) |
|---|---|---|---|---|---|---|---|
| * 1 Pentafluorobenzene | 168 | 4.177 | 4.177 | (1.000) | 544214 | 50.0000 | |
| $ 30 Dibromofluoromethane | 113 | 4.095 | 4.095 | (0.980) | 263667 | 50.0000 | 50.45 |
| $ 35 1,2-Dichloroethane-d4 | 65 | 4.470 | 4.470 | (1.070) | 308172 | 50.0000 | 55.84 |
| * 36 1,4-Difluorobenzene | 114 | 4.961 | 4.961 | (1.000) | 855838 | 50.0000 | |
| * 47 Chlorobenzene-d5 | 117 | 7.667 | 7.667 | (1.000) | 792205 | 50.0000 | |
| $ 48 Toluene-d8 | 98 | 6.385 | 6.385 | (0.833) | 1008970 | 50.0000 | 51.54 |
| $ 69 4-Bromofluorobenzene | 95 | 8.687 | 8.687 | (1.133) | 394425 | 50.0000 | 53.89 |
| * 70 1,4-Dichlorobenzene-d4 | 152 | 9.662 | 9.662 | (1.000) | 429278 | 50.0000 | |
| 5 Vinyl Chloride | 62 | 1.141 | 1.141 | (0.273) | 212377 | 50.0000 | 44.67 |
| 11 1,1-Dichloroethene | 96 | 1.913 | 1.913 | (0.458) | 158057 | 50.0000 | 38.26 |
| 20 trans-1,2-Dichloroethene | 96 | 2.528 | 2.528 | (0.605) | 210768 | 50.0000 | 45.59 |
| 27 cis-1,2-Dichloroethene | 96 | 3.521 | 3.521 | (0.843) | 252656 | 50.0000 | 44.91 |
| 38 Trichloroethene | 130 | 5.205 | 5.205 | (1.049) | 252073 | 50.0000 | 43.48 |
| 56 Tetrachloroethene | 164 | 6.925 | 6.925 | (0.903) | 183864 | 50.0000 | 40.58 |




Data File: \\NAHSTWS005\Target\chem\voa6.i\X230211.b\X021131.D
Date : 11-FEB-2023 22:25
Client ID: CCV-END
Sample Info: CCV-END;CCV-END;2;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File : \\NAHSTWS005\Target\chem\voa6.i\X230211.b\X021131.D
Inj Date  : 11-FEB-2023 22:25
InstruID  : voa6.i
LabSampID : CCV-END

NO MANUAL INTEGRATIONS

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right partner.

# Raw Data VOA6 428010

## Volatiles by  by EPA 8260

Workorder

HS23020265

Client

Aptim Environmental & Infrastucture, Inc.

Project

LHAAP46 Febuary 2023

02/28/2023

ALS Environmental–Houston Laboratory
10450 Stancliff Road, Suite 210, Houston, TX 77099
Phone (281) 530-5656 Fax (281) 530-5887
www.alsglobal.com

Data File: \\NAHSTWS005\Target\chem\voa6.i\X230214.b\X021401.D  Page 1
Report Date: 14-Feb-2023 11:03

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X230214.b\X021401.D
Lab Smp Id: BFB  Client Smp ID: BFB
Inj Date  : 14-FEB-2023 10:24
Operator  : PC  Inst ID: voa6.i
Smp Info  : BFB;BFB;3;;BFB
Misc Info : V6;WATER;0;1;
Comment   :
Method    : \\NAHSTWS005\Target\chem\voa6.i\X230214.b\bfb.m
Meth Date : 01-Dec-2022 12:59 Linh.Pham  Quant Type: ISTD
Cal Date  :  Cal File:
Als bottle: 1  QC Sample: BFB
Dil Factor: 1.00000
Integrator: HP RTE  Compound Sublist: all.sub
Target Version:  4.14  Sample Matrix: WATER
Processing Host: NAHSTW7051

Concentration Formula: Amt * DF * Uf * Vf * Vi * CpndVariable

| Name | Value | Description |
|---|---|---|
| DF | 1.000 | Dilution Factor |
| Uf | 5.000 | ng unit correction factor |
| Vf | 1.000 | Volumetric correction factor |
| Vi | 2.000 | Injection Volume |
| Cpnd Variable | | Local Compound Variable |

| | | | | | CONCENTRATIONS ON-COL ( ug/L) | CONCENTRATIONS FINAL ( ug/l) | TARGET RANGE | RATIO |
|---|---|---|---|---|---|---|---|---|
| 1 bfb | | | | | | | CAS #: 460-00-4 | |
| 8.687 | 8.889 | ( 0.000) | 95 | 106344 | | | 0.00- 100.00 | 100.00 |
| 8.687 | 8.889 | ( 0.000) | 50 | 18352 | | | 15.00- 40.00 | 17.26 |
| 8.687 | 8.889 | ( 0.000) | 75 | 49648 | | | 30.00- 60.00 | 46.69 |
| 8.687 | 8.889 | ( 0.000) | 96 | 6798 | | | 5.00- 9.00 | 6.39 |
| 8.687 | 8.889 | ( 0.000) | 173 | 536 | | | 0.00- 2.00 | 0.65 |
| 8.687 | 8.889 | ( 0.000) | 174 | 82904 | | | 50.00- 0.00 | 77.96 |
| 8.687 | 8.889 | ( 0.000) | 175 | 6337 | | | 5.00- 9.00 | 7.64 |
| 8.687 | 8.889 | ( 0.000) | 176 | 79024 | | | 95.00- 101.00 | 95.32 |
| 8.687 | 8.889 | ( 0.000) | 177 | 5868 | | | 5.00- 9.00 | 7.43 |

| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 95 | Base Peak, 100% relative abundance | 100.00 |
| 50 | 15.00 - 40.00% of mass 95 | 17.26 |
| 75 | 30.00 - 60.00% of mass 95 | 46.69 |
| 96 | 5.00 - 9.00% of mass 95 | 6.39 |
| 173 | Less than 2.00% of mass 174 | 0.50 ( 0.65) |
| 174 | Greater than 50.00% of mass 95 | 77.96 |
| 175 | 5.00 - 9.00% of mass 174 | 5.96 ( 7.64) |
| 176 | 95.00 - 101.00% of mass 174 | 74.31 ( 95.32) |
| 177 | 5.00 - 9.00% of mass 176 | 5.52 ( 7.43) |

Data File: X021401.D
Spectrum: Scan 2159 ( 8.68)
Location of Maximum: 95.00
Number of points: 104

| m/z | Y | m/z | Y | m/z | Y | m/z | Y |
|---|---|---|---|---|---|---|---|
| 36.10 | 934 | 65.20 | 85 | 94.00 | 11128 | 140.90 | 660 |
| 37.00 | 4332 | 66.20 | 133 | 95.00 | 106344 | 141.90 | 211 |
| 38.10 | 3945 | 66.80 | 393 | 96.00 | 6798 | 142.80 | 742 |
| 39.00 | 1921 | 68.00 | 9389 | 97.00 | 380 | 144.80 | 50 |
| 40.00 | 1318 | 69.00 | 10891 | 98.10 | 1031 | 145.90 | 105 |
| 41.00 | 1042 | 70.10 | 1361 | 103.10 | 107 | 147.90 | 275 |
| 42.10 | 1854 | 70.90 | 240 | 104.00 | 350 | 148.80 | 65 |
| 42.90 | 700 | 71.90 | 555 | 104.90 | 245 | 149.70 | 73 |
| 44.00 | 1428 | 73.00 | 4372 | 105.80 | 404 | 153.70 | 63 |
| 45.10 | 932 | 74.00 | 14955 | 106.80 | 155 | 154.70 | 198 |
| 47.00 | 1327 | 75.00 | 49648 | 108.70 | 76 | 155.10 | 255 |
| 48.00 | 515 | 76.00 | 4168 | 109.90 | 78 | 157.00 | 84 |
| 49.00 | 3666 | 77.00 | 836 | 110.70 | 80 | 158.80 | 91 |
| 50.00 | 18352 | 77.90 | 693 | 112.00 | 69 | 160.80 | 228 |
| 51.00 | 4977 | 78.90 | 1931 | 115.20 | 136 | 169.90 | 115 |
| 52.10 | 187 | 80.00 | 845 | 115.90 | 380 | 173.00 | 536 |
| 52.90 | 95 | 80.90 | 2282 | 116.90 | 615 | 173.90 | 82904 |
| 54.00 | 253 | 81.80 | 468 | 117.80 | 345 | 175.00 | 6337 |
| 55.10 | 2859 | 82.80 | 181 | 118.80 | 530 | 175.90 | 79024 |
| 56.10 | 1625 | 84.20 | 58 | 127.00 | 85 | 177.00 | 5868 |
| 57.00 | 2479 | 84.80 | 144 | 127.70 | 293 | 177.90 | 241 |
| 58.00 | 408 | 85.60 | 59 | 129.00 | 217 | 186.10 | 134 |
| 60.00 | 970 | 87.00 | 3167 | 129.80 | 363 | 262.00 | 56 |
| 61.00 | 4503 | 87.90 | 3761 | 130.60 | 177 | | |
| 62.00 | 3492 | 90.80 | 275 | 134.60 | 78 | | |
| 63.10 | 3299 | 92.00 | 2996 | 136.90 | 89 | | |
| 64.10 | 400 | 93.00 | 3788 | 139.70 | 65 | | |

Data File: \\NAHSTWS005\Target\chem\voa6.i\X230214.b\X021401.D



Date : 14-FEB-2023 10:24

Client ID: BFB

Instrument: voa6.i

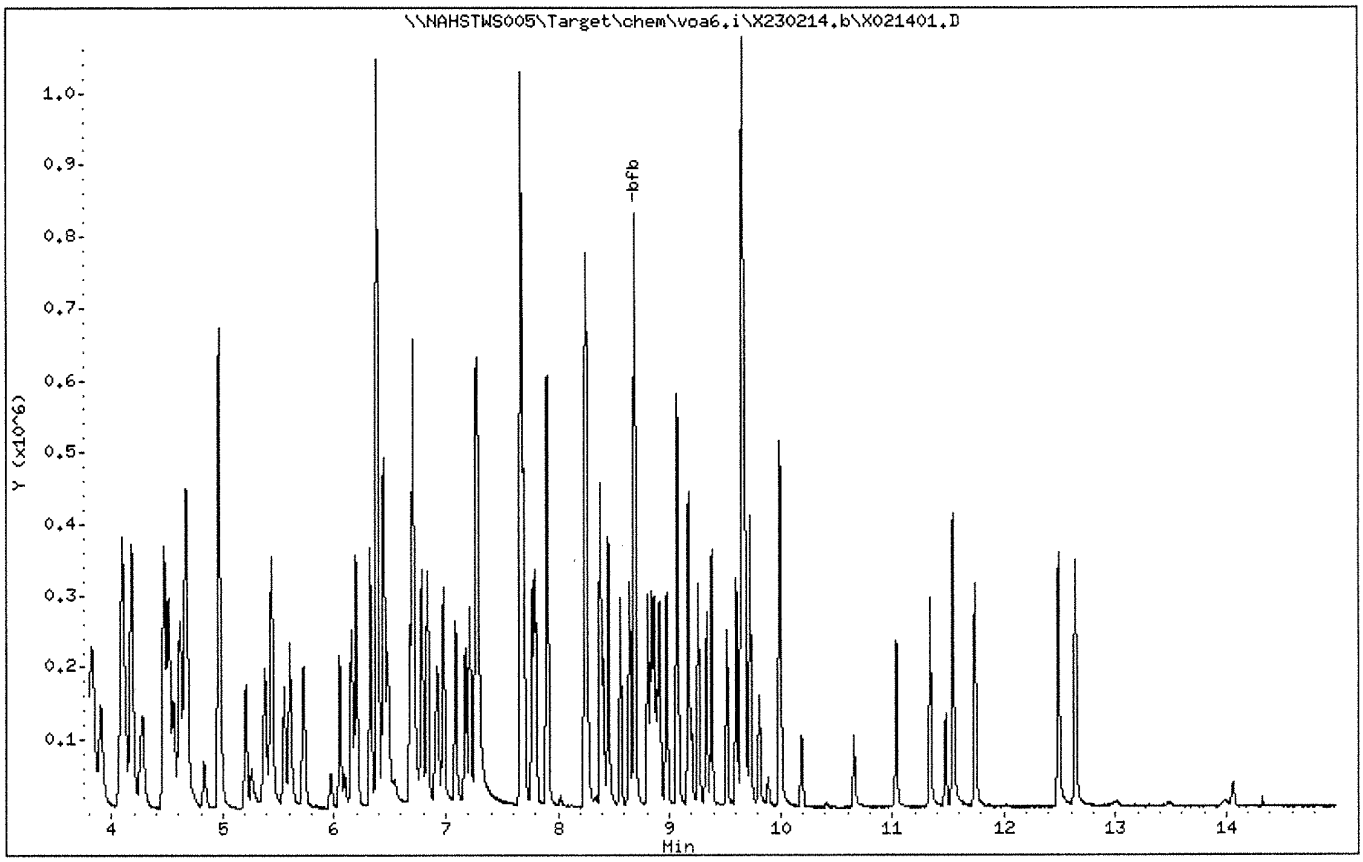
Sample Info: BFB;BFB;3;;BFB

Volume Injected (uL): 2.0

Operator: PC

Column phase: DB624

Column diameter: 0.25



Data File: \\NAHSTWS005\Target\chem\voa6.i\X230214.b\X021401.D 

Date : 14-FEB-2023 10:24

Client ID: BFB

Instrument: voa6.i

Sample Info: BFB;BFB;3;;BFB

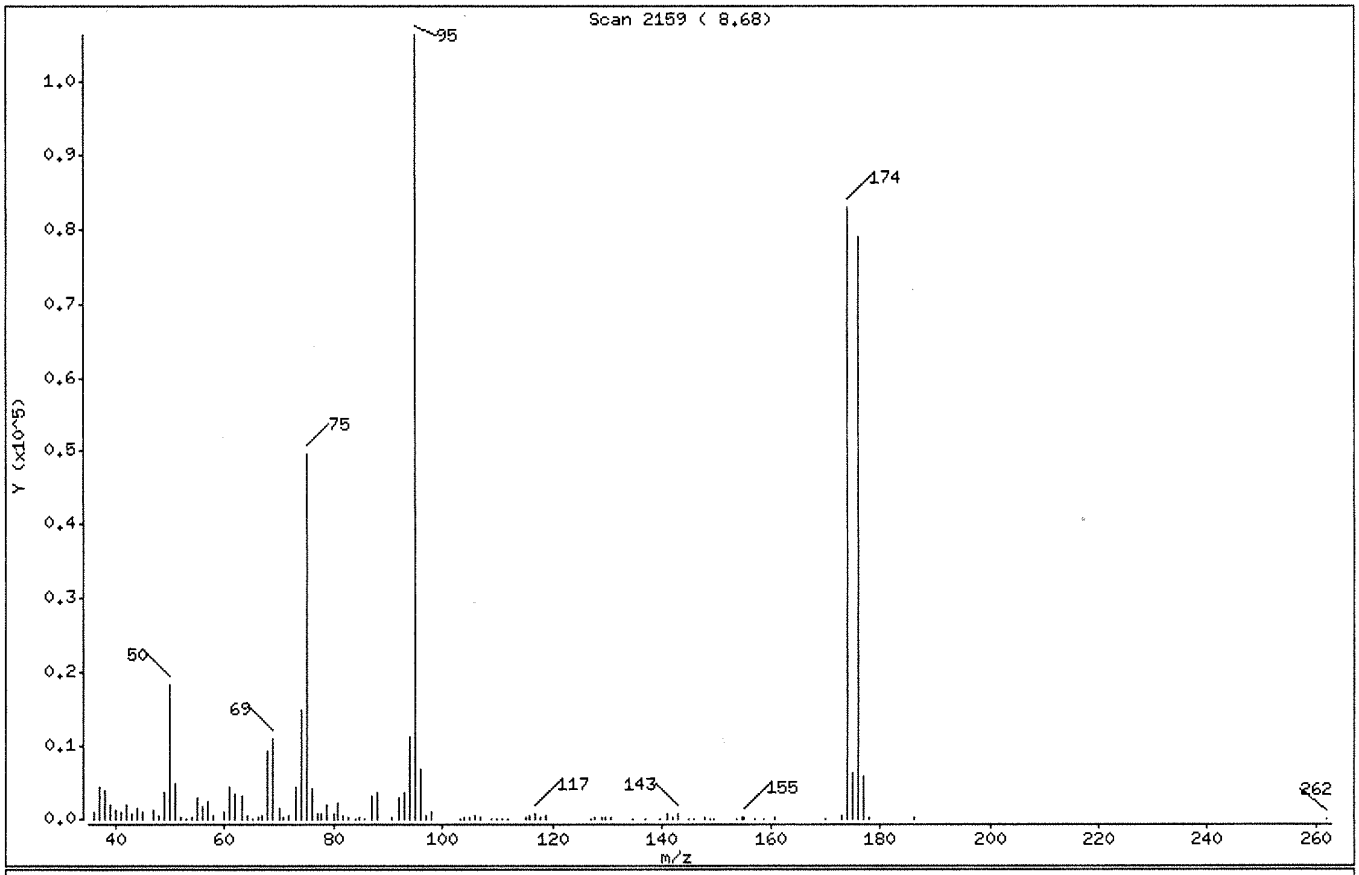
Volume Injected (uL): 2.0

Operator: PC

Column phase: DB624

Column diameter: 0.25

1 bfb




| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 95 | Base Peak, 100% relative abundance | 100.00 |
| 50 | 15.00 - 40.00% of mass 95 | 17.26 |
| 75 | 30.00 - 60.00% of mass 95 | 46.69 |
| 96 | 5.00 - 9.00% of mass 95 | 6.39 |
| 173 | Less than 2.00% of mass 174 | 0.50 ( 0.65) |
| 174 | Greater than 50.00% of mass 95 | 77.96 |
| 175 | 5.00 - 9.00% of mass 174 | 5.96 ( 7.64) |
| 176 | 95.00 - 101.00% of mass 174 | 74.31 ( 95.32) |
| 177 | 5.00 - 9.00% of mass 176 | 5.52 ( 7.43) |

Data File: \\NAHSTWS005\Target\chem\voa6.i\X230214.b\X021401.D Page 3

Date : 14-FEB-2023 10:24

Client ID: BFB Instrument: voa6.i

Sample Info: BFB;BFB;3;;BFB

Volume Injected (uL): 2.0 Operator: PC

Column phase: DB624 Column diameter: 0.25

Data File: X021401.D
Spectrum: Scan 2159 ( 8.68)
Location of Maximum: 95.00
Number of points: 104

| m/z | Y | m/z | Y | m/z | Y | m/z | Y |
|---|---|---|---|---|---|---|---|
| 36.10 | 934 | 65.20 | 85 | 94.00 | 11128 | 140.90 | 660 |
| 37.00 | 4332 | 66.20 | 133 | 95.00 | 106344 | 141.90 | 211 |
| 38.10 | 3945 | 66.80 | 393 | 96.00 | 6798 | 142.80 | 742 |
| 39.00 | 1921 | 68.00 | 9389 | 97.00 | 380 | 144.80 | 50 |
| 40.00 | 1318 | 69.00 | 10891 | 98.10 | 1031 | 145.90 | 105 |
| 41.00 | 1042 | 70.10 | 1361 | 103.10 | 107 | 147.90 | 275 |
| 42.10 | 1854 | 70.90 | 240 | 104.00 | 350 | 148.80 | 65 |
| 42.90 | 700 | 71.90 | 555 | 104.90 | 245 | 149.70 | 73 |
| 44.00 | 1428 | 73.00 | 4372 | 105.80 | 404 | 153.70 | 63 |
| 45.10 | 932 | 74.00 | 14955 | 106.80 | 155 | 154.70 | 198 |
| 47.00 | 1327 | 75.00 | 49648 | 108.70 | 76 | 155.10 | 255 |
| 48.00 | 515 | 76.00 | 4168 | 109.90 | 78 | 157.00 | 84 |
| 49.00 | 3666 | 77.00 | 836 | 110.70 | 80 | 158.80 | 91 |
| 50.00 | 18352 | 77.90 | 693 | 112.00 | 69 | 160.80 | 228 |
| 51.00 | 4977 | 78.90 | 1931 | 115.20 | 136 | 169.90 | 115 |
| 52.10 | 187 | 80.00 | 845 | 115.90 | 380 | 173.00 | 536 |
| 52.90 | 95 | 80.90 | 2282 | 116.90 | 615 | 173.90 | 82904 |
| 54.00 | 253 | 81.80 | 468 | 117.80 | 345 | 175.00 | 6337 |
| 55.10 | 2859 | 82.80 | 181 | 118.80 | 530 | 175.90 | 79024 |
| 56.10 | 1625 | 84.20 | 58 | 127.00 | 85 | 177.00 | 5868 |
| 57.00 | 2479 | 84.80 | 144 | 127.70 | 293 | 177.90 | 241 |
| 58.00 | 408 | 85.60 | 59 | 129.00 | 217 | 186.10 | 134 |
| 60.00 | 970 | 87.00 | 3167 | 129.80 | 363 | 262.00 | 56 |
| 61.00 | 4503 | 87.90 | 3761 | 130.60 | 177 | | |
| 62.00 | 3492 | 90.80 | 275 | 134.60 | 78 | | |
| 63.10 | 3299 | 92.00 | 2996 | 136.90 | 89 | | |
| 64.10 | 400 | 93.00 | 3788 | 139.70 | 65 | | |

Data File : \\NAHSTWS005\Target\chem\voa6.i\X230214.b\X021401.D
Inj Date  : 14-FEB-2023 10:24
InstruID  : voa6.i
LabSampID : BFB

NO MANUAL INTEGRATIONS

Data File: \\NAHSTWS005\Target\chem\voa6.i\X230214.b\X021403.D  Page 1
Report Date: 21-Feb-2023 16:57

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X230214.b\X021403.D
Lab Smp Id: CCV  Client Smp ID: CCV
Inj Date  : 14-FEB-2023 11:06
Operator  : PC  Inst ID: voa6.i
Smp Info  : CCV;CCV;2;;
Misc Info : V6;WATER;0;1;
Comment   :
Method    : \\NAHSTWS005\Target\chem\voa6.i\X230214.b\8260W.m
Meth Date : 21-Feb-2023 16:57 voa6.i  Quant Type: ISTD
Cal Date  : 16-DEC-2022 14:04  Cal File: X121608.D
Als bottle: 3  Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE  Compound Sublist: 8260_GB.sub
Target Version:  4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

| Name | Value | Description |
|---|---|---|
| DF | 1.000 | Dilution Factor |
| Uf | 5.000 | ng unit correction factor |
| Vo | 5.000 | sample purged |
| Cpnd Variable | | Local Compound Variable |

| | Compounds | QUANT SIG MASS | RT | EXP RT | REL RT | RESPONSE | AMOUNTS CAL-AMT ( ug/l) | ON-COL ( ug/l) |
|---|---|---|---|---|---|---|---|---|
| * 1 | Pentafluorobenzene | 168 | 4.178 | 4.178 | (1.000) | 532990 | 50.0000 | |
| 135 | 1,4-Dioxane | 88 | 5.598 | 5.598 | (1.340) | 69110 | 1000.00 | 1418.48 |
| 140 | 1,3-Butadiene | 54 | 1.164 | 1.164 | (0.279) | 172071 | 50.0000 | 47.03 |
| 2 | Dichlorodifluoromethane | 85 | 0.973 | 0.973 | (0.233) | 185517 | 50.0000 | 49.76 |
| 3 | Chloromethane | 50 | 1.077 | 1.077 | (0.258) | 315472 | 50.0000 | 64.73 |
| 5 | Vinyl Chloride | 62 | 1.141 | 1.141 | (0.273) | 238895 | 50.0000 | 51.30 |
| 6 | Bromomethane | 94 | 1.340 | 1.340 | (0.321) | 155336 | 50.0000 | 44.31 |
| 7 | Chloroethane | 64 | 1.404 | 1.404 | (0.336) | 159323 | 50.0000 | 49.16 |
| 8 | Trichlorofluoromethane | 101 | 1.557 | 1.557 | (0.373) | 273614 | 50.0000 | 41.99 |
| 9 | Acrolein | 56 | 1.445 | 1.445 | (0.346) | 32088 | 100.000 | 88.36 |
| 10 | Acetone | 43 | 1.966 | 1.966 | (0.471) | 161799 | 100.000 | 108.19 |
| 11 | 1,1-Dichloroethene | 96 | 1.913 | 1.913 | (0.458) | 165978 | 50.0000 | 41.03 |
| 15 | Iodomethane | 142 | 2.026 | 2.026 | (0.485) | 443908 | 100.000 | 84.37 |
| 16 | Acrylonitrile | 53 | 2.528 | 2.528 | (0.605) | 174445 | 100.000 | 127.15 |
| 17 | Methylene Chloride | 84 | 2.300 | 2.300 | (0.550) | 259507 | 50.0000 | 46.76 |
| 18 | Methyl tert-butyl ether | 73 | 2.528 | 2.528 | (0.605) | 727693 | 50.0000 | 54.95 |
| 19 | Carbon Disulfide | 76 | 2.067 | 2.067 | (0.495) | 1112286 | 100.000 | 105.09 |
| 20 | trans-1,2-Dichloroethene | 96 | 2.528 | 2.528 | (0.605) | 213198 | 50.0000 | 47.09 |
| 21 | Vinyl Acetate | 43 | 2.993 | 2.993 | (0.716) | 1489516 | 100.000 | 128.15 |
| 22 | 1,1-Dichloroethane | 63 | 2.918 | 2.918 | (0.699) | 403714 | 50.0000 | 50.81 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 24 | 2-Butanone | 43 | 3.570 | 3.570 (0.855) | 189526 | 100.000 | 118.88(M) |
| 26 | 2,2-Dichloropropane | 77 | 3.507 | 3.507 (0.839) | 328477 | 50.0000 | 48.69 |

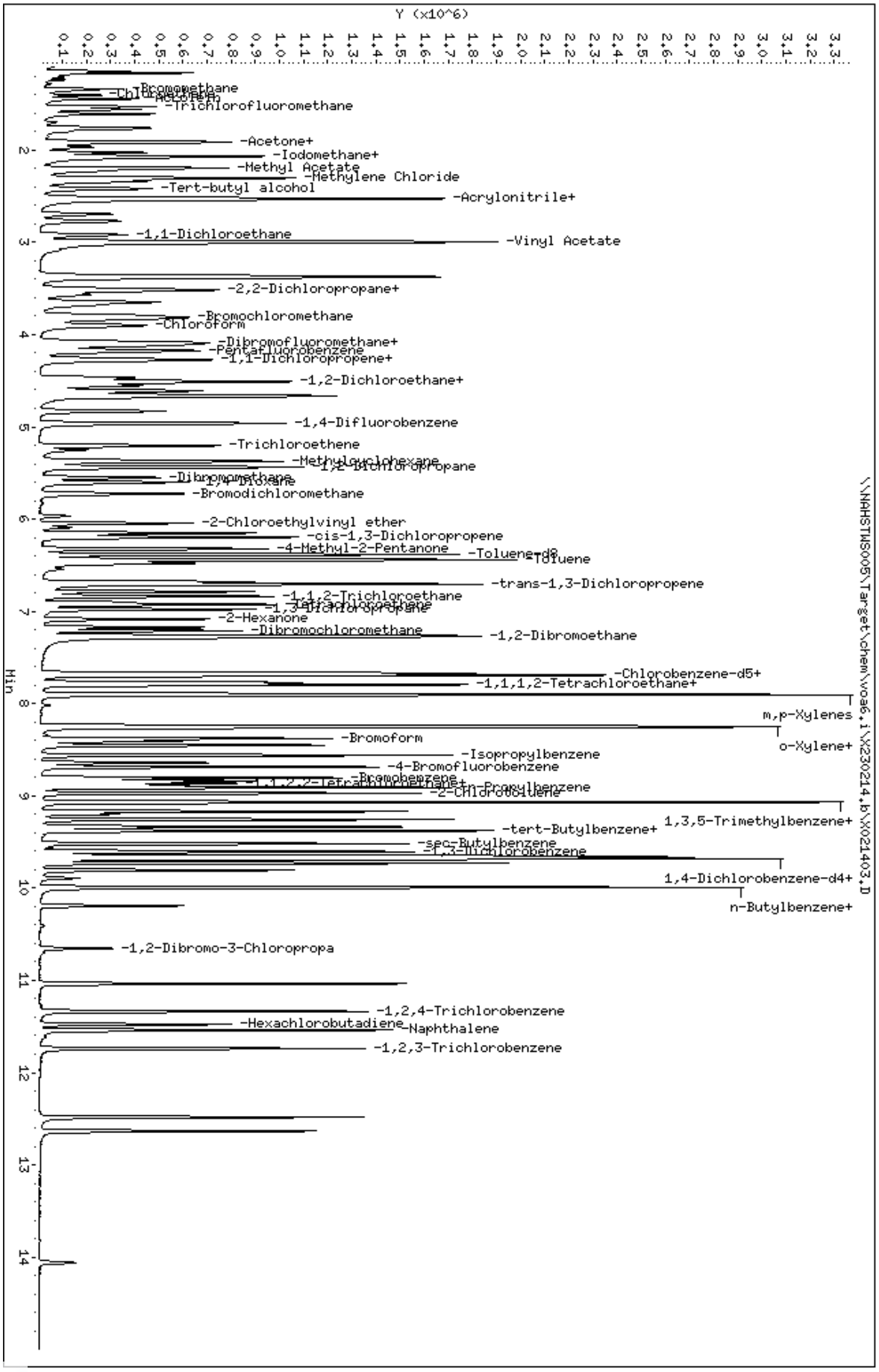
| | | | QUANT SIG | | | | | AMOUNTS | |
|---|---|---|---|---|---|---|---|---|---|
| | | Compounds | MASS | RT | EXP RT | REL RT | RESPONSE | CAL-AMT ( ug/l) | ON-COL ( ug/l) |
| | 27 | cis-1,2-Dichloroethene | 96 | 3.522 | 3.522 | (0.843) | 256797 | 50.0000 | 46.60 |
| | 28 | Chloroform | 83 | 3.904 | 3.904 | (0.935) | 421466 | 50.0000 | 47.32 |
| | 29 | Bromochloromethane | 128 | 3.788 | 3.788 | (0.907) | 136369 | 50.0000 | 45.20 |
| $ | 30 | Dibromofluoromethane | 113 | 4.095 | 4.095 | (0.980) | 257526 | 50.0000 | 50.32 |
| | 31 | 1,1,1-Trichloroethane | 97 | 4.076 | 4.076 | (0.976) | 318686 | 50.0000 | 45.10 |
| | 32 | 1,1-Dichloropropene | 75 | 4.279 | 4.279 | (0.862) | 279337 | 50.0000 | 47.33 |
| | 33 | 1,2-Dichloroethane | 62 | 4.552 | 4.552 | (0.918) | 350717 | 50.0000 | 51.50 |
| | 34 | Carbon Tetrachloride | 117 | 4.264 | 4.264 | (0.859) | 252461 | 50.0000 | 40.06(M) |
| $ | 35 | 1,2-Dichloroethane-d4 | 65 | 4.470 | 4.470 | (1.070) | 293904 | 50.0000 | 54.38 |
| * | 36 | 1,4-Difluorobenzene | 114 | 4.961 | 4.961 | (1.000) | 831161 | 50.0000 | |
| | 37 | Benzene | 78 | 4.507 | 4.507 | (0.909) | 963142 | 50.0000 | 48.52 |
| | 38 | Trichloroethene | 130 | 5.205 | 5.205 | (1.049) | 249068 | 50.0000 | 44.24 |
| | 39 | Bromodichloromethane | 83 | 5.722 | 5.722 | (1.153) | 350683 | 50.0000 | 47.07 |
| | 41 | 2-Chloroethylvinyl ether | 63 | 6.044 | 6.044 | (1.218) | 248758 | 100.000 | 117.38 |
| | 42 | 1,2-Dichloropropane | 63 | 5.433 | 5.433 | (1.095) | 269099 | 50.0000 | 50.96 |
| | 44 | Dibromomethane | 93 | 5.550 | 5.550 | (1.119) | 168818 | 50.0000 | 47.04 |
| | 45 | 4-Methyl-2-Pentanone | 43 | 6.322 | 6.322 | (0.824) | 519743 | 100.000 | 125.15(M) |
| | 46 | cis-1,3-Dichloropropene | 75 | 6.153 | 6.153 | (1.240) | 463970 | 50.0000 | 53.03 |
| * | 47 | Chlorobenzene-d5 | 117 | 7.668 | 7.668 | (1.000) | 776932 | 50.0000 | |
| $ | 48 | Toluene-d8 | 98 | 6.386 | 6.386 | (0.833) | 989350 | 50.0000 | 51.53 |
| | 50 | Toluene | 91 | 6.446 | 6.446 | (0.841) | 990985 | 50.0000 | 46.14 |
| | 51 | trans-1,3-Dichloropropene | 75 | 6.678 | 6.678 | (1.346) | 393441 | 50.0000 | 54.19 |
| | 52 | 2-Hexanone | 43 | 7.083 | 7.083 | (0.924) | 353730 | 100.000 | 125.19(M) |
| | 53 | 1,1,2-Trichloroethane | 83 | 6.835 | 6.835 | (0.891) | 212147 | 50.0000 | 49.24 |
| | 54 | 1,3-Dichloropropane | 76 | 6.978 | 6.978 | (0.910) | 439835 | 50.0000 | 51.86 |
| | 55 | Dibromochloromethane | 129 | 7.173 | 7.173 | (0.935) | 298310 | 50.0000 | 47.97 |
| | 56 | Tetrachloroethene | 164 | 6.925 | 6.925 | (0.903) | 178928 | 50.0000 | 40.27 |
| | 57 | 1,2-Dibromoethane | 107 | 7.259 | 7.259 | (0.947) | 270997 | 50.0000 | 50.31 |
| | 58 | 1-Chlorohexane | 55 | 7.694 | 7.694 | (1.551) | 167078 | 50.0000 | 41.59 |
| | 59 | Chlorobenzene | 112 | 7.690 | 7.690 | (1.003) | 675978 | 50.0000 | 44.37 |
| | 60 | 1,1,1,2-Tetrachloroethane | 131 | 7.773 | 7.773 | (1.014) | 261268 | 50.0000 | 46.09 |
| | 61 | Ethylbenzene | 106 | 7.799 | 7.799 | (1.017) | 322788 | 50.0000 | 44.98 |
| | 62 | m,p-Xylenes | 106 | 7.904 | 7.904 | (1.031) | 814744 | 100.000 | 88.08 |
| | 63 | o-Xylene | 106 | 8.241 | 8.241 | (1.075) | 409163 | 50.0000 | 44.81 |
| | 64 | Styrene | 104 | 8.256 | 8.256 | (1.077) | 723783 | 50.0000 | 47.30 |
| | 66 | Bromoform | 173 | 8.406 | 8.406 | (1.096) | 210580 | 50.0000 | 48.88 |
| | 67 | Isopropylbenzene | 105 | 8.560 | 8.560 | (1.116) | 904409 | 50.0000 | 43.36 |
| | 68 | 1,1,2,2-Tetrachloroethane | 83 | 8.837 | 8.837 | (0.915) | 361579 | 50.0000 | 53.24 |
| $ | 69 | 4-Bromofluorobenzene | 95 | 8.687 | 8.687 | (1.133) | 389091 | 50.0000 | 54.21 |
| * | 70 | 1,4-Dichlorobenzene-d4 | 152 | 9.662 | 9.662 | (1.000) | 426076 | 50.0000 | |
| | 71 | 1,2,3-Trichloropropane | 75 | 8.863 | 8.863 | (0.917) | 267294 | 50.0000 | 56.37(M) |
| | 73 | n-Propylbenzene | 91 | 8.908 | 8.908 | (0.922) | 1077617 | 50.0000 | 45.66 |
| | 74 | Bromobenzene | 156 | 8.803 | 8.803 | (0.911) | 313433 | 50.0000 | 44.83 |
| | 75 | 1,3,5-Trimethylbenzene | 105 | 9.066 | 9.066 | (0.938) | 822955 | 50.0000 | 47.20 |
| | 76 | 2-Chlorotoluene | 91 | 8.972 | 8.972 | (0.929) | 734290 | 50.0000 | 47.41 |
| | 77 | 4-Chlorotoluene | 91 | 9.070 | 9.070 | (0.939) | 854746 | 50.0000 | 48.41 |
| | 78 | tert-Butylbenzene | 119 | 9.336 | 9.336 | (0.966) | 629071 | 50.0000 | 44.07 |
| | 79 | 1,2,4-Trimethylbenzene | 105 | 9.377 | 9.377 | (0.971) | 860024 | 50.0000 | 46.88 |
| | 81 | sec-Butylbenzene | 105 | 9.519 | 9.519 | (0.985) | 851044 | 50.0000 | 44.81 |
| | 82 | p-Isopropyltoluene | 119 | 9.647 | 9.647 | (0.998) | 795060 | 50.0000 | 46.72 |
| | 83 | 1,3-Dichlorobenzene | 146 | 9.602 | 9.602 | (0.994) | 529980 | 50.0000 | 45.67 |
| | 84 | 1,4-Dichlorobenzene | 146 | 9.681 | 9.681 | (1.002) | 558426 | 50.0000 | 44.10 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 87 n-Butylbenzene | 91 | 9.992 | 9.992 (1.034) | 681007 | 50.0000 | 41.82 |
| 88 1,2-Dichlorobenzene | 146 | 9.992 | 9.992 (1.034) | 537387 | 50.0000 | 44.97 |

| | Compounds | QUANT SIG MASS | RT | EXP RT | REL RT | RESPONSE | AMOUNTS CAL-AMT ( ug/l) | ON-COL ( ug/l) |
|---|---|---|---|---|---|---|---|---|
| 89 | 1,2-Dibromo-3-Chloropropane | 155 | 10.651 | 10.651 | (1.102) | 63733 | 50.0000 | 58.68 |
| 90 | 1,2,4-Trichlorobenzene | 180 | 11.334 | 11.334 | (1.173) | 387579 | 50.0000 | 51.39 |
| 91 | Hexachlorobutadiene | 225 | 11.476 | 11.476 | (1.188) | 138144 | 50.0000 | 41.41 |
| 92 | Naphthalene | 128 | 11.540 | 11.540 | (1.194) | 991850 | 50.0000 | 57.80 |
| 93 | 1,2,3-Trichlorobenzene | 180 | 11.739 | 11.739 | (1.215) | 373432 | 50.0000 | 51.70 |
| M 94 | 1,2-Dichloroethylene (total) | 96 | | | | 469995 | 100.000 | (a) |
| 141 | Cyclohexane | 56 | 4.118 | 4.118 | (0.986) | 234209 | 50.0000 | 43.75 |
| 138 | Freon TF | 101 | 1.913 | 1.913 | (0.458) | 156642 | 50.0000 | 40.03(M) |
| 147 | Methylcyclohexane | 55 | 5.377 | 5.377 | (1.084) | 588077 | 50.0000 | 57.80 |
| 146 | Methyl Acetate | 43 | 2.225 | 2.225 | (0.533) | 160780 | 50.0000 | 67.03(M) |
| 148 | Tert-Butyl alcohol | 59 | 2.419 | 2.419 | (0.579) | 555698 | 1000.00 | 1505.71 |
| 149 | Isopropyl Alcohol | 45 | 2.086 | 2.086 | (0.499) | 320001 | 1000.00 | 1660.26 |

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.




Data File: \\NAHSTWS005\Target\chem\voa6.i\x230214.b\x021403.D
Date : 14-FEB-2023 11:06
Client ID: CCV
Sample Info: CCV:CCV:2:;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

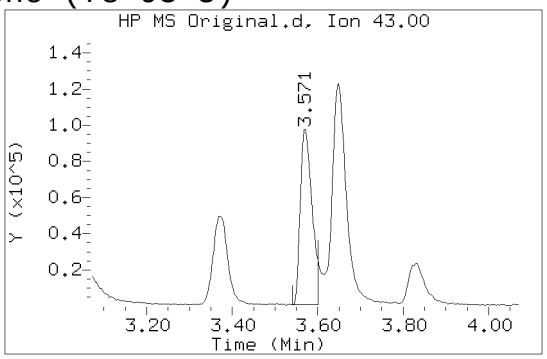
Data File : \\NAHSTWS005\Target\chem\voa6.i\X230214.b\X021403.D
Inj Date : 14-FEB-2023 11:06
InstruID : voa6.i
LabSampID : CCV

## 2-Butanone (78-93-3)

Reason Code:

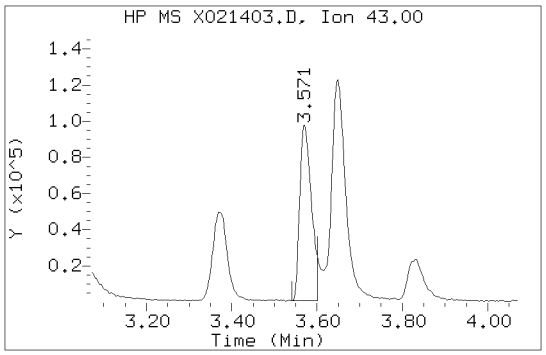
**BEFORE**

MASS
43
AREA
189526
HEIGHT
97254
21-Feb-2023
16:57
Linh
Pham



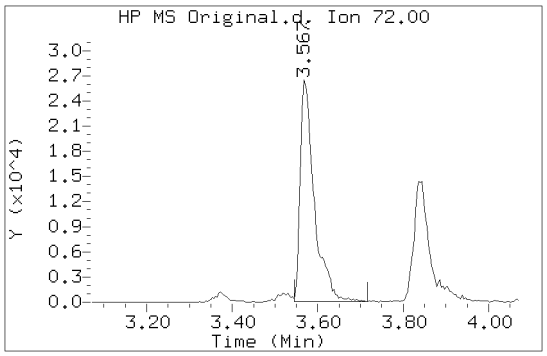

**AFTER**

MASS
43
AREA
189526
HEIGHT
97254
21-Feb-2023
16:57
Linh
Pham



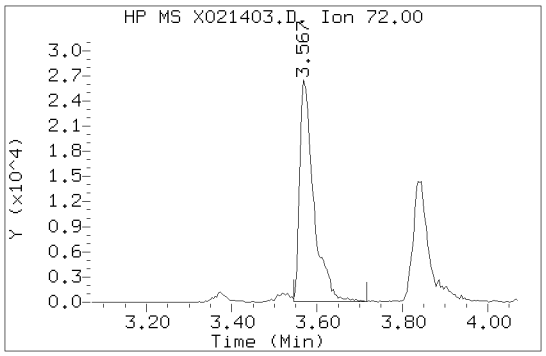

**BEFORE**

MASS
72
AREA
61385
HEIGHT
26407
21-Feb-2023
16:57
Linh
Pham




**AFTER**

MASS
72
AREA
61385
HEIGHT
26407
21-Feb-2023
16:57
Linh
Pham

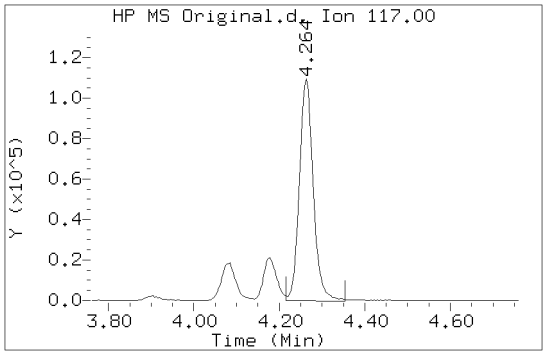



## Carbon Tetrachloride (56-23-5)

Reason Code:

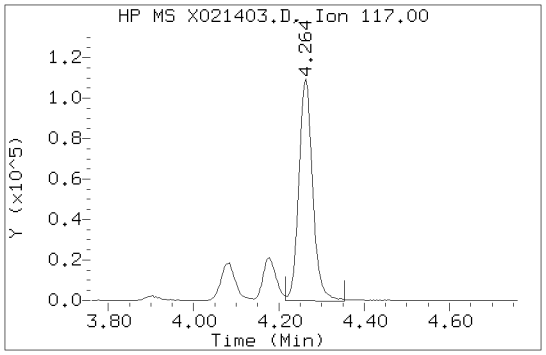
**BEFORE**

MASS
117
AREA
252461
HEIGHT
109764
21-Feb-2023
16:57
Linh
Pham



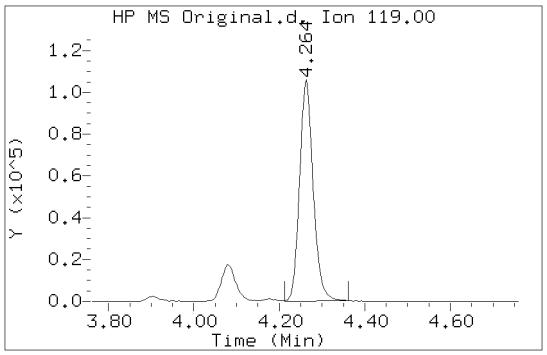

**AFTER**

MASS
117
AREA
252461
HEIGHT
109764
21-Feb-2023
16:57
Linh
Pham



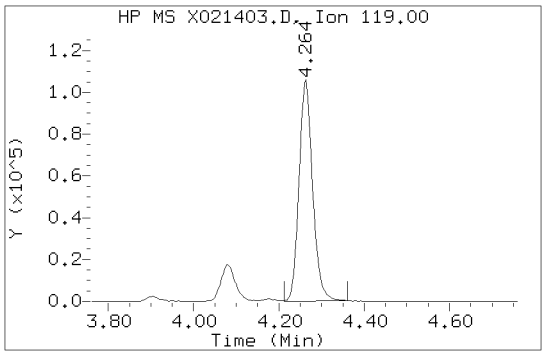

**BEFORE**

MASS
119
AREA
238296
HEIGHT
105839
21-Feb-2023
16:57
Linh
Pham




**AFTER**

MASS
119
AREA
238296
HEIGHT
105839
21-Feb-2023
16:57
Linh
Pham



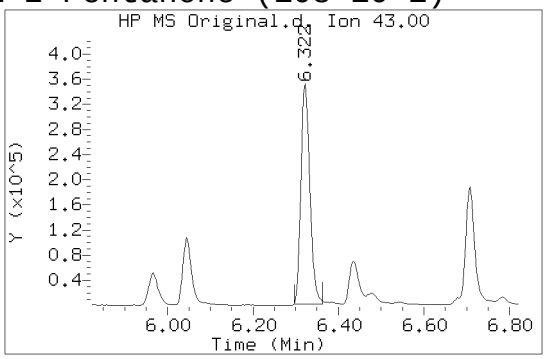
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Inj Date : 14-FEB-2023 11:06
InstruID : voa6.i
LabSampID : CCV

## 4-Methyl-2-Pentanone (108-10-1)

Reason Code:

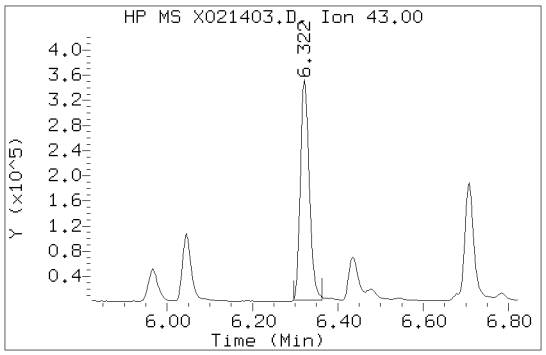
**BEFORE**

MASS
43
AREA
519743
HEIGHT
350134
21-Feb-2023
16:57
Linh
Pham



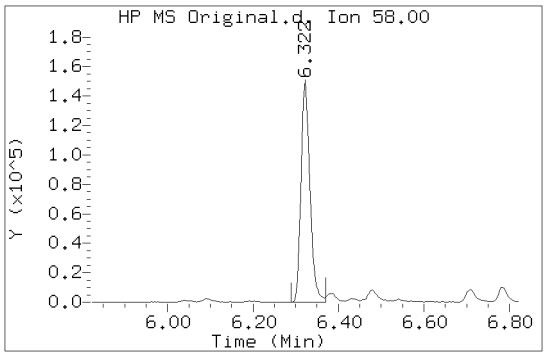

**AFTER**

MASS
43
AREA
519743
HEIGHT
350134
21-Feb-2023
16:57
Linh
Pham



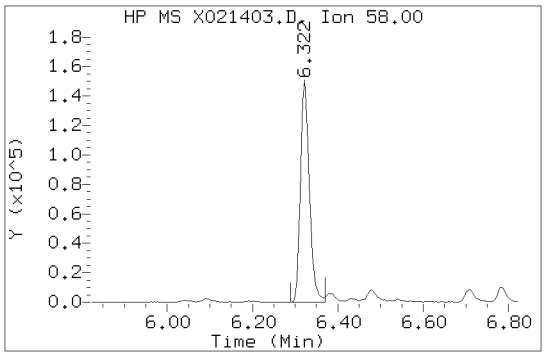

**BEFORE**

MASS
58
AREA
223326
HEIGHT
150850
21-Feb-2023
16:57
Linh
Pham



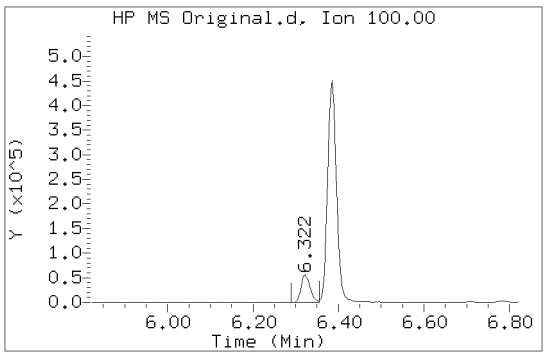

**AFTER**

MASS
58
AREA
223326
HEIGHT
150850
21-Feb-2023
16:57
Linh
Pham



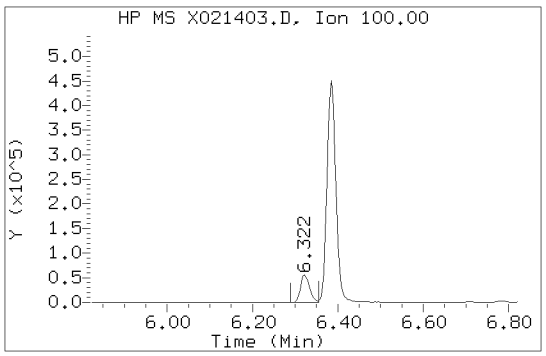

**BEFORE**

MASS
100
AREA
85272
HEIGHT
56152
21-Feb-2023
16:57
Linh
Pham




**AFTER**

MASS
100
AREA
85272
HEIGHT
56152
21-Feb-2023
16:57
Linh
Pham

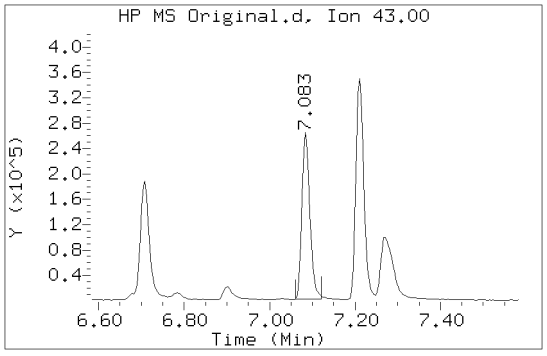



## 2-Hexanone (591-78-6)

Reason Code:

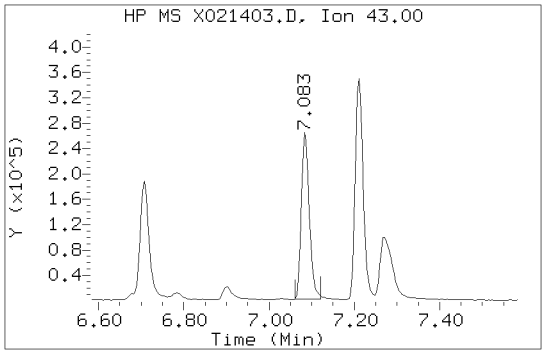
**BEFORE**

MASS
43
AREA
353730
HEIGHT
263333
21-Feb-2023
16:57
Linh
Pham




**AFTER**

MASS
43
AREA
353730
HEIGHT
263333
21-Feb-2023
16:57
Linh
Pham

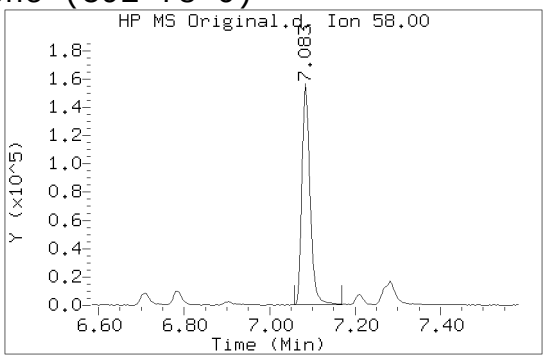


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Inj Date : 14-FEB-2023 11:06
InstruID : voa6.i
LabSampID : CCV

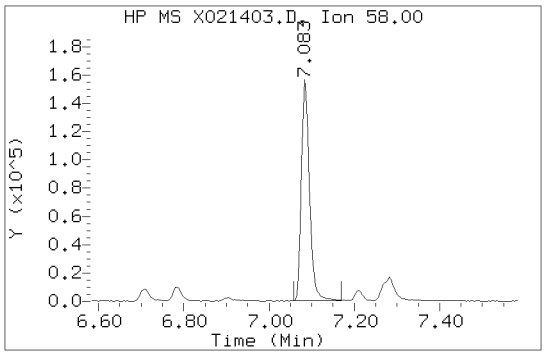
## 2-Hexanone (591-78-6)

Reason Code:

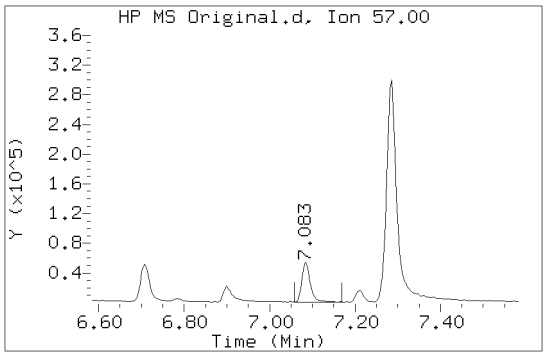
BEFORE
MASS
58
AREA
214796
HEIGHT
156442
21-Feb-2023
16:57
Linh
Pham



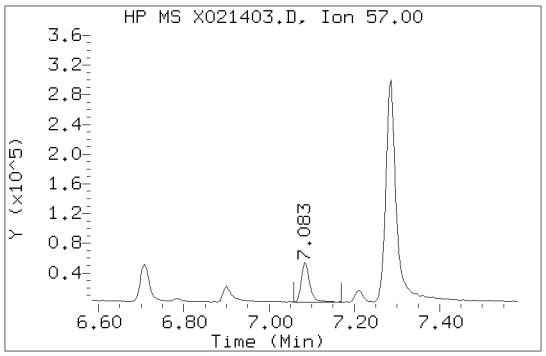

AFTER
MASS
58
AREA
214796
HEIGHT
156442
21-Feb-2023
16:57
Linh
Pham




BEFORE
MASS
57
AREA
76069
HEIGHT
53369
21-Feb-2023
16:57
Linh
Pham



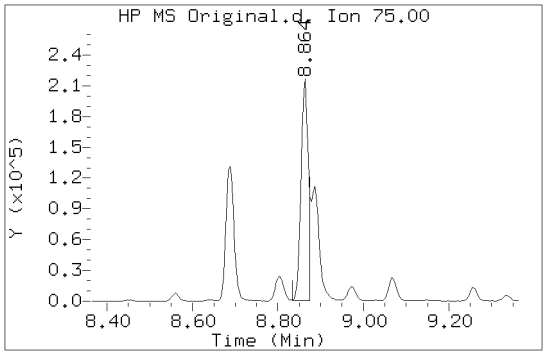

AFTER
MASS
57
AREA
76069
HEIGHT
53369
21-Feb-2023
16:57
Linh
Pham



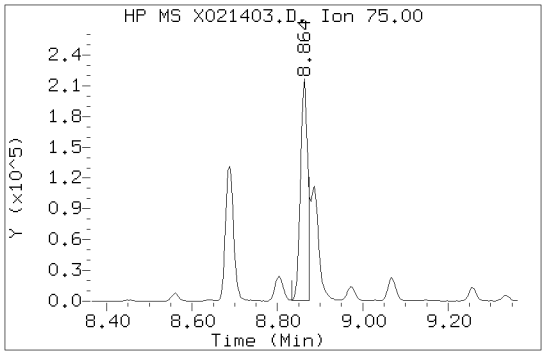

## 1,2,3-Trichloropropane (96-18-4)

Reason Code:

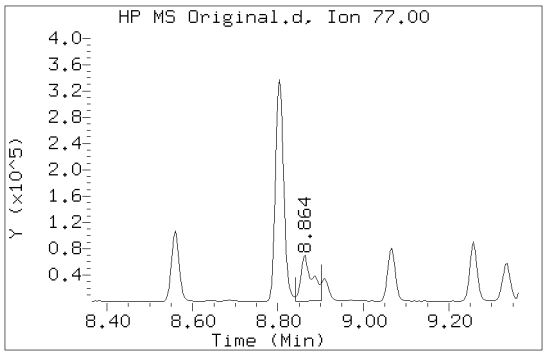
BEFORE
MASS
75
AREA
267294
HEIGHT
216328
21-Feb-2023
16:57
Linh
Pham



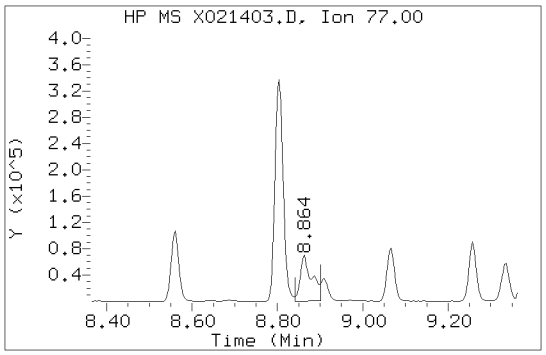

AFTER
MASS
75
AREA
267294
HEIGHT
216328
21-Feb-2023
16:57
Linh
Pham




BEFORE
MASS
77
AREA
137775
HEIGHT
69567
21-Feb-2023
16:57
Linh
Pham




AFTER
MASS
77
AREA
137775
HEIGHT
69567
21-Feb-2023
16:57
Linh
Pham

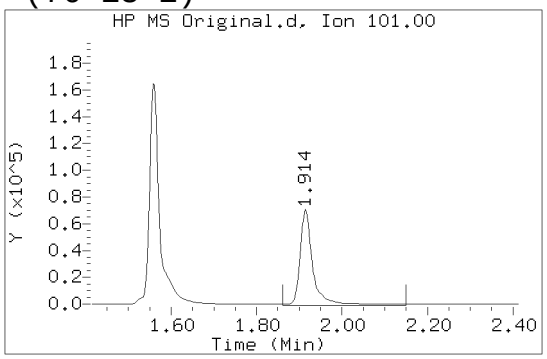


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Inj Date : 14-FEB-2023 11:06
InstruID : voa6.i
LabSampID : CCV

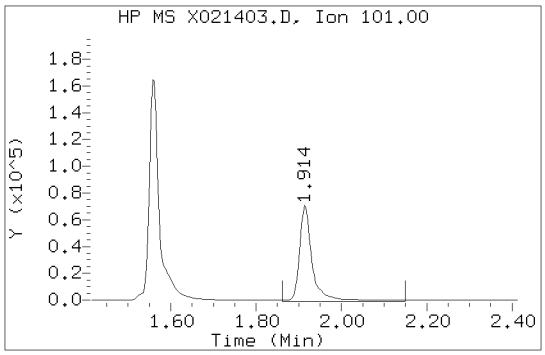
## Freon TF (76-13-1)

Reason Code:

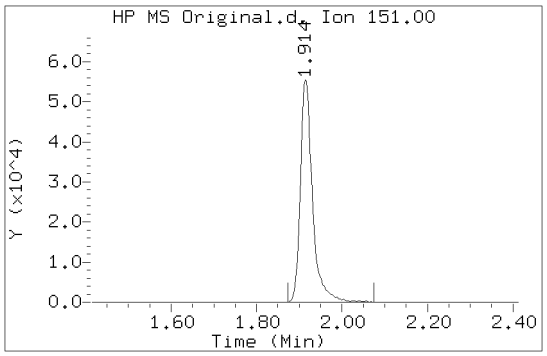
BEFORE
MASS
101
AREA
156642
HEIGHT
72009
21-Feb-2023
16:57
Linh
Pham



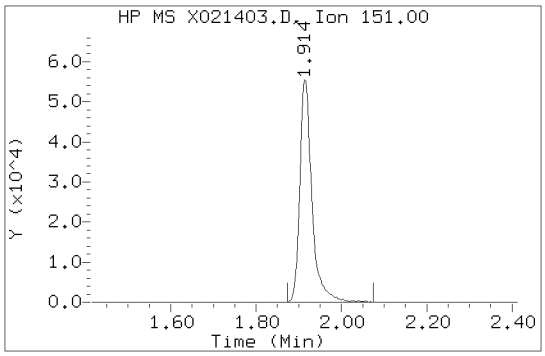

AFTER
MASS
101
AREA
156642
HEIGHT
72009
21-Feb-2023
16:57
Linh
Pham




BEFORE
MASS
151
AREA
112516
HEIGHT
55472
21-Feb-2023
16:57
Linh
Pham



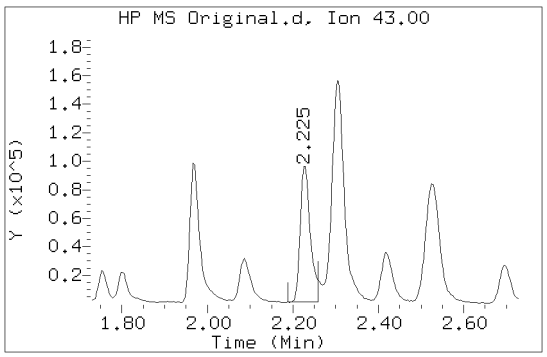

AFTER
MASS
151
AREA
112516
HEIGHT
55472
21-Feb-2023
16:57
Linh
Pham



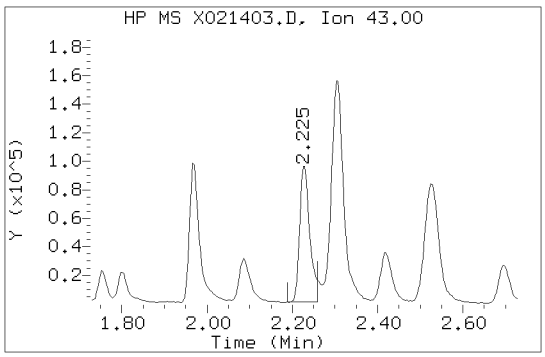

## Methyl Acetate (79-20-9)

Reason Code:

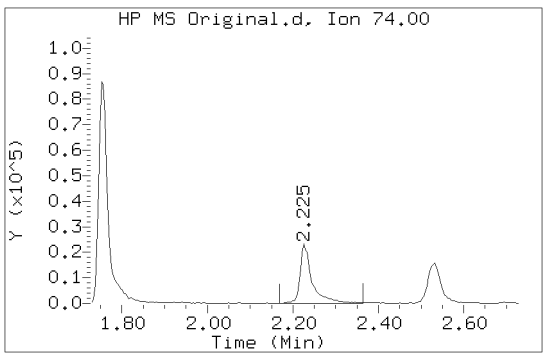
BEFORE
MASS
43
AREA
160780
HEIGHT
95398
21-Feb-2023
16:57
Linh
Pham



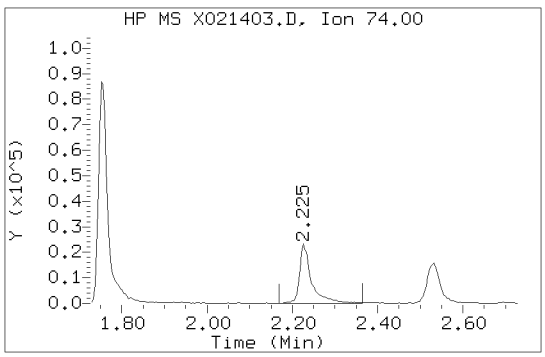

AFTER
MASS
43
AREA
160780
HEIGHT
95398
21-Feb-2023
16:57
Linh
Pham




BEFORE
MASS
74
AREA
46195
HEIGHT
23456
21-Feb-2023
16:57
Linh
Pham




AFTER
MASS
74
AREA
46195
HEIGHT
23456
21-Feb-2023
16:57
Linh
Pham



Data File: \\NAHSTWS005\Target\chem\voa6.i\X230214.b\X021404.D  Page 1
Report Date: 14-Feb-2023 20:53

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X230214.b\X021404.D
Lab Smp Id: CCB  Client Smp ID: CCB
Inj Date  : 14-FEB-2023 11:27
Operator  : PC  Inst ID: voa6.i
Smp Info  : CCB;CCB;;;
Misc Info : V6;WATER;0;1;
Comment   :
Method    : \\nahstws005\Target\chem\voa6.i\X230214.b\8260W.m
Meth Date : 14-Feb-2023 12:09 voa6.i  Quant Type: ISTD
Cal Date  : 16-DEC-2022 14:04  Cal File: X121608.D
Als bottle: 4
Dil Factor: 1.00000
Integrator: HP RTE  Compound Sublist: 8260_GB.sub
Target Version:  4.14
Processing Host: NAHSTWS005

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

| Name | Value | Description |
|---|---|---|
| DF | 1.000 | Dilution Factor |
| Uf | 5.000 | ng unit correction factor |
| Vo | 5.000 | sample purged |
| Cpnd Variable | | Local Compound Variable |

| Compounds | QUANT SIG MASS | RT | EXP RT | REL RT | RESPONSE | CONCENTRATIONS ON-COLUMN ( ug/l) | FINAL ( ug/l) |
|---|---|---|---|---|---|---|---|
| * 1 Pentafluorobenzene | 168 | 4.178 | 4.178 | (1.000) | 615386 | 50.0000 | |
| $ 30 Dibromofluoromethane | 113 | 4.095 | 4.095 | (0.980) | 274516 | 46.4461 | 46.44 |
| $ 35 1,2-Dichloroethane-d4 | 65 | 4.470 | 4.470 | (1.070) | 306398 | 49.1324 | 49.13 |
| * 36 1,4-Difluorobenzene | 114 | 4.961 | 4.965 | (1.000) | 905665 | 50.0000 | |
| * 47 Chlorobenzene-d5 | 117 | 7.668 | 7.668 | (1.000) | 810596 | 50.0000 | |
| $ 48 Toluene-d8 | 98 | 6.386 | 6.385 | (0.833) | 1075568 | 53.6968 | 53.69 |
| $ 69 4-Bromofluorobenzene | 95 | 8.687 | 8.687 | (1.133) | 393359 | 52.5351 | 52.53 |
| * 70 1,4-Dichlorobenzene-d4 | 152 | 9.662 | 9.662 | (1.000) | 411759 | 50.0000 | |

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X230214.b\X021405.D
Lab Smp Id: VLCSW-230214 Client Smp ID: VLCSW-230214
Inj Date : 14-FEB-2023 11:48
Operator : PC Inst ID: voa6.i
Smp Info : VLCSW-230214;VLCSW-230214;3;;LCS
Misc Info : V6;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X230214.b\8260W.m
Meth Date : 21-Feb-2023 16:57 voa6.i Quant Type: ISTD
Cal Date : 16-DEC-2022 14:04 Cal File: X121608.D
Als bottle: 5 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260_GB.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

| Name | Value | Description |
|---|---|---|
| DF | 1.000 | Dilution Factor |
| Uf | 5.000 | ng unit correction factor |
| Vo | 5.000 | sample purged |
| Cpnd Variable | | Local Compound Variable |

| | Compounds | QUANT SIG MASS | RT | EXP RT | REL RT | RESPONSE | CONCENTRATIONS ON-COLUMN ( ug/l) | FINAL ( ug/l) |
|---|---|---|---|---|---|---|---|---|
| * 1 | Pentafluorobenzene | 168 | 4.178 | 4.178 | (1.000) | 539691 | 50.0000 | |
| 135 | 1,4-Dioxane | 88 | 5.598 | 5.598 | (1.340) | 26730 | 541.824 | 541.82 |
| 140 | 1,3-Butadiene | 54 | 1.164 | 1.164 | (0.279) | 70057 | 18.9139 | 18.91 |
| 2 | Dichlorodifluoromethane | 85 | 0.972 | 0.973 | (0.233) | 75661 | 20.2799 | 20.27 |
| 3 | Chloromethane | 50 | 1.077 | 1.077 | (0.258) | 131144 | 27.8814 | 27.88 |
| 5 | Vinyl Chloride | 62 | 1.141 | 1.141 | (0.273) | 95373 | 20.2297 | 20.22 |
| 6 | Bromomethane | 94 | 1.340 | 1.340 | (0.321) | 67490 | 20.0232 | 20.02 |
| 7 | Chloroethane | 64 | 1.404 | 1.404 | (0.336) | 65304 | 19.9010 | 19.90 |
| 8 | Trichlorofluoromethane | 101 | 1.561 | 1.557 | (0.374) | 114631 | 17.3750 | 17.37 |
| 9 | Acrolein | 56 | 1.445 | 1.445 | (0.346) | 11072 | 31.9730 | 31.97 |
| 10 | Acetone | 43 | 1.970 | 1.966 | (0.472) | 65528 | 43.2526 | 43.25 |
| 11 | 1,1-Dichloroethene | 96 | 1.913 | 1.913 | (0.458) | 64836 | 15.8290 | 15.82 |
| 15 | Iodomethane | 142 | 2.026 | 2.026 | (0.485) | 166609 | 34.0147 | 34.01 |
| 16 | Acrylonitrile | 53 | 2.532 | 2.528 | (0.606) | 74119 | 53.3535 | 53.35 |
| 17 | Methylene Chloride | 84 | 2.303 | 2.300 | (0.551) | 113074 | 20.1257 | 20.12 |
| 18 | Methyl tert-butyl ether | 73 | 2.528 | 2.528 | (0.605) | 307109 | 22.9065 | 22.90 |
| 19 | Carbon Disulfide | 76 | 2.071 | 2.067 | (0.496) | 453040 | 42.2744 | 42.27 |
| 20 | trans-1,2-Dichloroethene | 96 | 2.528 | 2.528 | (0.605) | 89752 | 19.5786 | 19.57 |
| 21 | Vinyl Acetate | 43 | 2.997 | 2.993 | (0.717) | 618808 | 52.5785 | 52.57 |
| 22 | 1,1-Dichloroethane | 63 | 2.922 | 2.918 | (0.699) | 170418 | 21.1823 | 21.18 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 24 | 2-Butanone | 43 | 3.578 | 3.570 (0.856) | 81179 | 52.0354 | 52.03 |
| 26 | 2,2-Dichloropropane | 77 | 3.507 | 3.507 (0.839) | 140906 | 20.6277 | 20.62 |

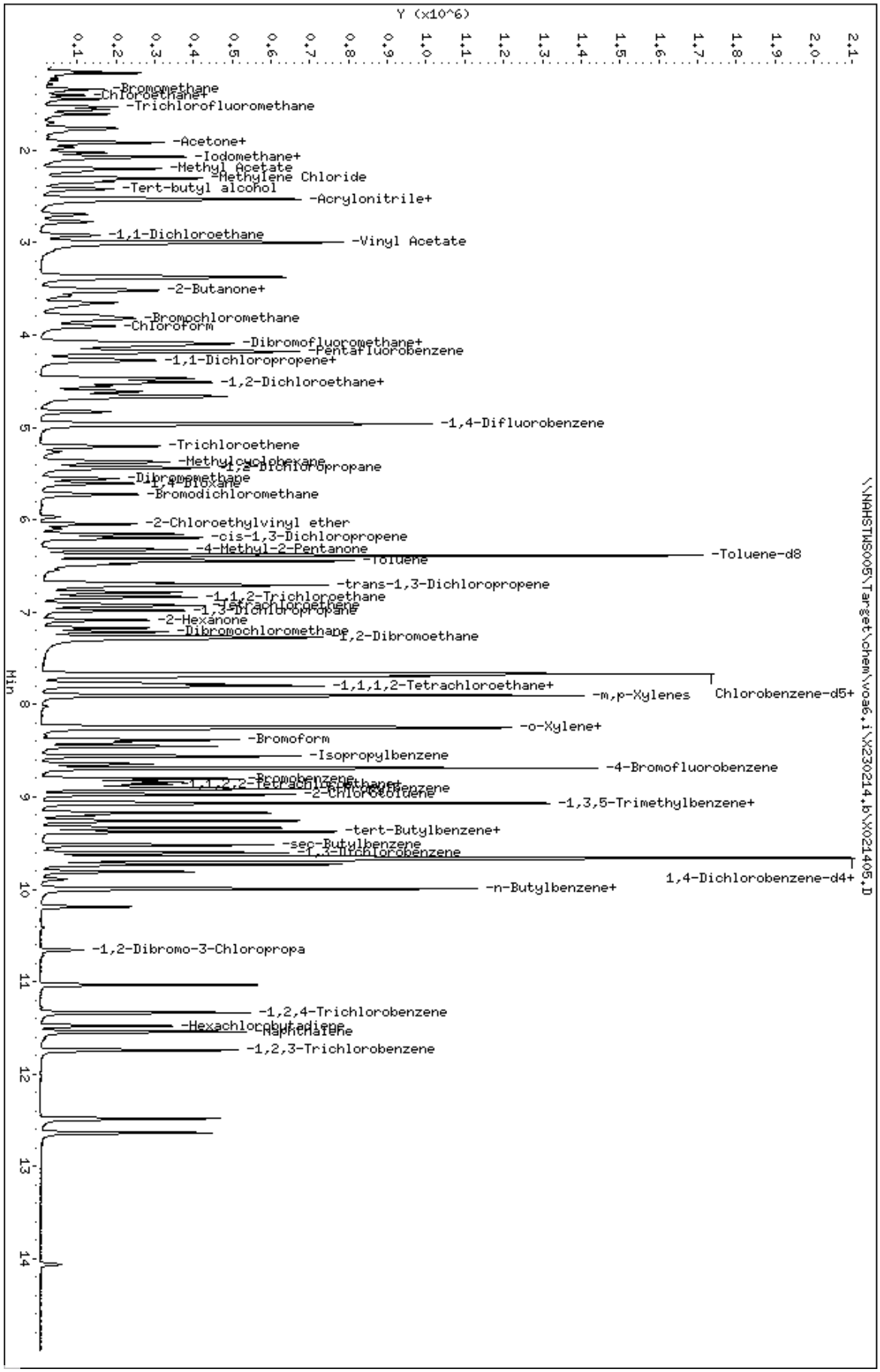
| | Compounds | QUANT SIG MASS | RT | EXP RT | REL RT | RESPONSE | CONCENTRATIONS ON-COLUMN ( ug/l) | FINAL ( ug/l) |
|---|---|---|---|---|---|---|---|---|
| | 27 cis-1,2-Dichloroethene | 96 | 3.522 | 3.522 | (0.843) | 108096 | 19.3759 | 19.37 |
| | 28 Chloroform | 83 | 3.904 | 3.904 | (0.935) | 179330 | 19.8873 | 19.88 |
| | 29 Bromochloromethane | 128 | 3.795 | 3.788 | (0.908) | 56710 | 18.5657 | 18.56 |
| $ | 30 Dibromofluoromethane | 113 | 4.095 | 4.095 | (0.980) | 260371 | 50.2451 | 50.24 |
| | 31 1,1,1-Trichloroethane | 97 | 4.080 | 4.076 | (0.977) | 133457 | 18.6538 | 18.65 |
| | 32 1,1-Dichloropropene | 75 | 4.279 | 4.279 | (0.862) | 115739 | 19.5852 | 19.58 |
| | 33 1,2-Dichloroethane | 62 | 4.556 | 4.552 | (0.918) | 147133 | 21.5737 | 21.57 |
| | 34 Carbon Tetrachloride | 117 | 4.264 | 4.264 | (0.859) | 107917 | 17.1011 | 17.10 |
| $ | 35 1,2-Dichloroethane-d4 | 65 | 4.470 | 4.470 | (1.070) | 310216 | 56.6797 | 56.67 |
| * | 36 1,4-Difluorobenzene | 114 | 4.965 | 4.961 | (1.000) | 832385 | 50.0000 | |
| | 37 Benzene | 78 | 4.511 | 4.507 | (0.909) | 401514 | 20.1998 | 20.19 |
| | 38 Trichloroethene | 130 | 5.205 | 5.205 | (1.048) | 104411 | 18.5198 | 18.51 |
| | 39 Bromodichloromethane | 83 | 5.726 | 5.722 | (1.153) | 146085 | 19.5831 | 19.58 |
| | 41 2-Chloroethylvinyl ether | 63 | 6.048 | 6.044 | (1.218) | 101070 | 47.6237 | 47.62 |
| | 42 1,2-Dichloropropane | 63 | 5.433 | 5.433 | (1.094) | 109972 | 20.7987 | 20.79 |
| | 44 Dibromomethane | 93 | 5.550 | 5.550 | (1.118) | 70341 | 19.5725 | 19.57 |
| | 45 4-Methyl-2-Pentanone | 43 | 6.322 | 6.322 | (0.824) | 221142 | 53.4267 | 53.42 |
| | 46 cis-1,3-Dichloropropene | 75 | 6.153 | 6.153 | (1.239) | 188099 | 21.4703 | 21.47 |
| * | 47 Chlorobenzene-d5 | 117 | 7.668 | 7.668 | (1.000) | 774399 | 50.0000 | |
| $ | 48 Toluene-d8 | 98 | 6.385 | 6.386 | (0.833) | 982609 | 51.3489 | 51.34 |
| | 50 Toluene | 91 | 6.445 | 6.446 | (0.841) | 417362 | 19.4987 | 19.49 |
| | 51 trans-1,3-Dichloropropene | 75 | 6.682 | 6.678 | (1.346) | 159689 | 21.9640 | 21.96 |
| | 52 2-Hexanone | 43 | 7.086 | 7.083 | (0.924) | 149010 | 52.9126 | 52.91 |
| | 53 1,1,2-Trichloroethane | 83 | 6.839 | 6.835 | (0.892) | 88886 | 20.6994 | 20.69 |
| | 54 1,3-Dichloropropane | 76 | 6.982 | 6.978 | (0.911) | 181416 | 21.4637 | 21.46 |
| | 55 Dibromochloromethane | 129 | 7.173 | 7.173 | (0.935) | 121300 | 19.5719 | 19.57 |
| | 56 Tetrachloroethene | 164 | 6.925 | 6.925 | (0.903) | 74888 | 16.9097 | 16.90 |
| | 57 1,2-Dibromoethane | 107 | 7.259 | 7.259 | (0.947) | 111266 | 20.7240 | 20.72 |
| | 58 1-Chlorohexane | 55 | 7.694 | 7.694 | (1.550) | 72462 | 18.0135 | 18.01 |
| | 59 Chlorobenzene | 112 | 7.694 | 7.690 | (1.003) | 286069 | 18.8424 | 18.84 |
| | 60 1,1,1,2-Tetrachloroethane | 131 | 7.772 | 7.773 | (1.014) | 107705 | 19.0628 | 19.06 |
| | 61 Ethylbenzene | 106 | 7.799 | 7.799 | (1.017) | 134268 | 18.7745 | 18.77 |
| | 62 m,p-Xylenes | 106 | 7.904 | 7.904 | (1.031) | 342225 | 37.1208 | 37.12 |
| | 63 o-Xylene | 106 | 8.241 | 8.241 | (1.075) | 171976 | 18.8999 | 18.89 |
| | 64 Styrene | 104 | 8.260 | 8.256 | (1.077) | 300173 | 19.6815 | 19.68 |
| | 66 Bromoform | 173 | 8.410 | 8.406 | (1.097) | 84161 | 19.6014 | 19.60 |
| | 67 Isopropylbenzene | 105 | 8.560 | 8.560 | (1.116) | 371756 | 17.8827 | 17.88 |
| | 68 1,1,2,2-Tetrachloroethane | 83 | 8.837 | 8.837 | (0.915) | 148020 | 21.8428 | 21.84 |
| $ | 69 4-Bromofluorobenzene | 95 | 8.687 | 8.687 | (1.133) | 388141 | 54.2592 | 54.25 |
| * | 70 1,4-Dichlorobenzene-d4 | 152 | 9.662 | 9.662 | (1.000) | 425171 | 50.0000 | |
| | 71 1,2,3-Trichloropropane | 75 | 8.863 | 8.863 | (0.917) | 113485 | 23.9879 | 23.98(M) |
| | 73 n-Propylbenzene | 91 | 8.912 | 8.908 | (0.922) | 435362 | 18.4861 | 18.48 |
| | 74 Bromobenzene | 156 | 8.803 | 8.803 | (0.911) | 130097 | 18.6504 | 18.65 |
| | 75 1,3,5-Trimethylbenzene | 105 | 9.066 | 9.066 | (0.938) | 333974 | 19.1965 | 19.19 |
| | 76 2-Chlorotoluene | 91 | 8.972 | 8.972 | (0.929) | 310177 | 20.0707 | 20.07 |
| | 77 4-Chlorotoluene | 91 | 9.070 | 9.070 | (0.939) | 354727 | 20.1348 | 20.13 |
| | 78 tert-Butylbenzene | 119 | 9.336 | 9.336 | (0.966) | 252014 | 17.6962 | 17.69 |
| | 79 1,2,4-Trimethylbenzene | 105 | 9.377 | 9.377 | (0.971) | 350469 | 19.1452 | 19.14 |
| | 81 sec-Butylbenzene | 105 | 9.519 | 9.519 | (0.985) | 342690 | 18.0855 | 18.08 |
| | 82 p-Isopropyltoluene | 119 | 9.647 | 9.647 | (0.998) | 315806 | 18.5992 | 18.59 |
| | 83 1,3-Dichlorobenzene | 146 | 9.606 | 9.602 | (0.994) | 218285 | 18.8537 | 18.85 |
| | 84 1,4-Dichlorobenzene | 146 | 9.681 | 9.681 | (1.002) | 228021 | 18.0481 | 18.04 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 87 | n-Butylbenzene | 91 | 9.995 | 9.992 (1.035) | 270956 | 17.7456 | 17.74 |
| 88 | 1,2-Dichlorobenzene | 146 | 9.992 | 9.992 (1.034) | 218999 | 18.3663 | 18.36 |

| | Compounds | QUANT SIG MASS | RT | EXP RT | REL RT | RESPONSE | CONCENTRATIONS ON-COLUMN ( ug/l) | CONCENTRATIONS FINAL ( ug/l) |
|---|---|---|---|---|---|---|---|---|
| | 89 1,2-Dibromo-3-Chloropropane | 155 | 10.659 | 10.651 | (1.103) | 24770 | 22.9129 | 22.91 |
| | 90 1,2,4-Trichlorobenzene | 180 | 11.337 | 11.334 | (1.173) | 155876 | 20.7143 | 20.71 |
| | 91 Hexachlorobutadiene | 225 | 11.480 | 11.476 | (1.188) | 58375 | 17.6055 | 17.60 |
| | 92 Naphthalene | 128 | 11.544 | 11.540 | (1.195) | 389211 | 22.7325 | 22.73 |
| | 93 1,2,3-Trichlorobenzene | 180 | 11.742 | 11.739 | (1.215) | 151011 | 20.9532 | 20.95 |
| M | 94 1,2-Dichloroethylene (total) | 96 | | | | 197848 | 38.9546 | 38.95 |
| M | 95 Xylenes (total) | 106 | | | | 514201 | 56.0207 | 56.02 |
| | 141 Cyclohexane | 56 | 4.121 | 4.118 | (0.987) | 103978 | 19.8926 | 19.89 |
| | 138 Freon TF | 101 | 1.913 | 1.913 | (0.458) | 55555 | 14.0231 | 14.02 |
| | 147 Methylcyclohexane | 55 | 5.377 | 5.377 | (1.083) | 221517 | 21.7406 | 21.74 |
| | 146 Methyl Acetate | 43 | 2.228 | 2.225 | (0.533) | 70413 | 28.9946 | 28.99 |
| | 148 Tert-Butyl alcohol | 59 | 2.419 | 2.419 | (0.579) | 218743 | 585.345 | 585.34 |
| | 149 Isopropyl Alcohol | 45 | 2.086 | 2.086 | (0.499) | 126735 | 649.377 | 649.37 |

QC Flag Legend

M - Compound response manually integrated.




Data File: \\NAHSTWS005\Target\chem\voa6.i\X230214.b\X021405.D
Date : 14-FEB-2023 11:48
Client ID: VLCSW-230214
Sample Info: VLCSW-230214;VLCSW-230214;3;;LCS
Purge Volume: 5.0
Column phase: DB624

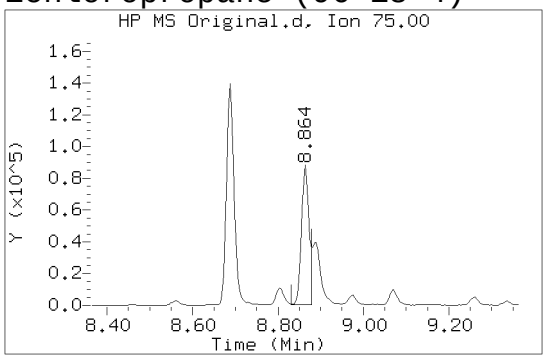
Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File : \\NAHSTWS005\Target\chem\voa6.i\X230214.b\X021405.D
Inj Date : 14-FEB-2023 11:48
InstruID : voa6.i
LabSampID : VLCSW-230214

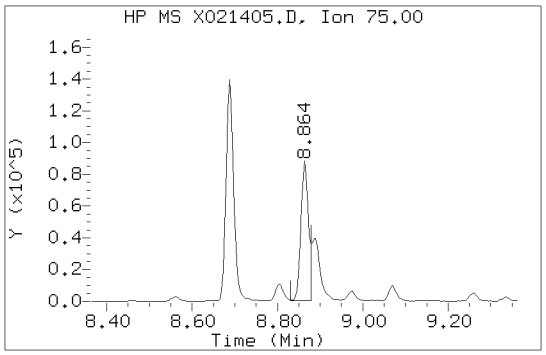
## 1,2,3-Trichloropropane (96-18-4)

Reason Code:

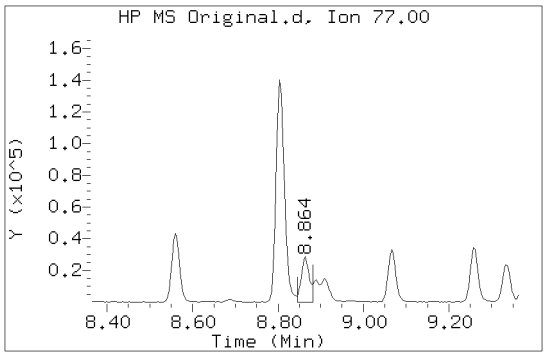
BEFORE
MASS
75
AREA
113485
HEIGHT
88276
21-Feb-2023
16:57
Linh
Pham



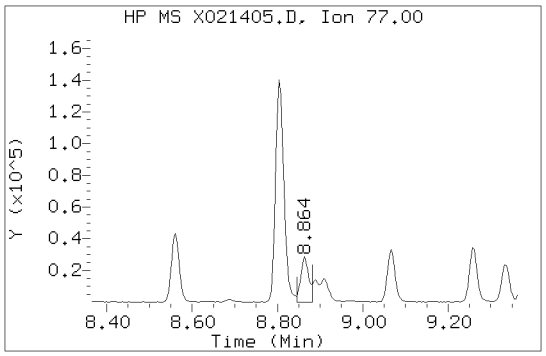

AFTER
MASS
75
AREA
113485
HEIGHT
88276
21-Feb-2023
16:57
Linh
Pham




BEFORE
MASS
77
AREA
40368
HEIGHT
28797
21-Feb-2023
16:57
Linh
Pham




AFTER
MASS
77
AREA
40368
HEIGHT
28797
21-Feb-2023
16:57
Linh
Pham



Data File: \\NAHSTWS005\Target\chem\voa6.i\X230214.b\X021407.D  Page 1
Report Date: 21-Feb-2023 16:57

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X230214.b\X021407.D
Lab Smp Id: VBLKW-230214  Client Smp ID: VBLKW-230214
Inj Date  : 14-FEB-2023 12:30
Operator  : PC  Inst ID: voa6.i
Smp Info  : VBLKW-230214;VBLKW-230214;3;;BLANK
Misc Info : V6;WATER;0;1;
Comment   :
Method    : \\NAHSTWS005\Target\chem\voa6.i\X230214.b\8260W.m
Meth Date : 21-Feb-2023 16:57 voa6.i  Quant Type: ISTD
Cal Date  : 16-DEC-2022 14:04  Cal File: X121608.D
Als bottle: 7  QC Sample: BLANK
Dil Factor: 1.00000
Integrator: HP RTE  Compound Sublist: 8260_GB.sub
Target Version:  4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

| Name | Value | Description |
|---|---|---|
| DF | 1.000 | Dilution Factor |
| Uf | 5.000 | ng unit correction factor |
| Vo | 5.000 | sample purged |
| Cpnd Variable | | Local Compound Variable |

| Compounds | QUANT SIG MASS | RT | EXP RT | REL RT | RESPONSE | CONCENTRATIONS ON-COLUMN ( ug/l) | FINAL ( ug/l) |
|---|---|---|---|---|---|---|---|
| * 1 Pentafluorobenzene | 168 | 4.178 | 4.178 | (1.000) | 646030 | 50.0000 | |
| $ 30 Dibromofluoromethane | 113 | 4.095 | 4.095 | (0.980) | 294754 | 47.5085 | 47.50 |
| $ 35 1,2-Dichloroethane-d4 | 65 | 4.466 | 4.470 | (1.069) | 331713 | 50.6602 | 50.66 |
| * 36 1,4-Difluorobenzene | 114 | 4.965 | 4.961 | (1.000) | 955124 | 50.0000 | |
| * 47 Chlorobenzene-d5 | 117 | 7.668 | 7.668 | (1.000) | 853715 | 50.0000 | |
| $ 48 Toluene-d8 | 98 | 6.386 | 6.386 | (0.833) | 1134754 | 53.7903 | 53.79 |
| $ 69 4-Bromofluorobenzene | 95 | 8.687 | 8.687 | (1.133) | 421459 | 53.4440 | 53.44 |
| * 70 1,4-Dichlorobenzene-d4 | 152 | 9.662 | 9.662 | (1.000) | 432586 | 50.0000 | |

01255557

Data File: \\NAHSTWS005\Target\chem\voa6.i\X230214.b\X021407.D



Date : 14-FEB-2023 12:30

Client ID: VBLKW-230214

Instrument: voa6.i

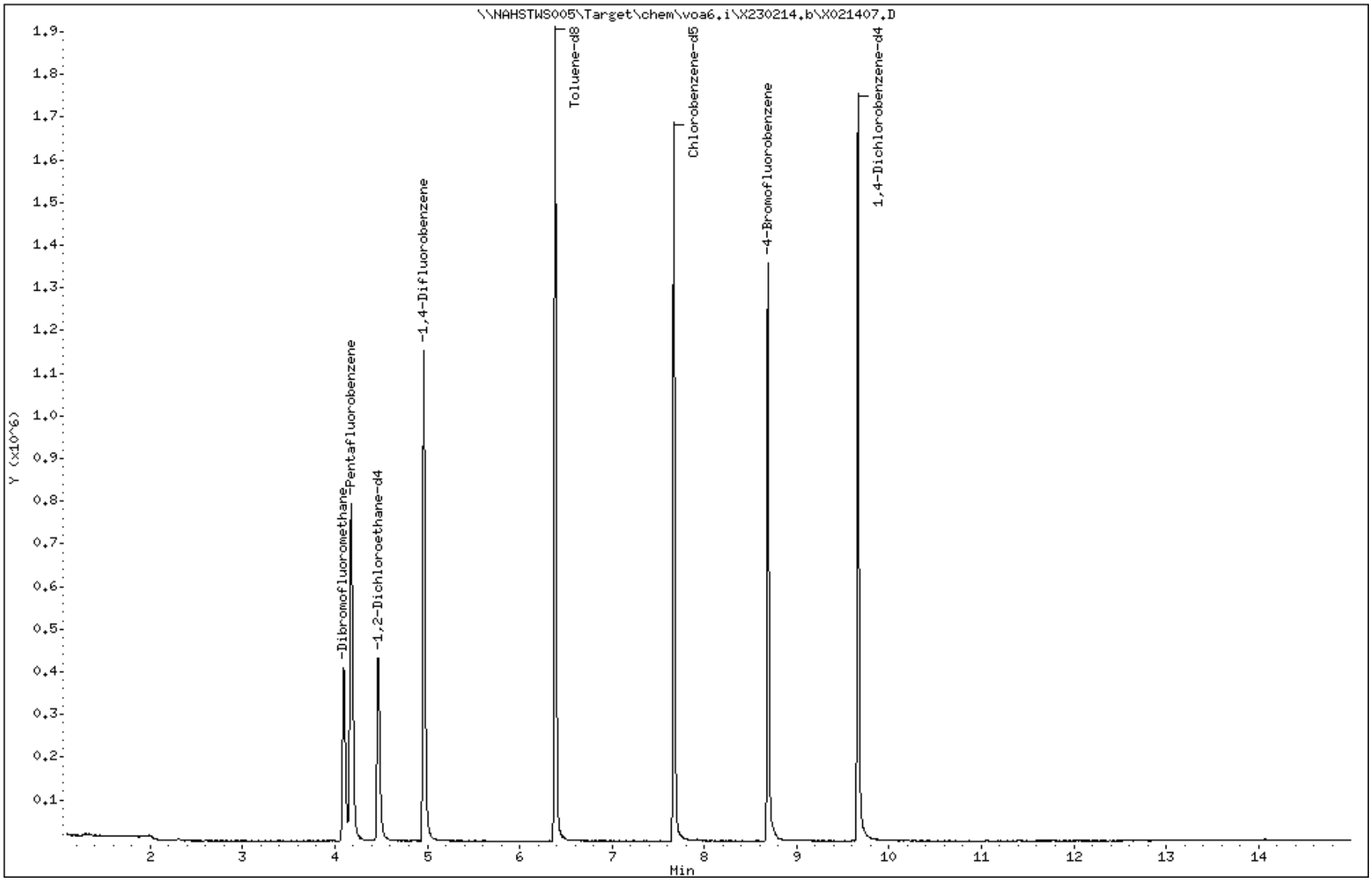
Sample Info: VBLKW-230214;VBLKW-230214;3;;BLANK

Purge Volume: 5.0

Operator: PC

Column phase: DB624

Column diameter: 0.18



Data File : \\NAHSTWS005\Target\chem\voa6.i\X230214.b\X021407.D
Inj Date  : 14-FEB-2023 12:30
InstruID  : voa6.i
LabSampID : VBLKW-230214

NO MANUAL INTEGRATIONS

Data File: \\NAHSTWS005\Target\chem\voa6.i\X230214.b\X021413.D  Page 1
Report Date: 21-Feb-2023 16:57

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X230214.b\X021413.D
Lab Smp Id: HS23020265-01  Client Smp ID: HS23020265-01
Inj Date  : 14-FEB-2023 14:36
Operator  : PC  Inst ID: voa6.i
Smp Info  : HS23020265-01;HS23020265-01;;;
Misc Info : V6;WATER;0;5;
Comment   :
Method    : \\NAHSTWS005\Target\chem\voa6.i\X230214.b\8260W.m
Meth Date : 21-Feb-2023 16:57 voa6.i  Quant Type: ISTD
Cal Date  : 16-DEC-2022 14:04  Cal File: X121608.D
Als bottle: 13
Dil Factor: 5.00000
Integrator: HP RTE  Compound Sublist: 8260_GB.sub
Target Version:  4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

| Name | Value | Description |
|---|---|---|
| DF | 5.000 | Dilution Factor |
| Uf | 5.000 | ng unit correction factor |
| Vo | 5.000 | sample purged |
| Cpnd Variable | | Local Compound Variable |

| | Compounds | QUANT SIG MASS | RT | EXP RT | REL RT | RESPONSE | CONCENTRATIONS ON-COLUMN ( ug/l) | FINAL ( ug/l) |
|---|---|---|---|---|---|---|---|---|
| * | 1 Pentafluorobenzene | 168 | 4.177 | 4.178 | (1.000) | 603150 | 50.0000 | |
| | 5 Vinyl Chloride | 62 | 1.145 | 1.141 | (0.274) | 7830 | 1.48609 | 7.43(a) |
| | 20 trans-1,2-Dichloroethene | 96 | 2.539 | 2.528 | (0.608) | 4803 | 0.93750 | 4.68(a) |
| | 27 cis-1,2-Dichloroethene | 96 | 3.521 | 3.522 | (0.843) | 243783 | 39.1000 | 195.49 |
| $ | 30 Dibromofluoromethane | 113 | 4.095 | 4.095 | (0.980) | 278016 | 47.9981 | 47.99 |
| $ | 35 1,2-Dichloroethane-d4 | 65 | 4.466 | 4.470 | (1.069) | 310479 | 50.7876 | 50.78 |
| * | 36 1,4-Difluorobenzene | 114 | 4.965 | 4.961 | (1.000) | 893893 | 50.0000 | |
| | 38 Trichloroethene | 130 | 5.208 | 5.205 | (1.049) | 65994 | 10.9002 | 54.50 |
| * | 47 Chlorobenzene-d5 | 117 | 7.667 | 7.668 | (1.000) | 792677 | 50.0000 | |
| $ | 48 Toluene-d8 | 98 | 6.385 | 6.386 | (0.833) | 1062676 | 54.2525 | 54.25 |
| $ | 69 4-Bromofluorobenzene | 95 | 8.687 | 8.687 | (1.133) | 397085 | 54.2295 | 54.22 |
| * | 70 1,4-Dichlorobenzene-d4 | 152 | 9.662 | 9.662 | (1.000) | 414668 | 50.0000 | |
| M | 94 1,2-Dichloroethylene (total) | 96 | | | | 248586 | 40.0375 | 200.18 |

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).

01255560

Data File: \\NAHSTWS005\Target\chem\voa6.i\X230214.b\X021413.D



Date : 14-FEB-2023 14:36

Client ID: HS23020265-01

Instrument: voa6.i

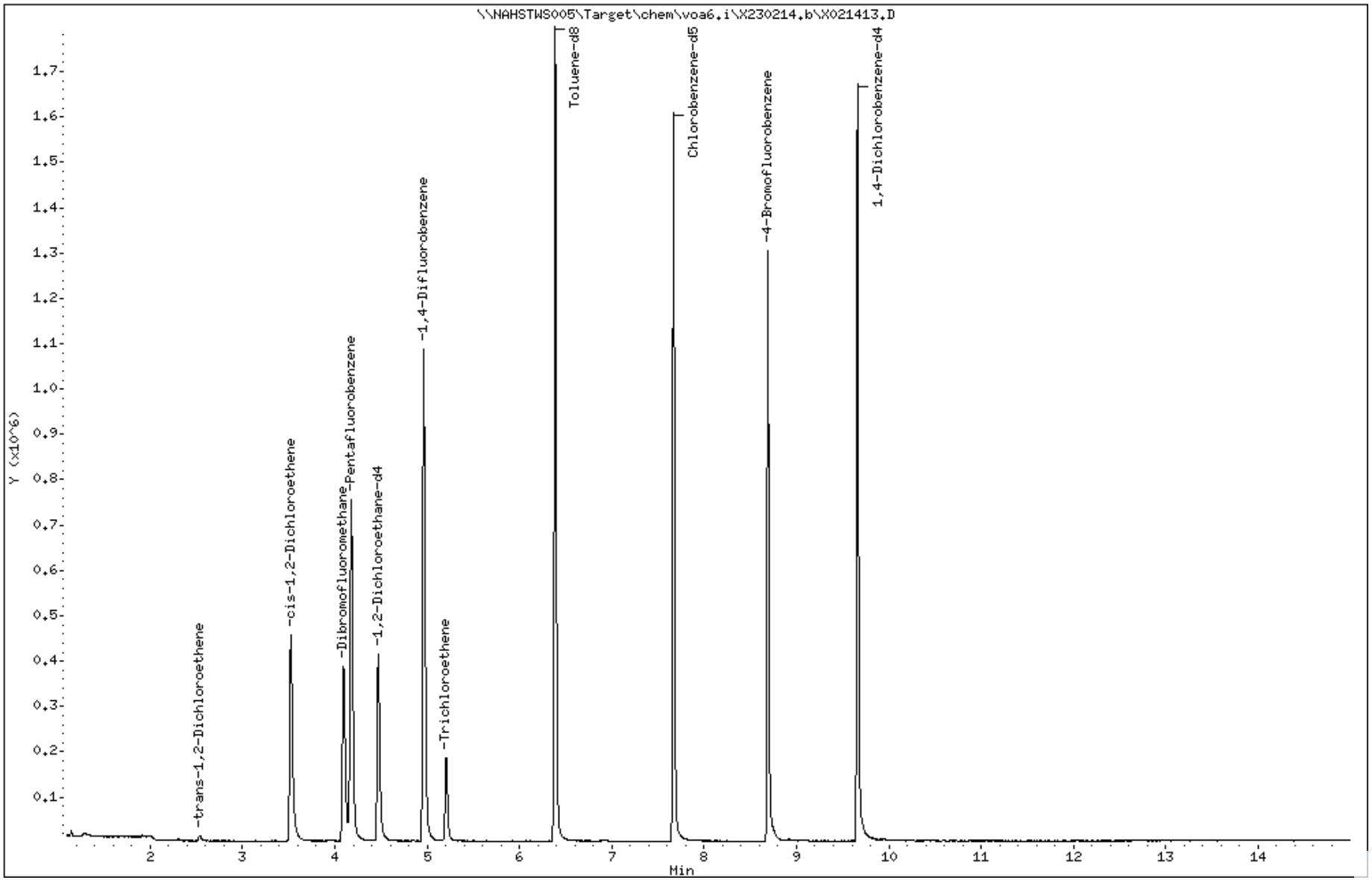
Sample Info: HS23020265-01;HS23020265-01;;;

Purge Volume: 5.0

Operator: PC

Column phase: DB624

Column diameter: 0.18



Data File: \\NAHSTWS005\Target\chem\voa6.i\X230214.b\X021413.D

Date : 14-FEB-2023 14:36

Client ID: HS23020265-01

Instrument: voa6.i

Sample Info: HS23020265-01;HS23020265-01;;;

Purge Volume: 5.0

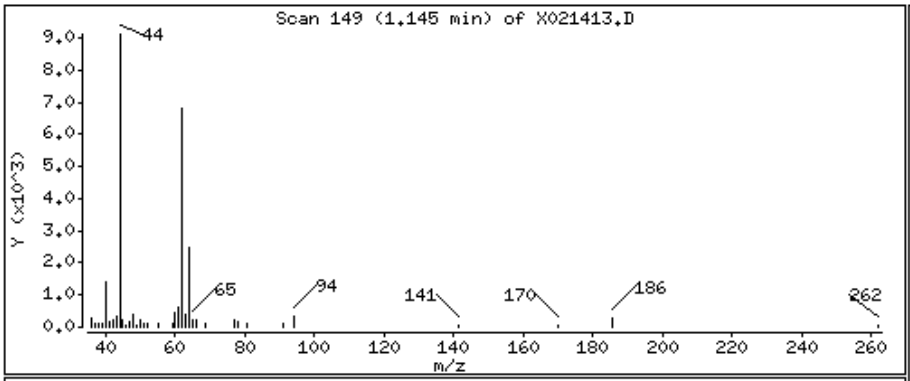
Operator: PC

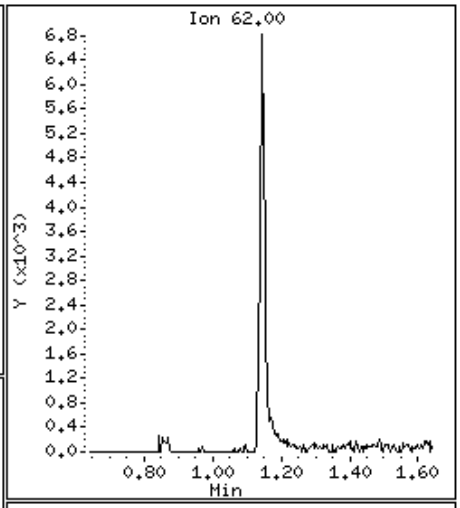
Column phase: DB624

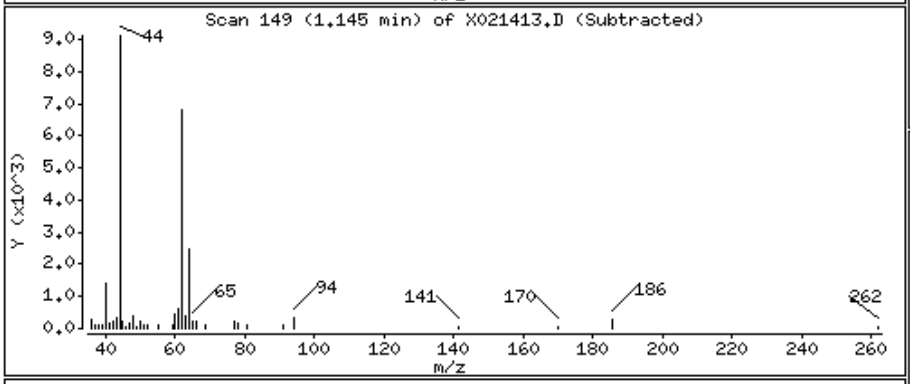
Column diameter: 0.18

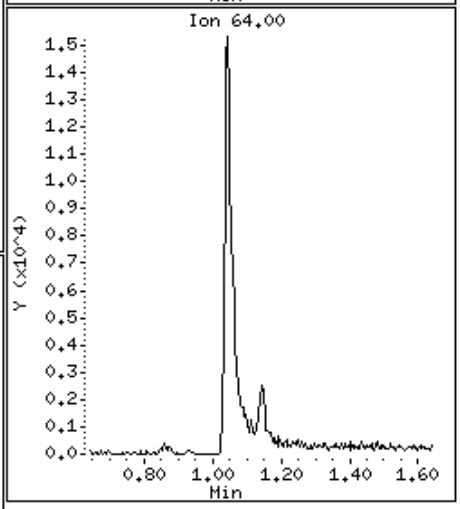
5 Vinyl Chloride

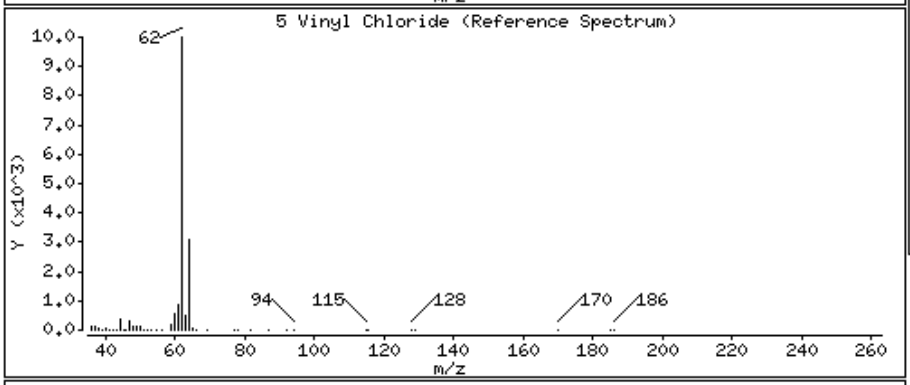
Concentration: 7.43 ug/l

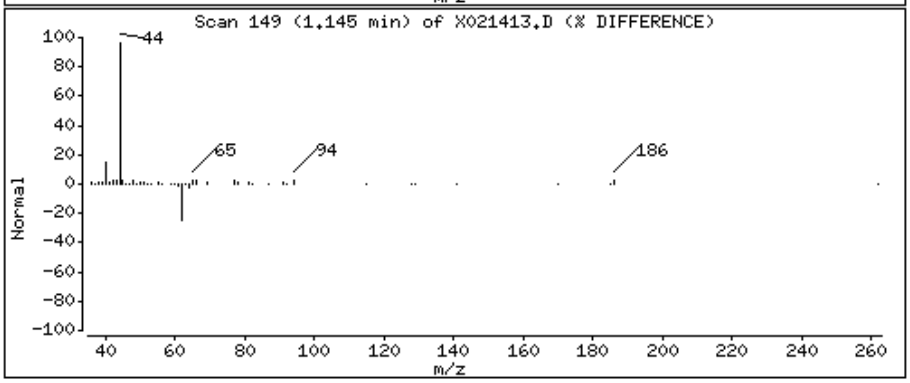


Data File: \\NAHSTWS005\Target\chem\voa6.i\X230214.b\X021413.D Page 3

Date : 14-FEB-2023 14:36

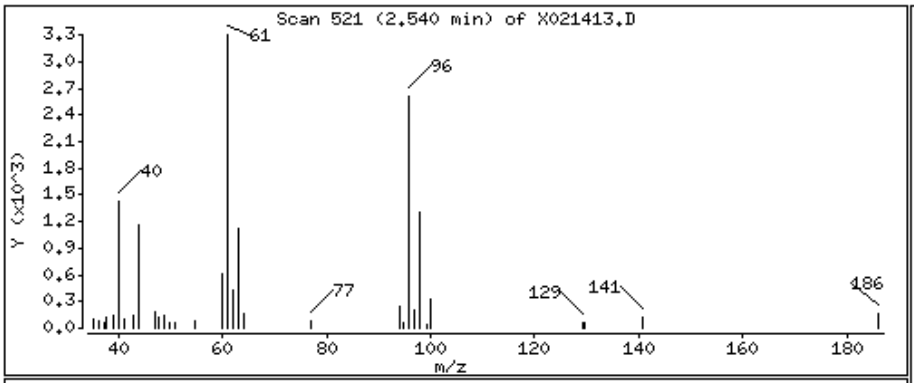
Client ID: HS23020265-01 Instrument: voa6.i

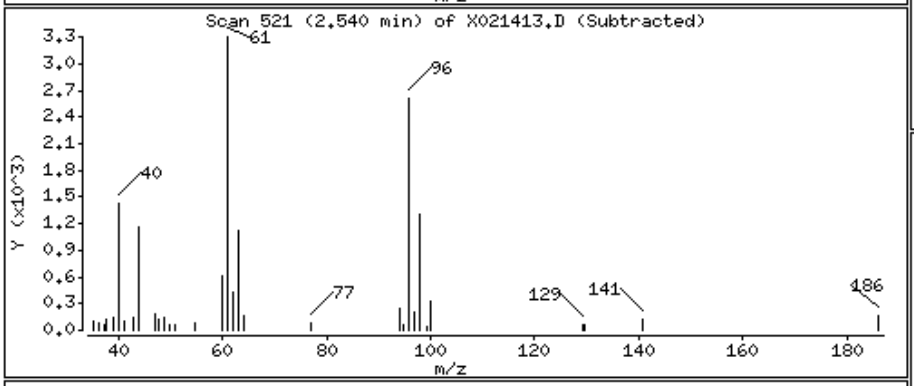
Sample Info: HS23020265-01;HS23020265-01;;;

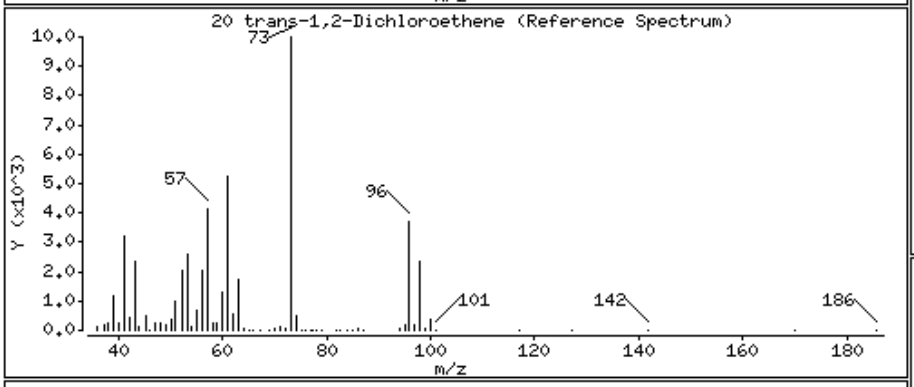
Purge Volume: 5.0 Operator: PC

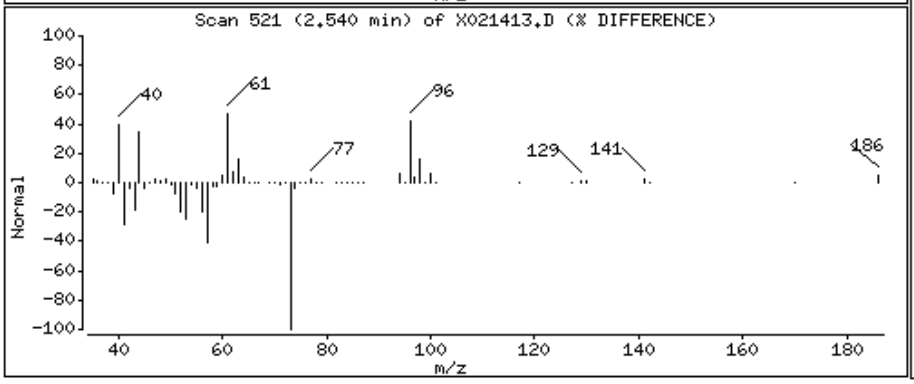
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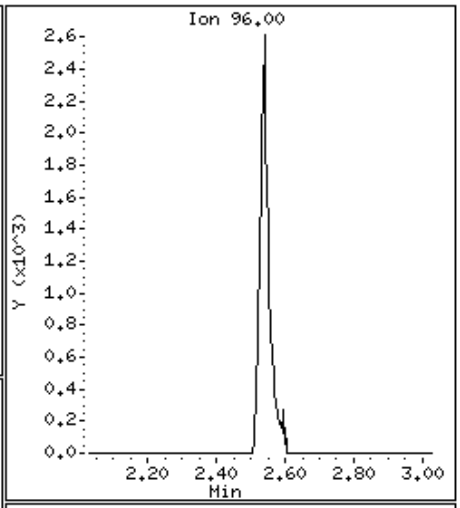
20 trans-1,2-Dichloroethene Concentration: 4.68 ug/l

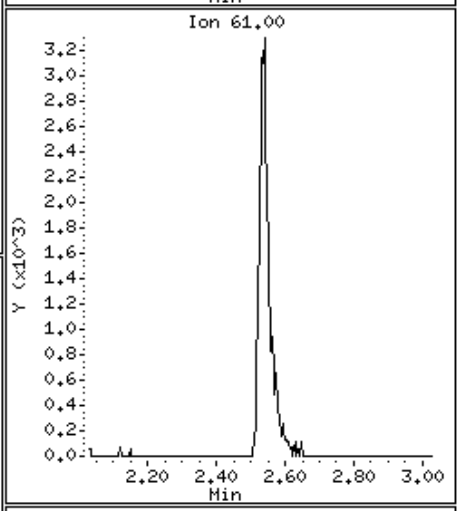


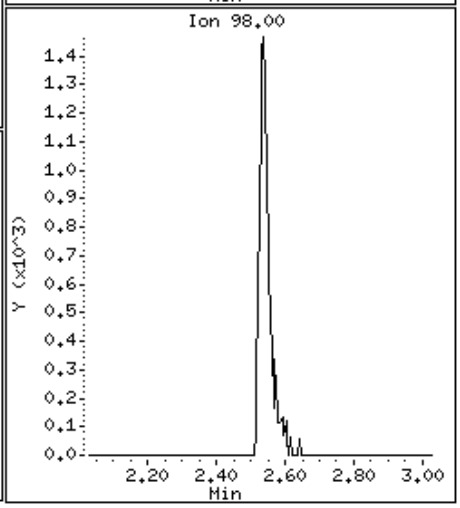



Data File: \\NAHSTWS005\Target\chem\voa6.i\X230214.b\X021413.D Page 4

Date : 14-FEB-2023 14:36

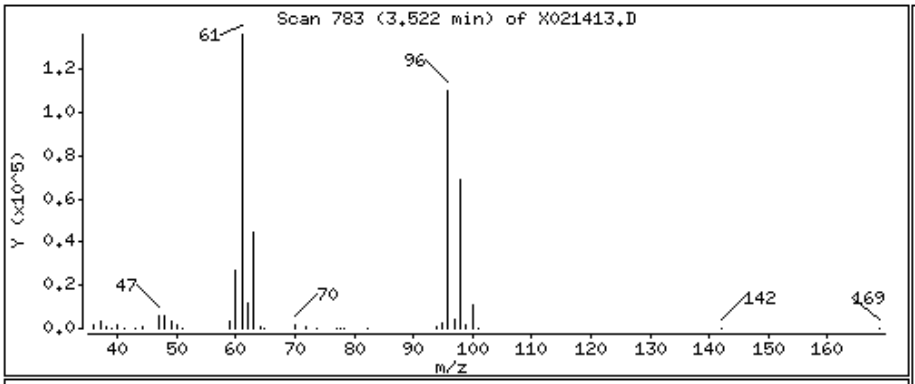
Client ID: HS23020265-01 Instrument: voa6.i

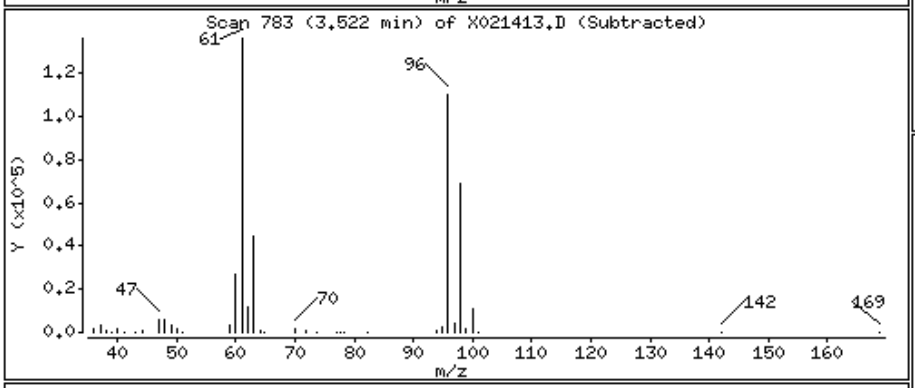
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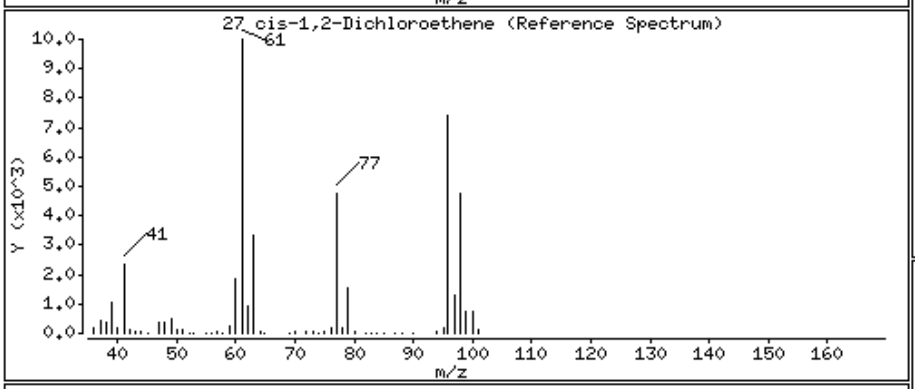
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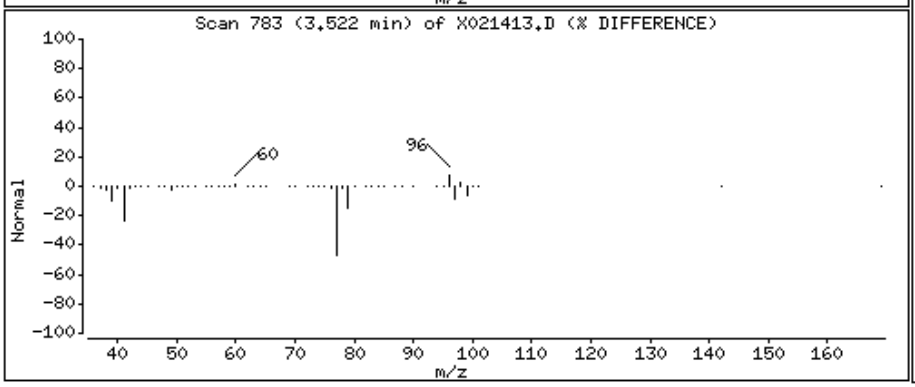
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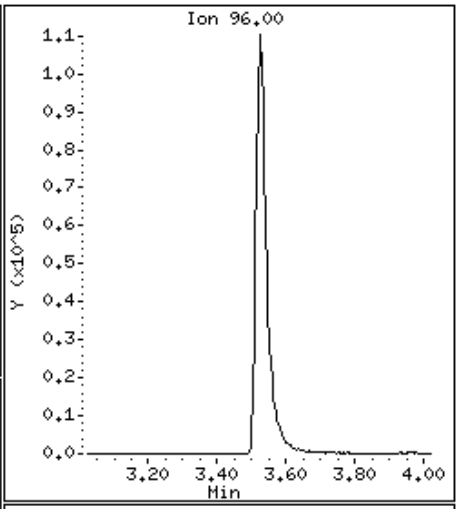
27 cis-1,2-Dichloroethene Concentration: 195.49 ug/l

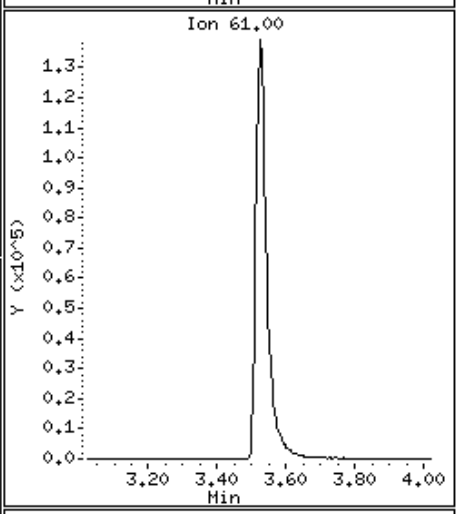


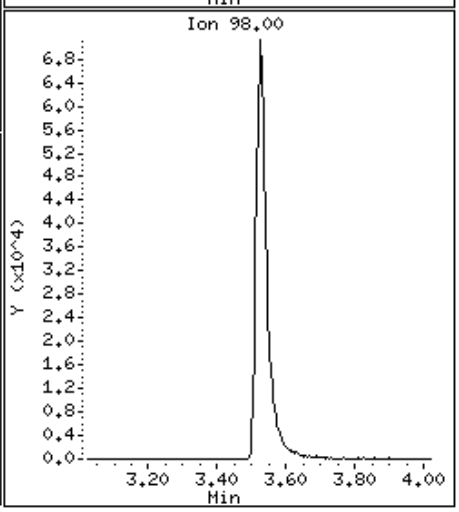



Data File: \\NAHSTWS005\Target\chem\voa6.i\X230214.b\X021413.D Page 5

Date : 14-FEB-2023 14:36

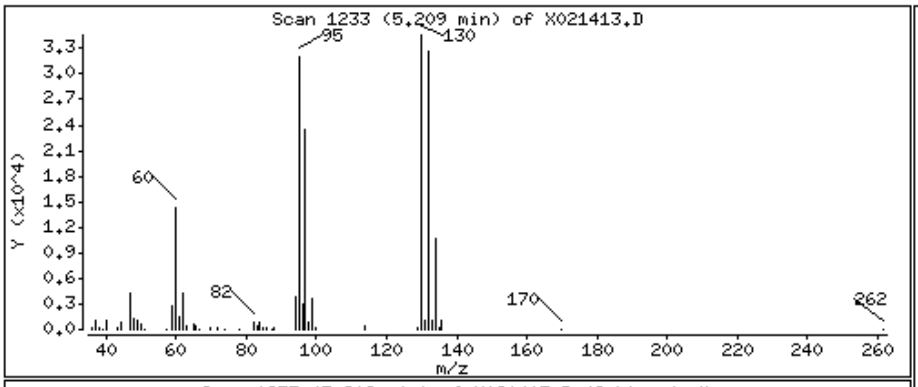
Client ID: HS23020265-01 Instrument: voa6.i

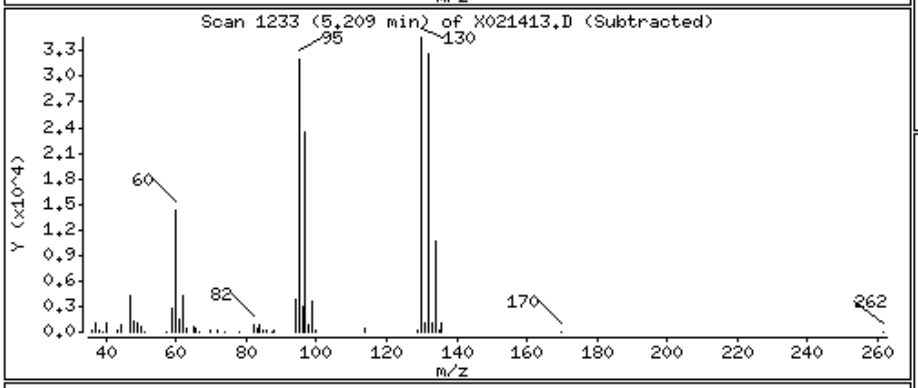
Sample Info: HS23020265-01;HS23020265-01;;;

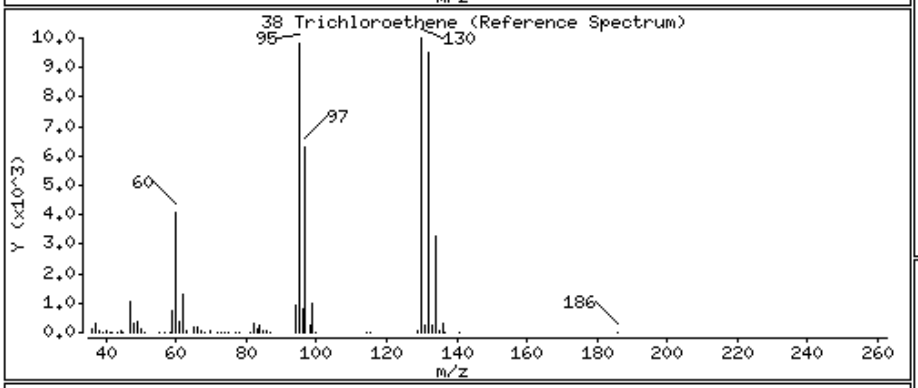
Purge Volume: 5.0 Operator: PC

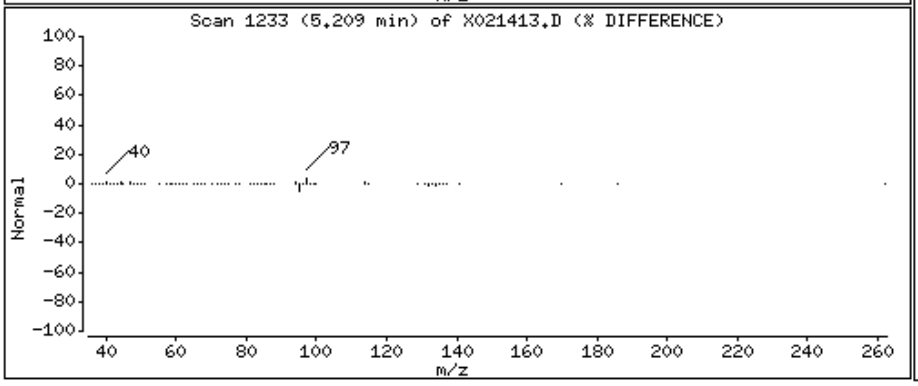
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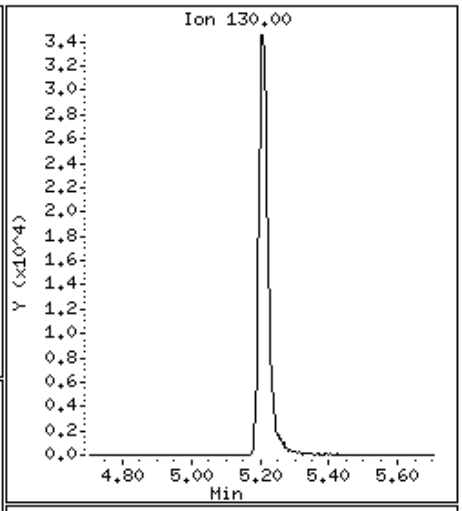
38 Trichloroethene Concentration: 54.50 ug/l

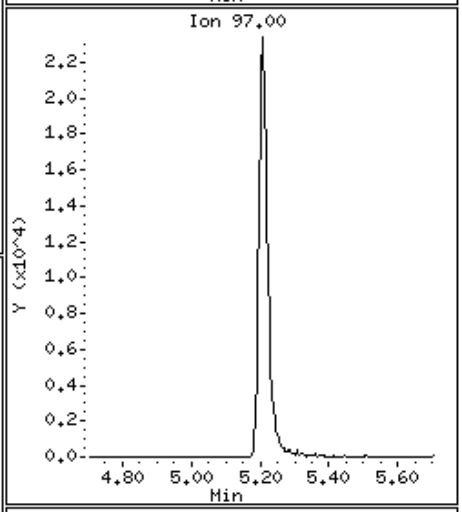


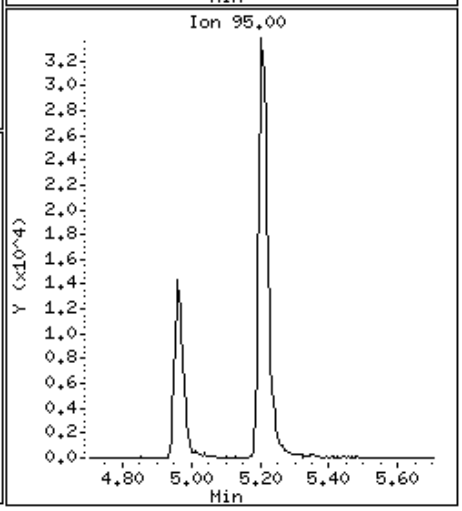



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InstruID  : voa6.i
LabSampID : HS23020265-01

NO MANUAL INTEGRATIONS

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X230214.b\X021417.D
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Inj Date : 14-FEB-2023 16:01
Operator : PC Inst ID: voa6.i
Smp Info : HS23020265-01MS;HS23020265-01MS;3;;MS
Misc Info : V6;WATER;0;5;
Comment :
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Meth Date : 21-Feb-2023 16:57 voa6.i Quant Type: ISTD
Cal Date : 16-DEC-2022 14:04 Cal File: X121608.D
Als bottle: 17 QC Sample: MS
Dil Factor: 5.00000
Integrator: HP RTE Compound Sublist: 8260_GB.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

| Name | Value | Description |
|---|---|---|
| DF | 5.000 | Dilution Factor |
| Uf | 5.000 | ng unit correction factor |
| Vo | 5.000 | sample purged |
| Cpnd Variable | | Local Compound Variable |

| | Compounds | QUANT SIG MASS | RT | EXP RT | REL RT | RESPONSE | CONCENTRATIONS ON-COLUMN ( ug/l) | FINAL ( ug/l) |
|---|---|---|---|---|---|---|---|---|
| * 1 | Pentafluorobenzene | 168 | 4.178 | 4.178 | (1.000) | 610672 | 50.0000 | |
| 135 | 1,4-Dioxane | 88 | 5.595 | 5.598 | (1.339) | 28443 | 509.532 | 2547.66 |
| 140 | 1,3-Butadiene | 54 | 1.164 | 1.164 | (0.279) | 41910 | 9.99964 | 49.99 |
| 2 | Dichlorodifluoromethane | 85 | 0.972 | 0.973 | (0.233) | 100056 | 23.6351 | 118.17 |
| 3 | Chloromethane | 50 | 1.077 | 1.077 | (0.258) | 55834 | 11.8702 | 59.35 |
| 5 | Vinyl Chloride | 62 | 1.141 | 1.141 | (0.273) | 59139 | 11.0860 | 55.43 |
| 6 | Bromomethane | 94 | 1.340 | 1.340 | (0.321) | 51382 | 14.0495 | 70.24 |
| 7 | Chloroethane | 64 | 1.400 | 1.404 | (0.335) | 52570 | 14.1583 | 70.79 |
| 8 | Trichlorofluoromethane | 101 | 1.557 | 1.557 | (0.373) | 126250 | 16.9119 | 84.55 |
| 9 | Acrolein | 56 | 1.445 | 1.445 | (0.346) | 18851 | 46.6852 | 233.42 |
| 10 | Acetone | 43 | 1.970 | 1.966 | (0.472) | 54825 | 31.9728 | 159.86 |
| 11 | 1,1-Dichloroethene | 96 | 1.913 | 1.913 | (0.458) | 80687 | 17.4092 | 87.04 |
| 15 | Iodomethane | 142 | 2.026 | 2.026 | (0.485) | 119336 | 22.8391 | 114.19 |
| 16 | Acrylonitrile | 53 | 2.532 | 2.528 | (0.606) | 77969 | 49.6013 | 248.00 |
| 17 | Methylene Chloride | 84 | 2.303 | 2.300 | (0.551) | 115347 | 18.1439 | 90.71 |
| 18 | Methyl tert-butyl ether | 73 | 2.528 | 2.528 | (0.605) | 317087 | 20.9017 | 104.50 |
| 19 | Carbon Disulfide | 76 | 2.067 | 2.067 | (0.495) | 393166 | 32.4230 | 162.11 |
| 20 | trans-1,2-Dichloroethene | 96 | 2.524 | 2.528 | (0.604) | 107880 | 20.7978 | 103.98 |
| 21 | Vinyl Acetate | 43 | 2.993 | 2.993 | (0.716) | 623164 | 46.7942 | 233.97 |
| 22 | 1,1-Dichloroethane | 63 | 2.918 | 2.918 | (0.699) | 196928 | 21.6323 | 108.16 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 24 | 2-Butanone | 43 | 3.574 | 3.570 (0.856) | 83372 | 47.5088 | 237.54 |
| 26 | 2,2-Dichloropropane | 77 | 3.507 | 3.507 (0.839) | 175210 | 22.6682 | 113.34 |

| | | | QUANT SIG | | | | | CONCENTRATIONS | |
|---|---|---|---|---|---|---|---|---|---|
| | | Compounds | MASS | RT | EXP RT | REL RT | RESPONSE | ON-COLUMN ( ug/l) | FINAL ( ug/l) |
| | 27 | cis-1,2-Dichloroethene | 96 | 3.522 | 3.522 | (0.843) | 357014 | 56.5556 | 282.77 |
| | 28 | Chloroform | 83 | 3.904 | 3.904 | (0.935) | 209753 | 20.5574 | 102.78 |
| | 29 | Bromochloromethane | 128 | 3.791 | 3.788 | (0.908) | 63199 | 18.2852 | 91.42 |
| $ | 30 | Dibromofluoromethane | 113 | 4.095 | 4.095 | (0.980) | 274845 | 46.8622 | 46.86 |
| | 31 | 1,1,1-Trichloroethane | 97 | 4.080 | 4.076 | (0.977) | 177383 | 21.9116 | 109.55 |
| | 32 | 1,1-Dichloropropene | 75 | 4.279 | 4.279 | (0.862) | 160456 | 25.3217 | 126.60 |
| | 33 | 1,2-Dichloroethane | 62 | 4.552 | 4.552 | (0.917) | 158752 | 21.7081 | 108.54 |
| | 34 | Carbon Tetrachloride | 117 | 4.260 | 4.264 | (0.858) | 152702 | 22.5667 | 112.83 |
| $ | 35 | 1,2-Dichloroethane-d4 | 65 | 4.466 | 4.470 | (1.069) | 315662 | 50.9983 | 50.99 |
| * | 36 | 1,4-Difluorobenzene | 114 | 4.965 | 4.961 | (1.000) | 892557 | 50.0000 | |
| | 37 | Benzene | 78 | 4.511 | 4.507 | (0.909) | 466951 | 21.9081 | 109.54 |
| | 38 | Trichloroethene | 130 | 5.205 | 5.205 | (1.048) | 192185 | 31.7905 | 158.95 |
| | 39 | Bromodichloromethane | 83 | 5.726 | 5.722 | (1.153) | 165416 | 20.6796 | 103.39 |
| | 42 | 1,2-Dichloropropane | 63 | 5.433 | 5.433 | (1.094) | 128838 | 22.7241 | 113.62 |
| | 44 | Dibromomethane | 93 | 5.550 | 5.550 | (1.118) | 77347 | 20.0710 | 100.35 |
| | 45 | 4-Methyl-2-Pentanone | 43 | 6.322 | 6.322 | (0.824) | 225821 | 53.5304 | 267.65 |
| | 46 | cis-1,3-Dichloropropene | 75 | 6.153 | 6.153 | (1.239) | 208833 | 22.2300 | 111.15 |
| * | 47 | Chlorobenzene-d5 | 117 | 7.668 | 7.668 | (1.000) | 789252 | 50.0000 | |
| $ | 48 | Toluene-d8 | 98 | 6.385 | 6.386 | (0.833) | 1063122 | 54.5108 | 54.51 |
| | 50 | Toluene | 91 | 6.445 | 6.446 | (0.841) | 509073 | 23.3358 | 116.67 |
| | 51 | trans-1,3-Dichloropropene | 75 | 6.682 | 6.678 | (1.346) | 177765 | 22.8019 | 114.00 |
| | 52 | 2-Hexanone | 43 | 7.083 | 7.083 | (0.924) | 152191 | 53.0252 | 265.12 |
| | 53 | 1,1,2-Trichloroethane | 83 | 6.835 | 6.835 | (0.891) | 95589 | 21.8414 | 109.20 |
| | 54 | 1,3-Dichloropropane | 76 | 6.982 | 6.978 | (0.911) | 203916 | 23.6717 | 118.35 |
| | 55 | Dibromochloromethane | 129 | 7.173 | 7.173 | (0.935) | 135589 | 21.4658 | 107.32 |
| | 56 | Tetrachloroethene | 164 | 6.925 | 6.925 | (0.903) | 108897 | 24.1262 | 120.63 |
| | 57 | 1,2-Dibromoethane | 107 | 7.259 | 7.259 | (0.947) | 121903 | 22.2779 | 111.38 |
| | 58 | 1-Chlorohexane | 55 | 7.694 | 7.694 | (1.550) | 123951 | 28.7360 | 143.68 |
| | 59 | Chlorobenzene | 112 | 7.694 | 7.690 | (1.003) | 337754 | 21.8281 | 109.14 |
| | 60 | 1,1,1,2-Tetrachloroethane | 131 | 7.772 | 7.773 | (1.014) | 127161 | 22.0828 | 110.41 |
| | 61 | Ethylbenzene | 106 | 7.799 | 7.799 | (1.017) | 178581 | 24.5009 | 122.50 |
| | 62 | m,p-Xylenes | 106 | 7.904 | 7.904 | (1.031) | 448962 | 47.7819 | 238.90 |
| | 63 | o-Xylene | 106 | 8.241 | 8.241 | (1.075) | 215937 | 23.2846 | 116.42 |
| | 64 | Styrene | 104 | 8.260 | 8.256 | (1.077) | 339010 | 21.8096 | 109.04 |
| | 66 | Bromoform | 173 | 8.410 | 8.406 | (1.097) | 92349 | 21.1036 | 105.51 |
| | 67 | Isopropylbenzene | 105 | 8.560 | 8.560 | (1.116) | 560307 | 26.4454 | 132.22 |
| | 68 | 1,1,2,2-Tetrachloroethane | 83 | 8.837 | 8.837 | (0.915) | 160785 | 25.2490 | 126.24 |
| $ | 69 | 4-Bromofluorobenzene | 95 | 8.687 | 8.687 | (1.133) | 388393 | 53.2738 | 53.27 |
| * | 70 | 1,4-Dichlorobenzene-d4 | 152 | 9.662 | 9.662 | (1.000) | 399533 | 50.0000 | |
| | 71 | 1,2,3-Trichloropropane | 75 | 8.863 | 8.863 | (0.917) | 122490 | 27.5528 | 137.76(M) |
| | 73 | n-Propylbenzene | 91 | 8.912 | 8.908 | (0.922) | 660053 | 29.8253 | 149.12 |
| | 74 | Bromobenzene | 156 | 8.803 | 8.803 | (0.911) | 154327 | 23.5436 | 117.71 |
| | 75 | 1,3,5-Trimethylbenzene | 105 | 9.066 | 9.066 | (0.938) | 475199 | 29.0667 | 145.33 |
| | 76 | 2-Chlorotoluene | 91 | 8.972 | 8.972 | (0.929) | 403879 | 27.8109 | 139.05 |
| | 77 | 4-Chlorotoluene | 91 | 9.069 | 9.070 | (0.939) | 462119 | 27.9137 | 139.56 |
| | 78 | tert-Butylbenzene | 119 | 9.336 | 9.336 | (0.966) | 404263 | 30.2086 | 151.04 |
| | 79 | 1,2,4-Trimethylbenzene | 105 | 9.377 | 9.377 | (0.971) | 475832 | 27.6614 | 138.30 |
| | 81 | sec-Butylbenzene | 105 | 9.519 | 9.519 | (0.985) | 565951 | 31.7848 | 158.92 |
| | 82 | p-Isopropyltoluene | 119 | 9.647 | 9.647 | (0.998) | 496012 | 31.0869 | 155.43 |
| | 83 | 1,3-Dichlorobenzene | 146 | 9.602 | 9.602 | (0.994) | 275924 | 25.3613 | 126.80 |
| | 84 | 1,4-Dichlorobenzene | 146 | 9.681 | 9.681 | (1.002) | 285296 | 24.0305 | 120.15 |
| | 87 | n-Butylbenzene | 91 | 9.992 | 9.992 | (1.034) | 438835 | 29.3001 | 146.50 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 88 | 1,2-Dichlorobenzene | 146 | 9.992 | 9.992 (1.034) | 271079 | 24.1929 | 120.96 |
| 89 | 1,2-Dibromo-3-Chloropropane | 155 | 10.659 | 10.651 (1.103) | 26703 | 26.2725 | 131.36 |

| | Compounds | QUANT SIG MASS | RT | EXP RT | REL RT | RESPONSE | CONCENTRATIONS ON-COLUMN ( ug/l) | CONCENTRATIONS FINAL ( ug/l) |
|---|---|---|---|---|---|---|---|---|
| | 90 1,2,4-Trichlorobenzene | 180 | 11.337 | 11.334 | (1.173) | 196933 | 27.8496 | 139.24 |
| | 91 Hexachlorobutadiene | 225 | 11.480 | 11.476 | (1.188) | 91456 | 29.3062 | 146.53 |
| | 92 Naphthalene | 128 | 11.544 | 11.540 | (1.195) | 453416 | 28.1819 | 140.90 |
| | 93 1,2,3-Trichlorobenzene | 180 | 11.742 | 11.739 | (1.215) | 187222 | 27.6446 | 138.22 |
| M | 94 1,2-Dichloroethylene (total) | 96 | | | | 464894 | 77.3534 | 386.76 |
| M | 95 Xylenes (total) | 106 | | | | 664899 | 71.0665 | 355.33 |
| | 141 Cyclohexane | 56 | 4.118 | 4.118 | (0.986) | 176338 | 29.1859 | 145.92 |
| | 138 Freon TF | 101 | 1.913 | 1.913 | (0.458) | 94091 | 20.9897 | 104.94 |
| | 147 Methylcyclohexane | 55 | 5.377 | 5.377 | (1.083) | 294638 | 26.9676 | 134.83 |
| | 146 Methyl Acetate | 43 | 2.228 | 2.225 | (0.533) | 68393 | 24.8893 | 124.44 |
| | 148 Tert-Butyl alcohol | 59 | 2.419 | 2.419 | (0.579) | 233973 | 553.325 | 2766.62 |
| | 149 Isopropyl Alcohol | 45 | 2.086 | 2.086 | (0.499) | 134600 | 609.513 | 3047.56 |

## QC Flag Legend

M - Compound response manually integrated.

01255571

Data File: \\NAHSTWS005\Target\chem\voa6.i\X230214.b\X021417.D

Page 1

Date : 14-FEB-2023 16:01

Client ID: HS23020265-01MS

Instrument: voa6.i

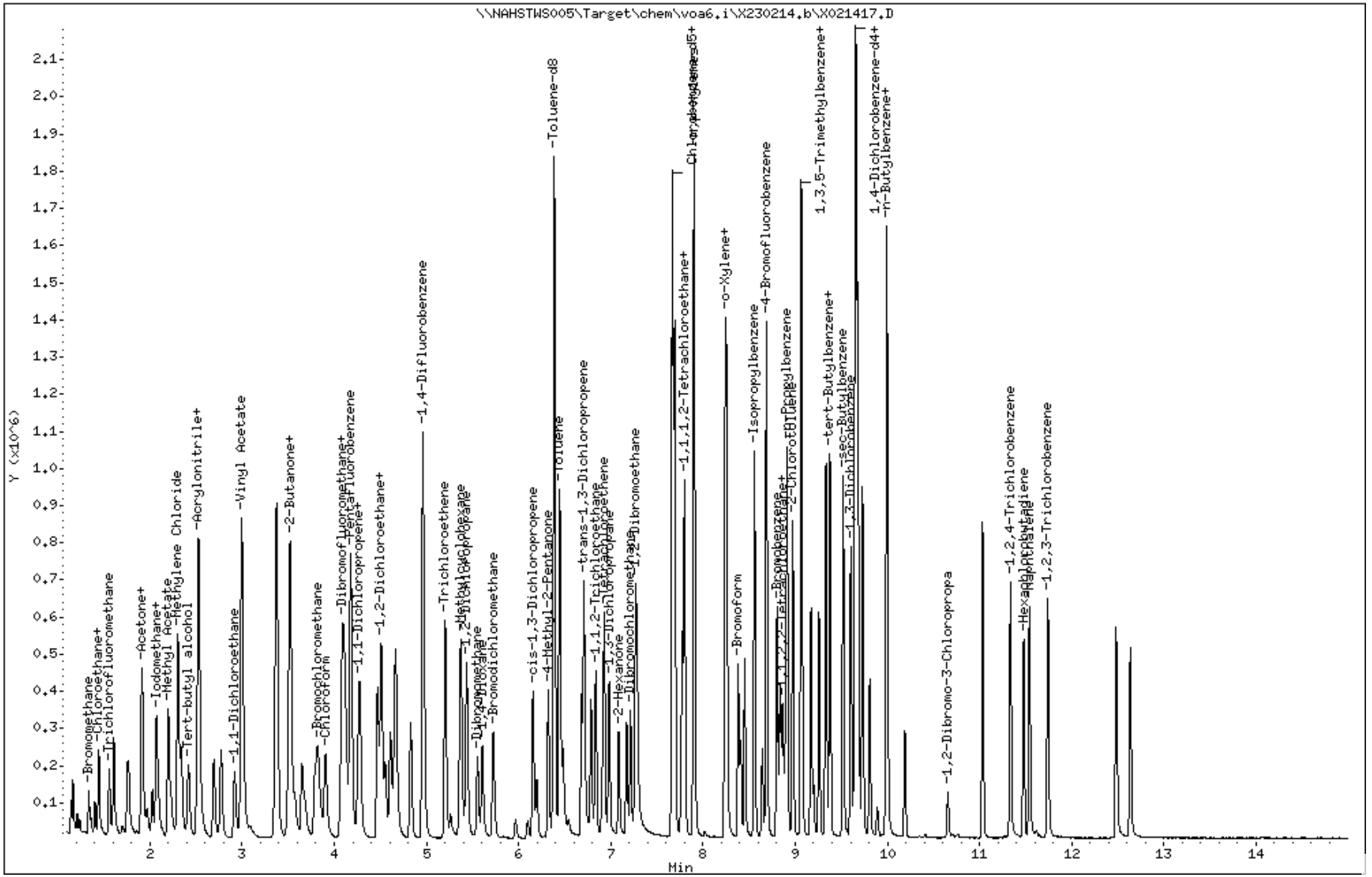
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Purge Volume: 5.0

Operator: PC

Column phase: DB624

Column diameter: 0.18



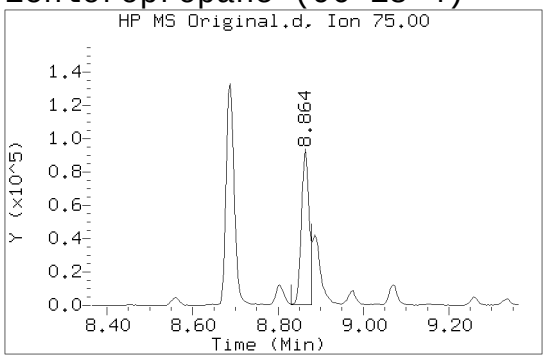
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Inj Date : 14-FEB-2023 16:01
InstruID : voa6.i
LabSampID : HS23020265-01MS

## 1,2,3-Trichloropropane (96-18-4)

Reason Code:

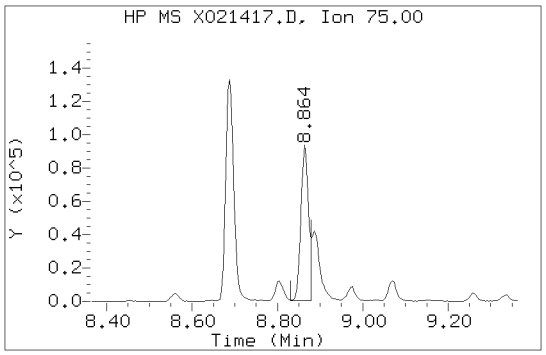
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HEIGHT
93763
21-Feb-2023
16:57
Linh
Pham



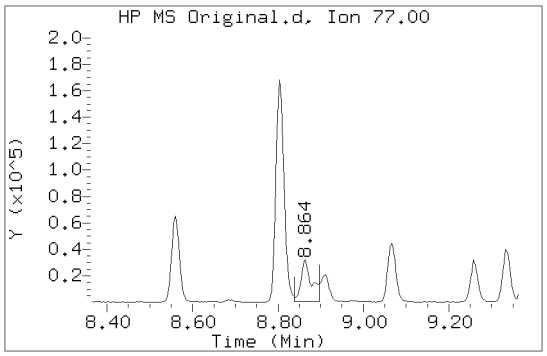

### AFTER

MASS
75
AREA
122490
HEIGHT
93763
21-Feb-2023
16:57
Linh
Pham



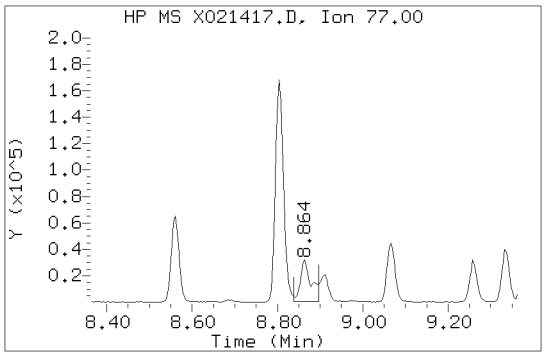

### BEFORE

MASS
77
AREA
58612
HEIGHT
31748
21-Feb-2023
16:57
Linh
Pham




### AFTER

MASS
77
AREA
58612
HEIGHT
31748
21-Feb-2023
16:57
Linh
Pham



Data File: \\NAHSTWS005\Target\chem\voa6.i\X230214.b\X021418.D  Page 1
Report Date: 21-Feb-2023 16:57

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X230214.b\X021418.D
Lab Smp Id: HS23020265-01MSD  Client Smp ID: HS23020265-01MSD
Inj Date  : 14-FEB-2023 16:22
Operator  : PC  Inst ID: voa6.i
Smp Info  : HS23020265-01MSD;HS23020265-01MSD;3;;MSD
Misc Info : V6;WATER;0;5;
Comment   :
Method    : \\NAHSTWS005\Target\chem\voa6.i\X230214.b\8260W.m
Meth Date : 21-Feb-2023 16:57 voa6.i  Quant Type: ISTD
Cal Date  : 16-DEC-2022 14:04  Cal File: X121608.D
Als bottle: 17  QC Sample: MSD
Dil Factor: 5.00000
Integrator: HP RTE  Compound Sublist: 8260_GB.sub
Target Version:  4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

| Name | Value | Description |
|---|---|---|
| DF | 5.000 | Dilution Factor |
| Uf | 5.000 | ng unit correction factor |
| Vo | 5.000 | sample purged |
| Cpnd Variable | | Local Compound Variable |

| | Compounds | QUANT SIG MASS | RT | EXP RT | REL RT | RESPONSE | CONCENTRATIONS ON-COLUMN ( ug/l) | FINAL ( ug/l) |
|---|---|---|---|---|---|---|---|---|
| * 1 | Pentafluorobenzene | 168 | 4.178 | 4.178 | (1.000) | 616296 | 50.0000 | |
| 135 | 1,4-Dioxane | 88 | 5.602 | 5.598 | (1.341) | 26555 | 471.369 | 2356.84(a) |
| 140 | 1,3-Butadiene | 54 | 1.164 | 1.164 | (0.279) | 38687 | 9.14640 | 45.73 |
| 2 | Dichlorodifluoromethane | 85 | 0.972 | 0.973 | (0.233) | 94822 | 22.2183 | 111.09 |
| 3 | Chloromethane | 50 | 1.077 | 1.077 | (0.258) | 54389 | 11.5343 | 57.67 |
| 5 | Vinyl Chloride | 62 | 1.145 | 1.141 | (0.274) | 54484 | 10.1202 | 50.60 |
| 6 | Bromomethane | 94 | 1.336 | 1.340 | (0.320) | 46051 | 12.6744 | 63.37 |
| 7 | Chloroethane | 64 | 1.404 | 1.404 | (0.336) | 51162 | 13.6533 | 68.26 |
| 8 | Trichlorofluoromethane | 101 | 1.561 | 1.557 | (0.374) | 117912 | 15.6508 | 78.25 |
| 9 | Acrolein | 56 | 1.445 | 1.445 | (0.346) | 18034 | 44.4012 | 222.00 |
| 10 | Acetone | 43 | 1.970 | 1.966 | (0.472) | 53902 | 31.1467 | 155.73 |
| 11 | 1,1-Dichloroethene | 96 | 1.917 | 1.913 | (0.459) | 72299 | 15.4570 | 77.28 |
| 15 | Iodomethane | 142 | 2.026 | 2.026 | (0.485) | 121709 | 23.0439 | 115.21 |
| 16 | Acrylonitrile | 53 | 2.532 | 2.528 | (0.606) | 79050 | 49.8301 | 249.15 |
| 17 | Methylene Chloride | 84 | 2.303 | 2.300 | (0.551) | 113976 | 17.7647 | 88.82 |
| 18 | Methyl tert-butyl ether | 73 | 2.528 | 2.528 | (0.605) | 308255 | 20.1341 | 100.67 |
| 19 | Carbon Disulfide | 76 | 2.071 | 2.067 | (0.496) | 367138 | 30.0003 | 150.00 |
| 20 | trans-1,2-Dichloroethene | 96 | 2.528 | 2.528 | (0.605) | 100609 | 19.2190 | 96.09 |
| 21 | Vinyl Acetate | 43 | 2.993 | 2.993 | (0.716) | 619422 | 46.0887 | 230.44 |
| 22 | 1,1-Dichloroethane | 63 | 2.918 | 2.918 | (0.699) | 184368 | 20.0677 | 100.33 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 24 | 2-Butanone | 43 | 3.574 | 3.570 (0.856) | 80939 | 45.8166 | 229.08 |
| 26 | 2,2-Dichloropropane | 77 | 3.507 | 3.507 (0.839) | 163798 | 20.9983 | 104.99 |

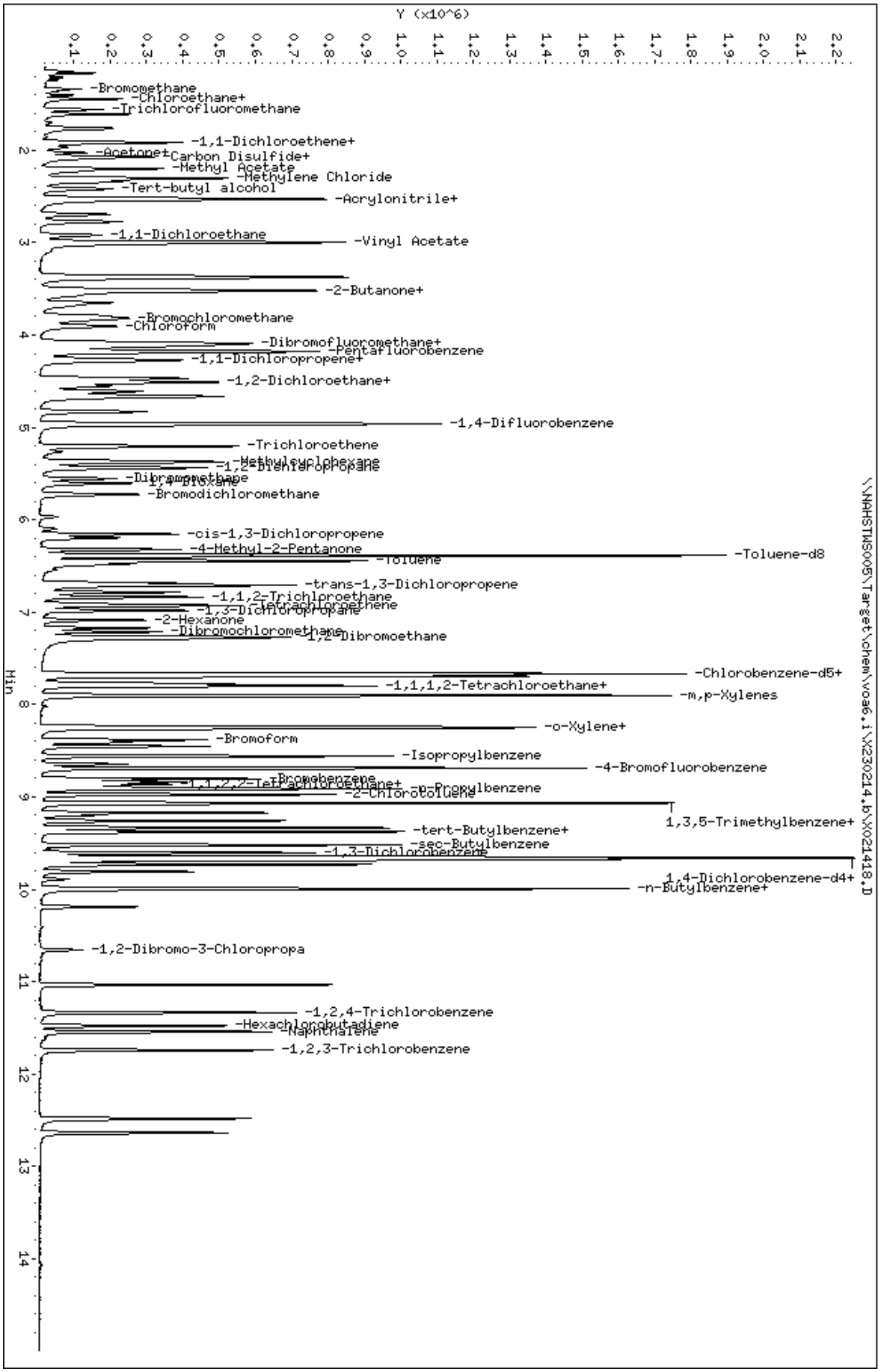
| | | QUANT SIG | | | | | CONCENTRATIONS | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | ON-COLUMN | FINAL |
| | Compounds | MASS | RT | EXP RT | REL RT | RESPONSE | ( ug/l) | ( ug/l) |
| | 27 cis-1,2-Dichloroethene | 96 | 3.522 | 3.522 | (0.843) | 344276 | 54.0401 | 270.20 |
| | 28 Chloroform | 83 | 3.904 | 3.904 | (0.935) | 200963 | 19.5162 | 97.58 |
| | 29 Bromochloromethane | 128 | 3.795 | 3.788 | (0.908) | 61114 | 17.5206 | 87.60 |
| $ | 30 Dibromofluoromethane | 113 | 4.095 | 4.095 | (0.980) | 272829 | 46.0913 | 46.09 |
| | 31 1,1,1-Trichloroethane | 97 | 4.080 | 4.076 | (0.977) | 168604 | 20.6371 | 103.18 |
| | 32 1,1-Dichloropropene | 75 | 4.279 | 4.279 | (0.862) | 150572 | 23.2938 | 116.46 |
| | 33 1,2-Dichloroethane | 62 | 4.552 | 4.552 | (0.917) | 160274 | 21.4845 | 107.42 |
| | 34 Carbon Tetrachloride | 117 | 4.264 | 4.264 | (0.859) | 143785 | 20.8304 | 104.15 |
| $ | 35 1,2-Dichloroethane-d4 | 65 | 4.470 | 4.470 | (1.070) | 303723 | 48.6343 | 48.63 |
| * | 36 1,4-Difluorobenzene | 114 | 4.965 | 4.961 | (1.000) | 910492 | 50.0000 | |
| | 37 Benzene | 78 | 4.511 | 4.507 | (0.909) | 448757 | 20.6398 | 103.19 |
| | 38 Trichloroethene | 130 | 5.205 | 5.205 | (1.048) | 181072 | 29.3623 | 146.81 |
| | 39 Bromodichloromethane | 83 | 5.726 | 5.722 | (1.153) | 159772 | 19.5805 | 97.90 |
| | 42 1,2-Dichloropropane | 63 | 5.433 | 5.433 | (1.094) | 122573 | 21.1933 | 105.96 |
| | 44 Dibromomethane | 93 | 5.550 | 5.550 | (1.118) | 74570 | 18.9692 | 94.84 |
| | 45 4-Methyl-2-Pentanone | 43 | 6.322 | 6.322 | (0.824) | 232237 | 53.0609 | 265.30 |
| | 46 cis-1,3-Dichloropropene | 75 | 6.153 | 6.153 | (1.239) | 202068 | 21.0862 | 105.43 |
| * | 47 Chlorobenzene-d5 | 117 | 7.668 | 7.668 | (1.000) | 818859 | 50.0000 | |
| $ | 48 Toluene-d8 | 98 | 6.385 | 6.386 | (0.833) | 1080077 | 53.3778 | 53.37 |
| | 50 Toluene | 91 | 6.445 | 6.446 | (0.841) | 486391 | 21.4899 | 107.44 |
| | 51 trans-1,3-Dichloropropene | 75 | 6.682 | 6.678 | (1.346) | 174029 | 21.8830 | 109.41 |
| | 52 2-Hexanone | 43 | 7.086 | 7.083 | (0.924) | 155993 | 52.3847 | 261.92 |
| | 53 1,1,2-Trichloroethane | 83 | 6.835 | 6.835 | (0.891) | 96024 | 21.1475 | 105.73 |
| | 54 1,3-Dichloropropane | 76 | 6.982 | 6.978 | (0.911) | 198864 | 22.2505 | 111.25 |
| | 55 Dibromochloromethane | 129 | 7.173 | 7.173 | (0.935) | 131112 | 20.0065 | 100.03 |
| | 56 Tetrachloroethene | 164 | 6.925 | 6.925 | (0.903) | 104839 | 22.3873 | 111.93 |
| | 57 1,2-Dibromoethane | 107 | 7.259 | 7.259 | (0.947) | 120200 | 21.1725 | 105.86 |
| | 58 1-Chlorohexane | 55 | 7.694 | 7.694 | (1.550) | 112700 | 25.6130 | 128.06 |
| | 59 Chlorobenzene | 112 | 7.694 | 7.690 | (1.003) | 328388 | 20.4554 | 102.27 |
| | 60 1,1,1,2-Tetrachloroethane | 131 | 7.772 | 7.773 | (1.014) | 120311 | 20.1378 | 100.68 |
| | 61 Ethylbenzene | 106 | 7.799 | 7.799 | (1.017) | 170700 | 22.5728 | 112.86 |
| | 62 m,p-Xylenes | 106 | 7.904 | 7.904 | (1.031) | 430836 | 44.1950 | 220.97 |
| | 63 o-Xylene | 106 | 8.241 | 8.241 | (1.075) | 208034 | 21.6213 | 108.10 |
| | 64 Styrene | 104 | 8.260 | 8.256 | (1.077) | 344995 | 21.3922 | 106.96 |
| | 66 Bromoform | 173 | 8.410 | 8.406 | (1.097) | 91084 | 20.0620 | 100.30 |
| | 67 Isopropylbenzene | 105 | 8.560 | 8.560 | (1.116) | 535765 | 24.3728 | 121.86 |
| | 68 1,1,2,2-Tetrachloroethane | 83 | 8.837 | 8.837 | (0.915) | 158563 | 22.4194 | 112.09 |
| $ | 69 4-Bromofluorobenzene | 95 | 8.687 | 8.687 | (1.133) | 408846 | 54.0507 | 54.05 |
| * | 70 1,4-Dichlorobenzene-d4 | 152 | 9.662 | 9.662 | (1.000) | 443741 | 50.0000 | |
| | 71 1,2,3-Trichloropropane | 75 | 8.863 | 8.863 | (0.917) | 119813 | 24.2657 | 121.32(M) |
| | 73 n-Propylbenzene | 91 | 8.912 | 8.908 | (0.922) | 631674 | 25.6994 | 128.49 |
| | 74 Bromobenzene | 156 | 8.803 | 8.803 | (0.911) | 150276 | 20.6416 | 103.20 |
| | 75 1,3,5-Trimethylbenzene | 105 | 9.066 | 9.066 | (0.938) | 462651 | 25.4798 | 127.39 |
| | 76 2-Chlorotoluene | 91 | 8.972 | 8.972 | (0.929) | 392402 | 24.3287 | 121.64 |
| | 77 4-Chlorotoluene | 91 | 9.070 | 9.070 | (0.939) | 447012 | 24.3112 | 121.55 |
| | 78 tert-Butylbenzene | 119 | 9.336 | 9.336 | (0.966) | 389868 | 26.2306 | 131.15 |
| | 79 1,2,4-Trimethylbenzene | 105 | 9.377 | 9.377 | (0.971) | 463039 | 24.2360 | 121.18 |
| | 81 sec-Butylbenzene | 105 | 9.519 | 9.519 | (0.985) | 554555 | 28.0419 | 140.20 |
| | 82 p-Isopropyltoluene | 119 | 9.647 | 9.647 | (0.998) | 483754 | 27.2982 | 136.49 |
| | 83 1,3-Dichlorobenzene | 146 | 9.606 | 9.602 | (0.994) | 271253 | 22.4481 | 112.24 |
| | 84 1,4-Dichlorobenzene | 146 | 9.681 | 9.681 | (1.002) | 280956 | 21.3073 | 106.53 |
| | 87 n-Butylbenzene | 91 | 9.992 | 9.992 | (1.034) | 427083 | 25.8943 | 129.47 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 88 | 1,2-Dichlorobenzene | 146 | 9.992 | 9.992 (1.034) | 267575 | 21.5011 | 107.50 |
| 89 | 1,2-Dibromo-3-Chloropropane | 155 | 10.659 | 10.651 (1.103) | 26293 | 23.3023 | 116.51 |

| | Compounds | QUANT SIG MASS | RT | EXP RT | REL RT | RESPONSE | CONCENTRATIONS ON-COLUMN ( ug/l) | FINAL ( ug/l) |
|---|---|---|---|---|---|---|---|---|
| | 90 1,2,4-Trichlorobenzene | 180 | 11.337 | 11.334 | (1.173) | 200033 | 25.4698 | 127.34 |
| | 91 Hexachlorobutadiene | 225 | 11.476 | 11.476 | (1.188) | 88711 | 25.6104 | 128.05 |
| | 92 Naphthalene | 128 | 11.540 | 11.540 | (1.194) | 457096 | 25.5802 | 127.90 |
| | 93 1,2,3-Trichlorobenzene | 180 | 11.742 | 11.739 | (1.215) | 189035 | 25.1315 | 125.65 |
| M | 94 1,2-Dichloroethylene (total) | 96 | | | | 444885 | 73.2591 | 366.29 |
| M | 95 Xylenes (total) | 106 | | | | 638870 | 65.8163 | 329.08 |
| | 141 Cyclohexane | 56 | 4.125 | 4.118 | (0.987) | 166738 | 27.4247 | 137.12 |
| | 138 Freon TF | 101 | 1.917 | 1.913 | (0.459) | 80129 | 17.7120 | 88.55 |
| | 147 Methylcyclohexane | 55 | 5.377 | 5.377 | (1.083) | 283742 | 25.4587 | 127.29 |
| | 146 Methyl Acetate | 43 | 2.232 | 2.225 | (0.534) | 66968 | 24.1483 | 120.74 |
| | 148 Tert-Butyl alcohol | 59 | 2.419 | 2.419 | (0.579) | 234105 | 548.585 | 2742.92 |
| | 149 Isopropyl Alcohol | 45 | 2.086 | 2.086 | (0.499) | 135174 | 606.526 | 3032.62 |

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.




Data File: \\NAHSTWS005\Target\chem\voa6.i\x230214.b\x021418.D
Date : 14-FEB-2023 16:22
Client ID: HS23020265-01MSD
Sample Info: HS23020265-01MSD;HS23020265-01MSD;3;;MSD
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

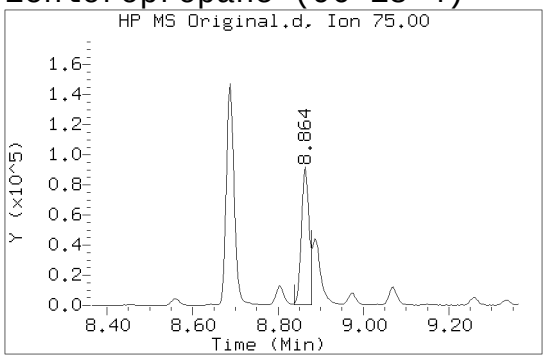
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Inj Date : 14-FEB-2023 16:22
InstruID : voa6.i
LabSampID : HS23020265-01MSD

## 1,2,3-Trichloropropane (96-18-4)

Reason Code:

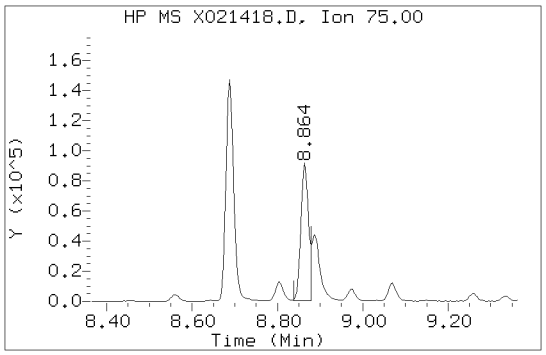
**BEFORE**

MASS
75
AREA
119813
HEIGHT
91860
21-Feb-2023
16:57
Linh
Pham



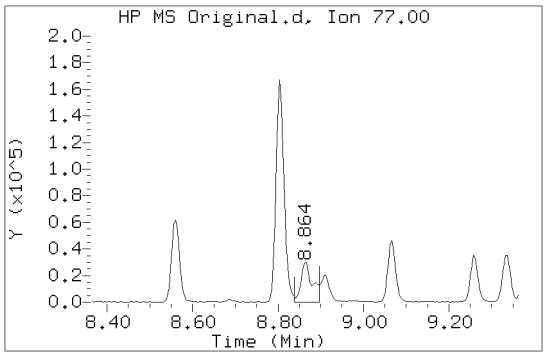

**AFTER**

MASS
75
AREA
119813
HEIGHT
91860
21-Feb-2023
16:57
Linh
Pham



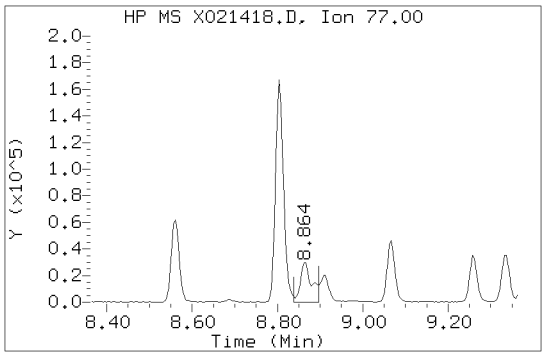

**BEFORE**

MASS
77
AREA
57832
HEIGHT
29887
21-Feb-2023
16:57
Linh
Pham




**AFTER**

MASS
77
AREA
57832
HEIGHT
29887
21-Feb-2023
16:57
Linh
Pham



Data File: \\NAHSTWS005\Target\chem\voa6.i\X230214.b\X021432.D  Page 1
Report Date: 21-Feb-2023 16:58

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X230214.b\X021432.D
Lab Smp Id: CCV-END  Client Smp ID: CCV-END
Inj Date  : 14-FEB-2023 21:16
Operator  : PC  Inst ID: voa6.i
Smp Info  : CCV-END;CCV-END;2;;
Misc Info : V6;WATER;0;1;
Comment   :
Method    : \\NAHSTWS005\Target\chem\voa6.i\X230214.b\8260W.m
Meth Date : 21-Feb-2023 16:58 voa6.i  Quant Type: ISTD
Cal Date  : 16-DEC-2022 14:04  Cal File: X121608.D
Als bottle: 31  Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE  Compound Sublist: 8260_GB.sub
Target Version:  4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

| Name | Value | Description |
|---|---|---|
| DF | 1.000 | Dilution Factor |
| Uf | 5.000 | ng unit correction factor |
| Vo | 5.000 | sample purged |
| Cpnd Variable | | Local Compound Variable |

| | Compounds | QUANT SIG MASS | RT | EXP RT | REL RT | RESPONSE | AMOUNTS CAL-AMT ( ug/l) | ON-COL ( ug/l) |
|---|---|---|---|---|---|---|---|---|
| * 1 | Pentafluorobenzene | 168 | 4.178 | 4.178 | (1.000) | 513315 | 50.0000 | |
| 135 | 1,4-Dioxane | 88 | 5.595 | 5.595 | (1.339) | 71107 | 1000.00 | 1515.41 |
| 140 | 1,3-Butadiene | 54 | 1.164 | 1.164 | (0.279) | 184262 | 50.0000 | 52.30 |
| 2 | Dichlorodifluoromethane | 85 | 0.973 | 0.973 | (0.233) | 203948 | 50.0000 | 56.75 |
| 3 | Chloromethane | 50 | 1.078 | 1.078 | (0.258) | 336635 | 50.0000 | 71.48 |
| 5 | Vinyl Chloride | 62 | 1.141 | 1.141 | (0.273) | 259230 | 50.0000 | 57.81 |
| 6 | Bromomethane | 94 | 1.340 | 1.340 | (0.321) | 150865 | 50.0000 | 44.67 |
| 7 | Chloroethane | 64 | 1.404 | 1.404 | (0.336) | 166089 | 50.0000 | 53.21 |
| 8 | Trichlorofluoromethane | 101 | 1.561 | 1.561 | (0.374) | 302717 | 50.0000 | 48.24 |
| 9 | Acrolein | 56 | 1.445 | 1.445 | (0.346) | 25553 | 100.000 | 73.55 |
| 10 | Acetone | 43 | 1.966 | 1.966 | (0.471) | 151350 | 100.000 | 105.08 |
| 11 | 1,1-Dichloroethene | 96 | 1.913 | 1.913 | (0.458) | 175852 | 50.0000 | 45.13 |
| 15 | Iodomethane | 142 | 2.026 | 2.026 | (0.485) | 422908 | 100.000 | 83.53 |
| 16 | Acrylonitrile | 53 | 2.528 | 2.528 | (0.605) | 180003 | 100.000 | 136.23 |
| 17 | Methylene Chloride | 84 | 2.300 | 2.300 | (0.550) | 271668 | 50.0000 | 50.83 |
| 18 | Methyl tert-butyl ether | 73 | 2.528 | 2.528 | (0.605) | 705957 | 50.0000 | 55.36 |
| 19 | Carbon Disulfide | 76 | 2.067 | 2.067 | (0.495) | 1169630 | 100.000 | 114.74 |
| 20 | trans-1,2-Dichloroethene | 96 | 2.528 | 2.528 | (0.605) | 222634 | 50.0000 | 51.06 |
| 21 | Vinyl Acetate | 43 | 2.993 | 2.993 | (0.716) | 1318881 | 100.000 | 117.82 |
| 22 | 1,1-Dichloroethane | 63 | 2.918 | 2.918 | (0.699) | 429126 | 50.0000 | 56.07 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 24 | 2-Butanone | 43 | 3.570 | 3.570 (0.855) | 214293 | 100.000 | 139.04 |
| 26 | 2,2-Dichloropropane | 77 | 3.507 | 3.507 (0.839) | 300254 | 50.0000 | 46.21 |

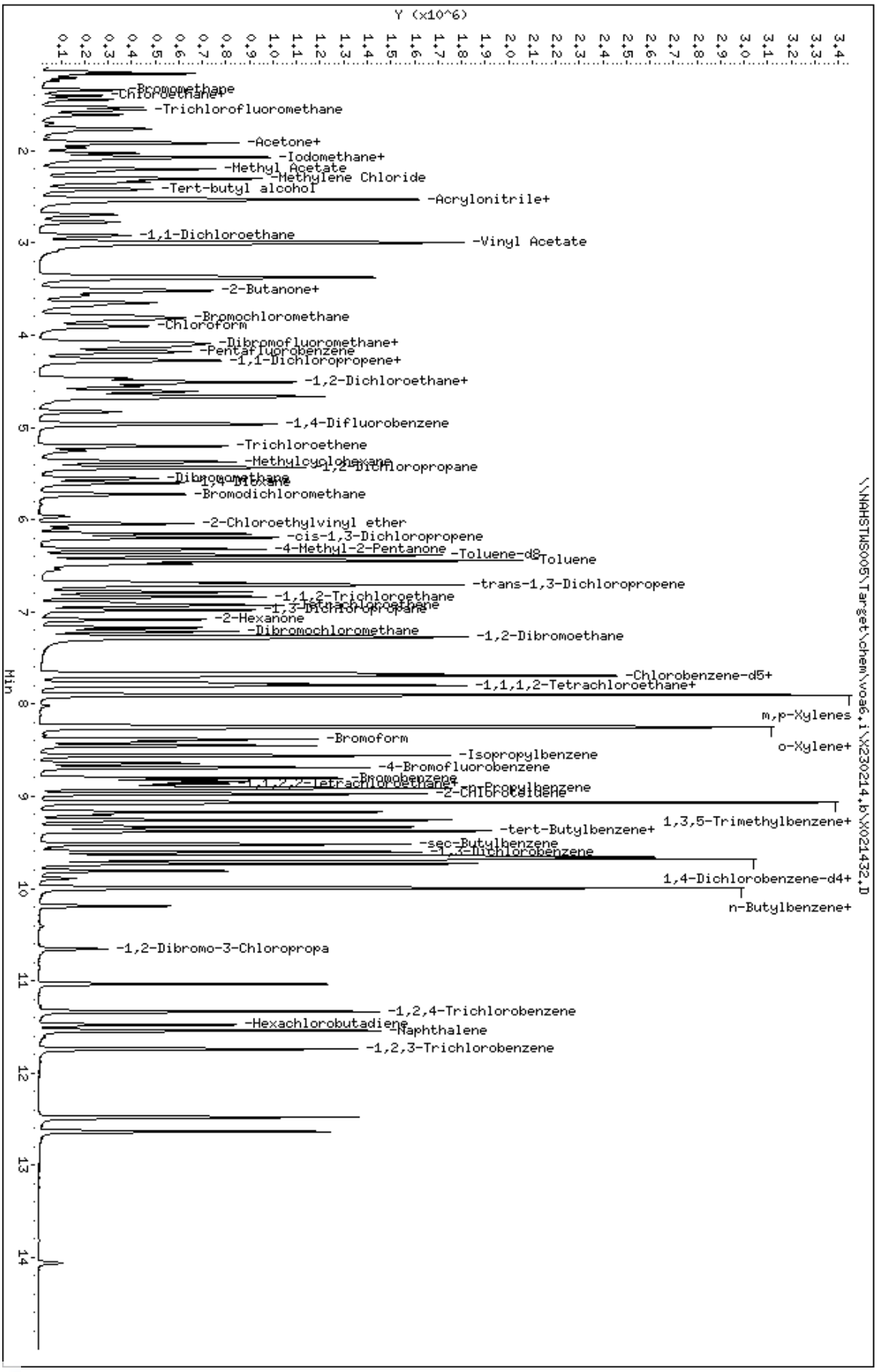
| | | QUANT SIG MASS | RT | EXP RT | REL RT | RESPONSE | AMOUNTS CAL-AMT ( ug/l) | ON-COL ( ug/l) |
|---|---|---|---|---|---|---|---|---|
| | 27 cis-1,2-Dichloroethene | 96 | 3.522 | 3.522 | (0.843) | 270753 | 50.0000 | 51.02 |
| | 28 Chloroform | 83 | 3.904 | 3.904 | (0.935) | 441327 | 50.0000 | 51.45 |
| | 29 Bromochloromethane | 128 | 3.792 | 3.792 | (0.908) | 141071 | 50.0000 | 48.55 |
| $ | 30 Dibromofluoromethane | 113 | 4.095 | 4.095 | (0.980) | 255537 | 50.0000 | 51.85 |
| | 31 1,1,1-Trichloroethane | 97 | 4.080 | 4.080 | (0.977) | 339783 | 50.0000 | 49.93 |
| | 32 1,1-Dichloropropene | 75 | 4.279 | 4.279 | (0.862) | 296229 | 50.0000 | 50.72 |
| | 33 1,2-Dichloroethane | 62 | 4.553 | 4.553 | (0.917) | 357486 | 50.0000 | 53.04 |
| | 34 Carbon Tetrachloride | 117 | 4.260 | 4.260 | (0.858) | 269190 | 50.0000 | 43.16 |
| $ | 35 1,2-Dichloroethane-d4 | 65 | 4.470 | 4.470 | (1.070) | 294366 | 50.0000 | 56.54 |
| * | 36 1,4-Difluorobenzene | 114 | 4.965 | 4.965 | (1.000) | 822523 | 50.0000 | |
| | 37 Benzene | 78 | 4.508 | 4.508 | (0.908) | 1002213 | 50.0000 | 51.02 |
| | 38 Trichloroethene | 130 | 5.205 | 5.205 | (1.048) | 269971 | 50.0000 | 48.46 |
| | 39 Bromodichloromethane | 83 | 5.722 | 5.722 | (1.153) | 357841 | 50.0000 | 48.54 |
| | 41 2-Chloroethylvinyl ether | 63 | 6.044 | 6.044 | (1.217) | 250048 | 100.000 | 119.23 |
| | 42 1,2-Dichloropropane | 63 | 5.433 | 5.433 | (1.094) | 276870 | 50.0000 | 52.99 |
| | 44 Dibromomethane | 93 | 5.550 | 5.550 | (1.118) | 172051 | 50.0000 | 48.44 |
| | 45 4-Methyl-2-Pentanone | 43 | 6.322 | 6.322 | (0.825) | 539273 | 100.000 | 132.22 |
| | 46 cis-1,3-Dichloropropene | 75 | 6.153 | 6.153 | (1.239) | 459272 | 50.0000 | 53.05 |
| * | 47 Chlorobenzene-d5 | 117 | 7.668 | 7.668 | (1.000) | 763052 | 50.0000 | |
| $ | 48 Toluene-d8 | 98 | 6.386 | 6.386 | (0.833) | 975496 | 50.0000 | 51.73 |
| | 50 Toluene | 91 | 6.442 | 6.442 | (0.840) | 1034445 | 50.0000 | 49.04 |
| | 51 trans-1,3-Dichloropropene | 75 | 6.678 | 6.678 | (1.345) | 389525 | 50.0000 | 54.21 |
| | 52 2-Hexanone | 43 | 7.083 | 7.083 | (0.924) | 364800 | 100.000 | 131.46 |
| | 53 1,1,2-Trichloroethane | 83 | 6.835 | 6.835 | (0.891) | 216536 | 50.0000 | 51.17 |
| | 54 1,3-Dichloropropane | 76 | 6.978 | 6.978 | (0.910) | 446909 | 50.0000 | 53.66 |
| | 55 Dibromochloromethane | 129 | 7.173 | 7.173 | (0.935) | 299496 | 50.0000 | 49.04 |
| | 56 Tetrachloroethene | 164 | 6.925 | 6.925 | (0.903) | 186469 | 50.0000 | 42.73 |
| | 57 1,2-Dibromoethane | 107 | 7.259 | 7.259 | (0.947) | 270857 | 50.0000 | 51.19 |
| | 58 1-Chlorohexane | 55 | 7.694 | 7.694 | (1.550) | 177247 | 50.0000 | 44.59 |
| | 59 Chlorobenzene | 112 | 7.694 | 7.694 | (1.003) | 698252 | 50.0000 | 46.67 |
| | 60 1,1,1,2-Tetrachloroethane | 131 | 7.773 | 7.773 | (1.014) | 265121 | 50.0000 | 47.62 |
| | 61 Ethylbenzene | 106 | 7.799 | 7.799 | (1.017) | 333879 | 50.0000 | 47.38 |
| | 62 m,p-Xylenes | 106 | 7.900 | 7.900 | (1.030) | 841318 | 100.000 | 92.61 |
| | 63 o-Xylene | 106 | 8.241 | 8.241 | (1.075) | 424228 | 50.0000 | 47.31 |
| | 64 Styrene | 104 | 8.256 | 8.256 | (1.077) | 740831 | 50.0000 | 49.29 |
| | 66 Bromoform | 173 | 8.410 | 8.410 | (1.097) | 210215 | 50.0000 | 49.68 |
| | 67 Isopropylbenzene | 105 | 8.560 | 8.560 | (1.116) | 949874 | 50.0000 | 46.37 |
| | 68 1,1,2,2-Tetrachloroethane | 83 | 8.837 | 8.837 | (0.915) | 356982 | 50.0000 | 54.31 |
| $ | 69 4-Bromofluorobenzene | 95 | 8.687 | 8.687 | (1.133) | 382224 | 50.0000 | 54.22 |
| * | 70 1,4-Dichlorobenzene-d4 | 152 | 9.662 | 9.662 | (1.000) | 412363 | 50.0000 | |
| | 71 1,2,3-Trichloropropane | 75 | 8.863 | 8.863 | (0.917) | 287966 | 50.0000 | 62.75(M) |
| | 73 n-Propylbenzene | 91 | 8.908 | 8.908 | (0.922) | 1114345 | 50.0000 | 48.78 |
| | 74 Bromobenzene | 156 | 8.803 | 8.803 | (0.911) | 321148 | 50.0000 | 47.46 |
| | 75 1,3,5-Trimethylbenzene | 105 | 9.066 | 9.066 | (0.938) | 849248 | 50.0000 | 50.33 |
| | 76 2-Chlorotoluene | 91 | 8.972 | 8.972 | (0.929) | 757838 | 50.0000 | 50.56 |
| | 77 4-Chlorotoluene | 91 | 9.070 | 9.070 | (0.939) | 871941 | 50.0000 | 51.02 |
| | 78 tert-Butylbenzene | 119 | 9.332 | 9.332 | (0.966) | 663229 | 50.0000 | 48.01 |
| | 79 1,2,4-Trimethylbenzene | 105 | 9.377 | 9.377 | (0.971) | 883146 | 50.0000 | 49.74 |
| | 81 sec-Butylbenzene | 105 | 9.519 | 9.519 | (0.985) | 901126 | 50.0000 | 49.03 |
| | 82 p-Isopropyltoluene | 119 | 9.647 | 9.647 | (0.998) | 823215 | 50.0000 | 49.98 |
| | 83 1,3-Dichlorobenzene | 146 | 9.602 | 9.602 | (0.994) | 542727 | 50.0000 | 48.33 |
| | 84 1,4-Dichlorobenzene | 146 | 9.681 | 9.681 | (1.002) | 569086 | 50.0000 | 46.44 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 87 | n-Butylbenzene | 91 | 9.992 | 9.992 (1.034) | 690572 | 50.0000 | 43.74 |
| 88 | 1,2-Dichlorobenzene | 146 | 9.992 | 9.992 (1.034) | 548290 | 50.0000 | 47.41 |

| | Compounds | QUANT SIG MASS | RT | EXP RT | REL RT | RESPONSE | AMOUNTS CAL-AMT ( ug/l) | ON-COL ( ug/l) |
|---|---|---|---|---|---|---|---|---|
| 89 | 1,2-Dibromo-3-Chloropropane | 155 | 10.655 | 10.655 | (1.103) | 62433 | 50.0000 | 59.39 |
| 90 | 1,2,4-Trichlorobenzene | 180 | 11.334 | 11.334 | (1.173) | 401848 | 50.0000 | 55.05 |
| 91 | Hexachlorobutadiene | 225 | 11.476 | 11.476 | (1.188) | 142006 | 50.0000 | 43.96 |
| 92 | Naphthalene | 128 | 11.540 | 11.540 | (1.194) | 1019215 | 50.0000 | 61.37 |
| 93 | 1,2,3-Trichlorobenzene | 180 | 11.739 | 11.739 | (1.215) | 393289 | 50.0000 | 56.26 |
| M 94 | 1,2-Dichloroethylene (total) | 96 | | | | 493387 | 100.000 | (a) |
| 141 | Cyclohexane | 56 | 4.121 | 4.121 | (0.987) | 263029 | 50.0000 | 50.81 |
| 138 | Freon TF | 101 | 1.913 | 1.913 | (0.458) | 147102 | 50.0000 | 39.03 |
| 147 | Methylcyclohexane | 55 | 5.377 | 5.377 | (1.083) | 523187 | 50.0000 | 51.96 |
| 146 | Methyl Acetate | 43 | 2.228 | 2.228 | (0.533) | 158202 | 50.0000 | 68.49(M) |
| 148 | Tert-Butyl alcohol | 59 | 2.420 | 2.420 | (0.579) | 558117 | 1000.00 | 1570.23 |
| 149 | Isopropyl Alcohol | 45 | 2.086 | 2.086 | (0.499) | 323006 | 1000.00 | 1740.09 |

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.




Data File: \\NAHSTWS005\Target\chem\voa6,i\X230214,b\X021432.D
Date : 14-FEB-2023 21:16
Client ID: CCV-END
Sample Info: CCV-END;CCV-END;2;;
Purge Volume: 5.0
Column phase: DB624

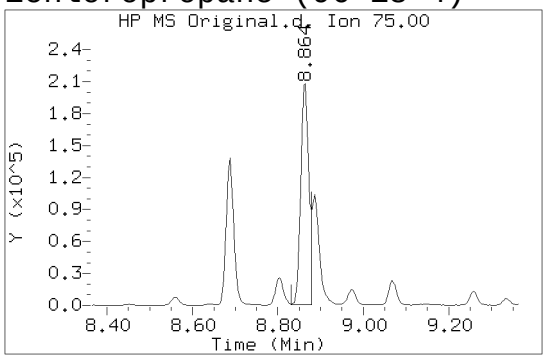
Instrument: voa6,i
Operator: PC
Column diameter: 0.18

Data File : \\NAHSTWS005\Target\chem\voa6.i\X230214.b\X021432.D
Inj Date : 14-FEB-2023 21:16
InstruID : voa6.i
LabSampID : CCV-END

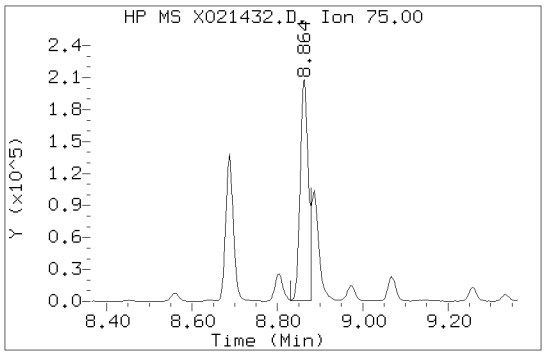
## 1,2,3-Trichloropropane (96-18-4)

Reason Code:

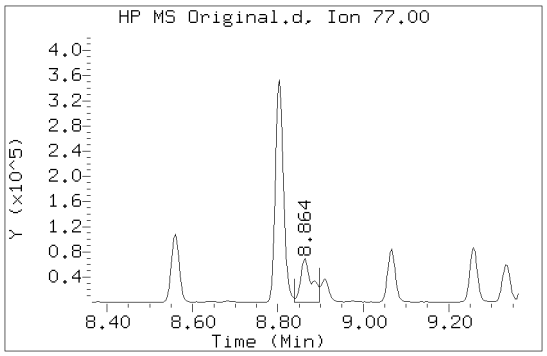
BEFORE
MASS
75
AREA
287966
HEIGHT
207699
21-Feb-2023
16:57
Linh
Pham



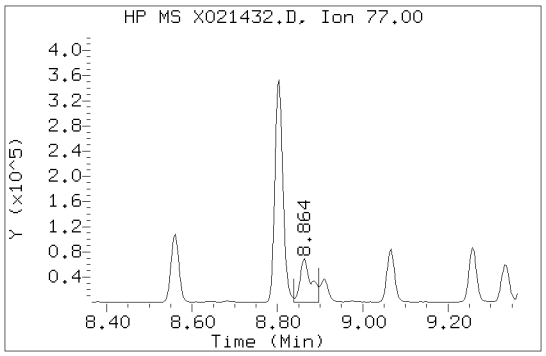

AFTER
MASS
75
AREA
287966
HEIGHT
207699
21-Feb-2023
16:57
Linh
Pham




BEFORE
MASS
77
AREA
131678
HEIGHT
68689
21-Feb-2023
16:57
Linh
Pham



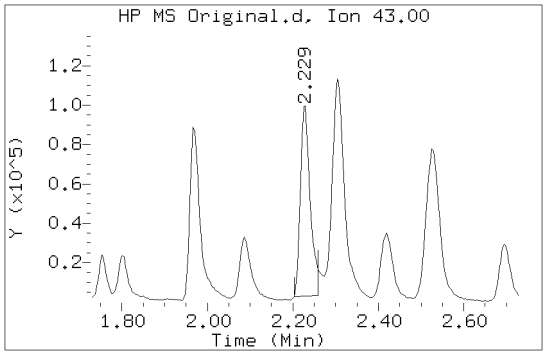

AFTER
MASS
77
AREA
131678
HEIGHT
68689
21-Feb-2023
16:57
Linh
Pham



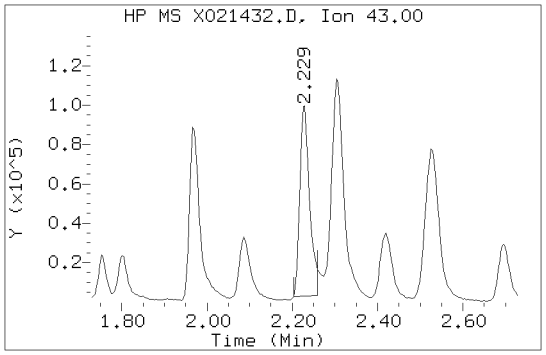

## Methyl Acetate (79-20-9)

Reason Code:

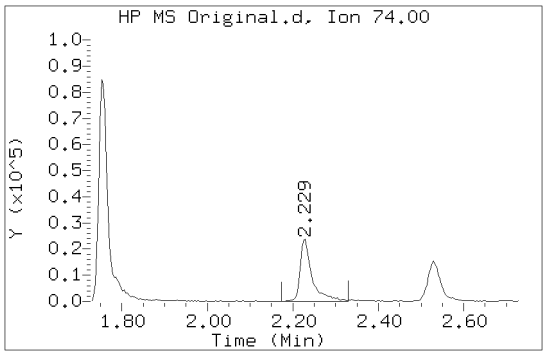
BEFORE
MASS
43
AREA
158202
HEIGHT
96825
21-Feb-2023
16:57
Linh
Pham



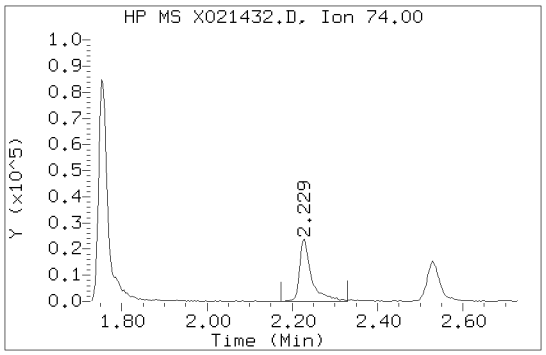

AFTER
MASS
43
AREA
158202
HEIGHT
96825
21-Feb-2023
16:57
Linh
Pham




BEFORE
MASS
74
AREA
47702
HEIGHT
23808
21-Feb-2023
16:57
Linh
Pham




AFTER
MASS
74
AREA
47702
HEIGHT
23808
21-Feb-2023
16:57
Linh
Pham



# HS23020265-GCSEMI-RSK-175

ALS WO# HS23020265

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Form 1

# Organic Analysis Data Sheet

## Semi-Volatiles by RSK-175

Workorder

HS23020265

Client

Aptim Environmental & Infrastucture, Inc.

Project

LHAAP46 Febuary 2023

02/28/2023

ALS Environmental–Houston Laboratory
10450 Stancliff Road, Suite 210, Houston, TX 77099
Phone (281) 530-5656 Fax (281) 530-5887
www.alsglobal.com

# Form 1 - Organic Analysis Data Sheet

**Client** Aptim Environmental & Infrastucture, Inc.

**Project** LHAAP46 Febuary 2023

Workorder
**HS23020265**

## Semi-Volatiles by RSK-175

| HS23020265-01 | Collected | Received | Matrix | Basis |
|---|---|---|---|---|
| **LHSMW21-230206** | 02/06/23 07:35 | 02/07/23 11:00 | Water | Wet |

| Analyte | Units | Result | Q | DL | LOD | LOQ | DF | Analysis Date | Run ID | DataFile |
|---|---|---|---|---|---|---|---|---|---|---|
| Ethane | mg/L | 0.00100 | U | 0.000144 | 0.00100 | 0.00100 | 1 | 02/09/23 07:55 | FID-4_428169 | 004 |
| Ethene | mg/L | 0.00100 | U | 0.000234 | 0.00100 | 0.00100 | 1 | 02/09/23 07:55 | FID-4_428169 | 004 |
| Methane | mg/L | 0.00189 | | 0.000107 | 0.000500 | 0.000500 | 1 | 02/09/23 07:55 | FID-4_428169 | 004 |

# Form 1 - Organic Analysis Data Sheet

**Client** Aptim Environmental & Infrastucture, Inc.

**Project** LHAAP46 Febuary 2023

Workorder
**HS23020265**

## Semi-Volatiles by RSK-175

| HS23020265-02 | | Collected | Received | Matrix | Basis |
|---|---|---|---|---|---|
| **46WW16-230206** | | 02/06/23 08:20 | 02/07/23 11:00 | Water | Wet |

| Analyte | Units | Result | Q | DL | LOD | LOQ | DF | Analysis Date | Run ID | DataFile |
|---|---|---|---|---|---|---|---|---|---|---|
| Ethane | mg/L | 0.00100 | U | 0.000144 | 0.00100 | 0.00100 | 1 | 02/09/23 08:05 | FID-4_428169 | 005 |
| Ethene | mg/L | 0.00100 | U | 0.000234 | 0.00100 | 0.00100 | 1 | 02/09/23 08:05 | FID-4_428169 | 005 |
| Methane | mg/L | 0.00658 | | 0.000107 | 0.000500 | 0.000500 | 1 | 02/09/23 08:05 | FID-4_428169 | 005 |

# Form 1 - Organic Analysis Data Sheet

**Client** Aptim Environmental & Infrastucture, Inc.

**Project** LHAAP46 Febuary 2023

Workorder
**HS23020265**

## Semi-Volatiles by RSK-175

| HS23020265-04 | Collected | Received | Matrix | Basis |
|---|---|---|---|---|
| **46WW02-230206** | 02/06/23 10:00 | 02/07/23 11:00 | Water | Wet |

| Analyte | Units | Result | Q | DL | LOD | LOQ | DF | Analysis Date | Run ID | DataFile |
|---|---|---|---|---|---|---|---|---|---|---|
| Ethane | mg/L | 0.00100 | U | 0.000144 | 0.00100 | 0.00100 | 1 | 02/09/23 09:26 | FID-4_428169 | 006 |
| Ethene | mg/L | 0.00100 | U | 0.000234 | 0.00100 | 0.00100 | 1 | 02/09/23 09:26 | FID-4_428169 | 006 |
| Methane | mg/L | 0.00174 | | 0.000107 | 0.000500 | 0.000500 | 1 | 02/09/23 09:26 | FID-4_428169 | 006 |

# Form 1 - Organic Analysis Data Sheet

**Client** Aptim Environmental & Infrastucture, Inc.

**Project** LHAAP46 Febuary 2023

Workorder
**HS23020265**

## Semi-Volatiles by RSK-175

MBLK-230209

| Collected | Received | Matrix | Basis |
|---|---|---|---|
| NA | NA | Aqueous | Wet |

**MBLK-230209**

| Analyte | Units | Result | Q | DL | LOD | LOQ | DF | Analysis Date | Run ID | DataFile |
|---|---|---|---|---|---|---|---|---|---|---|
| Ethane | mg/L | 0.00100 | U | 0.000144 | 0.00100 | 0.00100 | 1 | 02/09/23 07:36 | FID-4_428169 | 002 |
| Ethene | mg/L | 0.00100 | U | 0.000234 | 0.00100 | 0.00100 | 1 | 02/09/23 07:36 | FID-4_428169 | 002 |
| Methane | mg/L | 0.000500 | U | 0.000107 | 0.000500 | 0.000500 | 1 | 02/09/23 07:36 | FID-4_428169 | 002 |

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Form 3A

# Matrix Spike/Spike Duplicate Recovery

## Semi-Volatiles by RSK-175

Workorder

HS23020265

Client

Aptim Environmental & Infrastucture, Inc.

Project

LHAAP46 Febuary 2023

02/28/2023

ALS Environmental–Houston Laboratory
10450 Stancliff Road, Suite 210, Houston, TX 77099
Phone (281) 530-5656 Fax (281) 530-5887
www.alsglobal.com

# Form 3A - Matrix Spike/Spike Duplicate Recovery

**Client** Aptim Environmental & Infrastucture, Inc.

**Project** LHAAP46 Febuary 2023

Workorder
**HS23020265**

| 46WW02-230206 | | HS23020265-04 | | HS23020265-04MS | | | | HS23020265-04MSD | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Sample Matrix** | Aqueous | **Run Date** | 02/09/23 | 02/09/23 | | | | 02/09/23 | | | | | | |
| **Units** | ug/L | **Run Time** | 09:26 | 10:07 | | | | 10:16 | | | | | | |
| | | **Data File** | 006.D | 007.D | | | | 008.D | | | | | | |
| Analyte | %R Limits | DF | Result | MS Result | Spike Added | %R | Q | MSD Result | Spike Added | %R | Q | RPD Limit | RPD | Q |
| Ethane | 75-125 | 1 | 0 | 24.20 | 18.04 | 134 | * | 24.45 | 18.04 | 136 | * | 30 | 1.00 | |
| Ethene | 75-125 | 1 | 0 | 20.89 | 16.80 | 124 | | 20.97 | 16.80 | 125 | | 30 | 0.400 | |
| Methane | 75-125 | 1 | 1.740 | 10.61 | 9.647 | 92 | | 10.73 | 9.647 | 93 | | 30 | 1.10 | |

# - %Recovery / RPD Flag  * - %Recovery / RPD Outside Limits  OL - Outside Limits

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Form 3B

# Laboratory Control Sample Recovery

## Semi-Volatiles by RSK-175

Workorder

HS23020265

Client

Aptim Environmental & Infrastucture, Inc.

Project

LHAAP46 Febuary 2023

02/28/2023

ALS Environmental–Houston Laboratory
10450 Stancliff Road, Suite 210, Houston, TX 77099
Phone (281) 530-5656 Fax (281) 530-5887
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# Form 3B - Laboratory Control Sample Recovery

**Client** Aptim Environmental & Infrastucture, Inc.

**Project** LHAAP46 Febuary 2023

Workorder
**HS23020265**

## Semi-Volatiles by RSK-175

| FID-4_428169 | | | QC ID | LCS-230209 | | | |
|---|---|---|---|---|---|---|---|
| QC Matrix | Aqueous | Units | Run Date | 02/09/23 | | | |
| | | mg/L | Run Time | 07:44 | | | |
| Analyte | | %R Limits | Spike Added | LCS Result | %R | Q | |
| Ethane | | 75-125 | 0.01804 | 0.0205 | 113 | | |
| Ethene | | 75-125 | 0.0168 | 0.0175 | 104 | | |
| Methane | | 75-125 | 0.009647 | 0.00879 | 91 | | |

# - %Recovery / RPD Flag  * - %Recovery / RPD Outside Limits

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Form 4

# Method Blank Summary

## Semi-Volatiles by RSK-175

Workorder

HS23020265

Client

Aptim Environmental & Infrastucture, Inc.

Project

LHAAP46 Febuary 2023

02/28/2023

ALS Environmental–Houston Laboratory
10450 Stancliff Road, Suite 210, Houston, TX 77099
Phone (281) 530-5656 Fax (281) 530-5887
www.alsglobal.com

# Form 4 - Method Blank Summary

**Client** Aptim Environmental & Infrastucture, Inc.

**Project** LHAAP46 Febuary 2023

Workorder
**HS23020265**

## Semi-Volatiles by RSK-175

| Client Sample ID | Type | Lab Sample ID | File ID | Date Analyzed | Run ID |
|---|---|---|---|---|---|
| METHOD BLANK | MBLK | MBLK-230209 | 002.D | 02/09/23 07:36 | FID-4_428169 |
| LCS-230209 | LCS | LCS-230209 | 003.D | 02/09/23 07:44 | FID-4_428169 |
| LHSMW21-230206 | SAMP | HS23020265-01 | 004.D | 02/09/23 07:55 | FID-4_428169 |
| 46WW16-230206 | SAMP | HS23020265-02 | 005.D | 02/09/23 08:05 | FID-4_428169 |
| 46WW02-230206 | SAMP | HS23020265-04 | 006.D | 02/09/23 09:26 | FID-4_428169 |
| 46WW02-230206 | MS | HS23020265-04MS | 007.D | 02/09/23 10:07 | FID-4_428169 |
| 46WW02-230206 | MSD | HS23020265-04MSD | 008.D | 02/09/23 10:16 | FID-4_428169 |

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Form 6

# Initial Calibration Data

## Semi-Volatiles by RSK-175

Workorder

HS23020265

Client

Aptim Environmental & Infrastucture, Inc.

Project

LHAAP46 Febuary 2023

02/28/2023

ALS Environmental–Houston Laboratory
10450 Stancliff Road, Suite 210, Houston, TX 77099
Phone (281) 530-5656 Fax (281) 530-5887
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# Initial Calibration Data

**Client** Aptim Environmental & Infrastucture, Inc.
**Project** LHAAP46 Febuary 2023

**Workorder** HS23020265

**RunID** FID-4_322102

## Semi-Volatiles by RSK-175

**ICAL Start Date** 24-JAN-2017 0906
**ICAL End Date** 24-JAN-2017 1113

**Calibration Files**

**Calibration File Names**

**Level 1** ..FID-4.i\170124.b\001.D
**Level 2** ..FID-4.i\170124.b\002.D
**Level 3** ..FID-4.i\170124.b\003.D
**Level 4** ..FID-4.i\170124.b\004.D
**Level 5** ..FID-4.i\170124.b\005.D
**Level 6** ..FID-4.i\170124.b\006.D
**Level 7** ..FID-4.i\170124.b\007.D

| Compound | Level 1 10.00 Level 7 1000.0 | Level 2 25.00 | Level 3 50.00 | Level 4 100.00 | Level 5 250.00 | Level 6 500.00 | Curve | b | m1 | m2 | %RSD or $R^2$ | Q |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Methane | 969<br>1082 | 978 | 1020 | 881 | 961 | 931 | AVRG | | 974 | | 6.55041 | |
| Ethene | 536<br>829 | 567 | 565 | 516 | 665 | 426 | AVRG | | 586 | | 21.93197 | |
| Ethane | 602<br>999 | 670 | 659 | 597 | 809 | 818 | AVRG | | 736 | | 19.88517 | |
| Propane | 500<br>96509 | 1279 | 2602 | 4785 | 18294 | 38286 | QUAD | 0.97987 | 0.00153 | -4.583e-00 | 0.99914 | |
| N-Butane | 438<br>114164 | 936 | 2034 | 3864 | 18446 | 42817 | QUAD | 2.46870 | 0.00183 | -5.537e-00 | 0.99808 | |
| Pentane | 115<br>488 | 3945 | 2080 | 950 | 501 | 412 | AVRG | | 1213 | | 112 | * |

NE - Not Evaluated, AVRG - Averaged, LINR - Linear Regression, WLIN - Weighted Linear, QUAD - Quadratic, * - Curve Fit Outside Limits

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Form 6I

# Initial Calibration Verification (ICV)

## Semi-Volatiles by RSK-175

Workorder

HS23020265

Client

Aptim Environmental & Infrastucture, Inc.

Project

LHAAP46 Febuary 2023

02/28/2023

ALS Environmental–Houston Laboratory
10450 Stancliff Road, Suite 210, Houston, TX 77099
Phone (281) 530-5656 Fax (281) 530-5887
www.alsglobal.com

# Initial Calibration Verification (ICV)

**Client** Aptim Environmental & Infrastucture, Inc.

**Project** LHAAP46 Febuary 2023

**Workorder** HS23020265

**RunID** FID-4_322102

| Compound | Amount Added | Amount Recovered | % Recovered | Limits | Q |
|---|---|---|---|---|---|
| Methane | 9.647 | 9.597 | 99.49 | 75-125 | |
| Ethene | 16.800 | 19.090 | 113.63 | 75-125 | |
| Ethane | 18.043 | 19.657 | 108.95 | 75-125 | |
| Propane | 26.463 | 27.238 | 102.93 | 75-125 | |
| N-Butane | 34.955 | 36.010 | 103.02 | 75-125 | |

01255603

right solutions.
right partner.

Form 7

# Continuing Calibration Verification (CCV)

## Semi-Volatiles by RSK-175

Workorder

HS23020265

Client

Aptim Environmental & Infrastucture, Inc.

Project

LHAAP46 Febuary 2023

02/28/2023

ALS Environmental–Houston Laboratory
10450 Stancliff Road, Suite 210, Houston, TX 77099
Phone (281) 530-5656 Fax (281) 530-5887
www.alsglobal.com

# Continuing Calibration Verification (CCV)

**Client** Aptim Environmental & Infrastucture, Inc.
**Project** LHAAP46 Febuary 2023

**Workorder**
**HS23020265**

**RunID**
FID-4_428169

Instrument ID FID-4.i Injection Date 09-FEB-2023 0727
Lab File ID 001.D ICAL Date(s) 24-JAN-2017 24-JAN-2017
Analysis Type WATER ICAL Times 0906 1113
Lab Sample ID RSK-CCV Quant Type ESTD

| Compound | $\overline{RRF}$ / $\overline{RRF}$ / Amount | RF250 | CCV RRF250 | Min RRF | %D / %D / %DRIFT | Max %D / %D / %DRIFT | Curve CURVE TYPE | Q |
|---|---|---|---|---|---|---|---|---|
| Methane | 975 | 865 | 865 | 0.010 | 11.23516 | 20.0 | Averaged | |
| Ethene | 586 | 605 | 605 | 0.010 | -3.20096 | 20.0 | Averaged | |
| Ethane | 719 | 755 | 755 | 0.010 | -4.97042 | 20.0 | Averaged | |

# Continuing Calibration Verification (CCV)

**Client** Aptim Environmental & Infrastucture, Inc.
**Project** LHAAP46 Febuary 2023

**Workorder**
**HS23020265**

**RunID**
FID-4_428169

Instrument ID FID-4.i Injection Date 09-FEB-2023 1100
Lab File ID 011.D ICAL Date(s) 24-JAN-2017 24-JAN-2017
Analysis Type WATER ICAL Times 0906 1113
Lab Sample ID RSK-CCV Quant Type ESTD

| Compound | $\overline{RRF}$ / $\overline{RRF}$ / Amount | RF250 | CCV RRF250 | Min RRF | %D / %D / %DRIFT | Max %D / %D / %DRIFT | Curve CURVE TYPE | Q |
|---|---|---|---|---|---|---|---|---|
| Methane | 975 | 829 | 829 | 0.010 | 14.95629 | 20.0 | Averaged | |
| Ethene | 586 | 586 | 586 | 0.010 | -0.02975 | 20.0 | Averaged | |
| Ethane | 719 | 765 | 765 | 0.010 | -6.38009 | 20.0 | Averaged | |

# Continuing Calibration Verification (CCV)

**Client** Aptim Environmental & Infrastucture, Inc.
**Project** LHAAP46 Febuary 2023

**Workorder**
**HS23020265**

**RunID**
FID-4_428169

Instrument ID FID-4.i Injection Date 09-FEB-2023 1149
Lab File ID 013.D ICAL Date(s) 24-JAN-2017 24-JAN-2017
Analysis Type WATER ICAL Times 0906 1113
Lab Sample ID RSK-CCV Quant Type ESTD

| Compound | $\overline{RRF}$ / $\overline{RRF}$ / Amount | RF250 | CCV RRF250 | Min RRF | %D / %D / %DRIFT | Max %D / %D / %DRIFT | Curve CURVE TYPE | Q |
|---|---|---|---|---|---|---|---|---|
| Methane | 975 | 878 | 878 | 0.010 | 9.95934 | 20.0 | Averaged | |
| Ethene | 586 | 591 | 591 | 0.010 | -0.94160 | 20.0 | Averaged | |
| Ethane | 719 | 833 | 833 | 0.010 | -15.74709 | 20.0 | Averaged | |

01255607

right solutions.
right partner.

# Analysis Run Log

## Semi-Volatiles by RSK-175

Workorder

HS23020265

Client

Aptim Environmental & Infrastucture, Inc.

Project

LHAAP46 Febuary 2023

02/28/2023

ALS Environmental–Houston Laboratory
10450 Stancliff Road, Suite 210, Houston, TX 77099
Phone (281) 530-5656 Fax (281) 530-5887
www.alsglobal.com

# Form 13 - Analysis Run Log

**Client** Aptim Environmental & Infrastucture, Inc.

**Project** LHAAP46 Febuary 2023

Workorder
**HS23020265**

RunID
FID-4_322102

**Run ID** FID-4_322102 **Start Date** 01/24/17 **EndDate** 01/24/17

| Inj. Time | Client Sample ID | Type | Lab Sample ID | File ID | Analysis Date | DF |
|---|---|---|---|---|---|---|
| 09:06 | ICAL1 | ICAL1 | ICAL1 | 001.D | 01/24/17 | 1 |
| 09:30 | ICAL2 | ICAL2 | ICAL2 | 002.D | 01/24/17 | 1 |
| 09:59 | ICAL3 | ICAL3 | ICAL3 | 003.D | 01/24/17 | 1 |
| 10:15 | ICAL4 | ICAL4 | ICAL4 | 004.D | 01/24/17 | 1 |
| 10:39 | ICAL5 | ICAL5 | ICAL5 | 005.D | 01/24/17 | 1 |
| 10:57 | ICAL6 | ICAL6 | ICAL6 | 006.D | 01/24/17 | 1 |
| 11:13 | ICAL7 | ICAL7 | ICAL7 | 007.D | 01/24/17 | 1 |
| 12:05 | ICV | ICV | ICV | 008.D | 01/24/17 | 1 |

# Form 13 - Analysis Run Log

**Client** Aptim Environmental & Infrastucture, Inc.

**Project** LHAAP46 Febuary 2023

Workorder
**HS23020265**

RunID
FID-4_428169

**Run ID** FID-4_428169 **Start Date** 02/09/23 **EndDate** 02/09/23

| Inj. Time | Client Sample ID | Type | Lab Sample ID | File ID | Analysis Date | DF |
|---|---|---|---|---|---|---|
| 07:27 | RSK-CCV | CCV | RSK-CCV | 001.D | 02/09/23 | 1 |
| 07:36 | MBLK-230209 | MBLK | MBLK-230209 | 002.D | 02/09/23 | 1 |
| 07:44 | LCS-230209 | LCS | LCS-230209 | 003.D | 02/09/23 | 1 |
| 07:55 | LHSMW21-230206 | SAMP | HS23020265-01 | 004.D | 02/09/23 | 1 |
| 08:05 | 46WW16-230206 | SAMP | HS23020265-02 | 005.D | 02/09/23 | 1 |
| 09:26 | 46WW02-230206 | SAMP | HS23020265-04 | 006.D | 02/09/23 | 1 |
| 10:07 | HS23020265-04MS | MS | HS23020265-04MS | 007.D | 02/09/23 | 1 |
| 10:16 | HS23020265-04MSD | MSD | HS23020265-04MSD | 008.D | 02/09/23 | 1 |
| 11:00 | RSK-CCV | CCV | RSK-CCV | 011.D | 02/09/23 | 1 |
| 11:49 | RSK-CCV | CCV | RSK-CCV | 013.D | 02/09/23 | 1 |

01255610

right solutions.
right partner.

# Raw Data FID-4 322102

# Semi-Volatiles by RSK-175

Workorder

HS23020265

Client

Aptim Environmental & Infrastucture, Inc.

Project

LHAAP46 Febuary 2023

02/28/2023

ALS Environmental–Houston Laboratory
10450 Stancliff Road, Suite 210, Houston, TX 77099
Phone (281) 530-5656 Fax (281) 530-5887
www.alsglobal.com

Data File: \\NAHSTWS005\Target\chem\FID-4.i\170124.b\001.D Page 1
Report Date: 28-Sep-2022 10:00

ALS Laboratory Group

Dissolved Gases Analysis

Data file : \\NAHSTWS005\Target\chem\FID-4.i\170124.b\001.D
Lab Smp Id: ICAL1 Client Smp ID: ICAL1
Inj Date : 24-JAN-2017 09:06
Operator : JA Inst ID: FID-4.i
Smp Info : ICAL1;ICAL1;;;
Misc Info :
Comment :
Method : \\NAHSTWS005\Target\chem\FID-4.i\170124.b\RSKNI2.m
Meth Date : 28-Sep-2022 10:00 FID-4.i Quant Type: ESTD
Cal Date : 24-JAN-2017 11:13 Cal File: 007.D
Als bottle: 1 Calibration Sample, Level: 1
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: stdNIP2.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * CpndVariable
Cpnd Variable Local Compound Variable

| Compounds | RT | EXP RT | DLT RT | RESPONSE | AMOUNTS CAL-AMT ( ug/L) | AMOUNTS ON-COL ( ug/L) |
|---|---|---|---|---|---|---|
| 1 Methane | 1.043 | 1.043 | 0.000 | 374 | 0.38600 | 0.383(a) |
| 2 Ethene | 1.553 | 1.553 | 0.000 | 361 | 0.67400 | 0.615(a) |
| 3 Ethane | 1.716 | 1.716 | 0.000 | 435 | 0.72200 | 0.590(a) |
| 4 Propane | 4.073 | 4.073 | 0.000 | 500 | 1.05900 | 1.743 |
| 5 N-Butane | 7.640 | 7.640 | 0.000 | 438 | 1.39800 | 3.271 |

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

01255612

Data File: \\NAHSTWS005\Target\chem\FID-4.i\170124.b\001.D



Date : 24-JAN-2017 09:06

Client ID: ICAL1

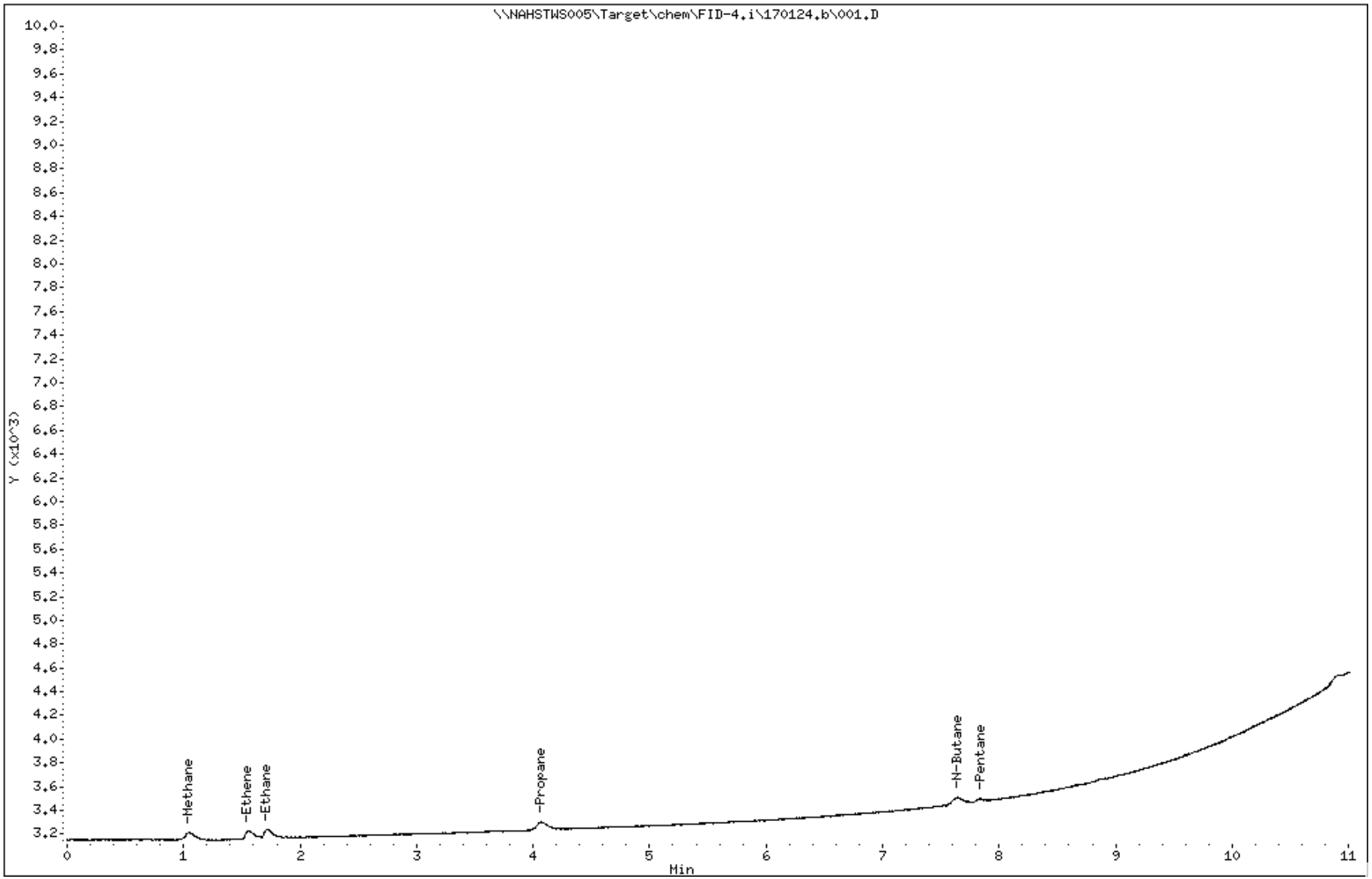
Instrument: FID-4.i

Sample Info: ICAL1;ICAL1;;;

Operator: JA

Column phase: Rtx-PLOT

Column diameter: 0.53



Data File : \\NAHSTWS005\Target\chem\FID-4.i\170124.b\001.D
Inj Date  : 24-JAN-2017 09:06
InstruID  : FID-4.i
LabSampID : ICAL1

NO MANUAL INTEGRATIONS

ALS Laboratory Group

Dissolved Gases Analysis

Data file : \\NAHSTWS005\Target\chem\FID-4.i\170124.b\002.D
Lab Smp Id: ICAL2 Client Smp ID: ICAL2
Inj Date : 24-JAN-2017 09:30
Operator : MA Inst ID: FID-4.i
Smp Info : ICAL2;ICAL2;;;
Misc Info : ;1;0;1
Comment :
Method : \\NAHSTWS005\Target\chem\FID-4.i\170124.b\RSKNI2.m
Meth Date : 28-Sep-2022 10:00 FID-4.i Quant Type: ESTD
Cal Date : 24-JAN-2017 09:06 Cal File: 001.D
Als bottle: 2 Calibration Sample, Level: 2
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: stdNIP2.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * CpndVariable
Cpnd Variable Local Compound Variable

| Compounds | RT | EXP RT | DLT RT | RESPONSE | AMOUNTS CAL-AMT ( ug/L) | AMOUNTS ON-COL ( ug/L) |
|---|---|---|---|---|---|---|
| 1 Methane | 1.023 | 1.023 | 0.000 | 944 | 0.96500 | 0.968 |
| 2 Ethene | 1.560 | 1.560 | 0.000 | 956 | 1.68500 | 1.630 |
| 3 Ethane | 1.723 | 1.723 | 0.000 | 1209 | 1.80400 | 1.641 |
| 4 Propane | 4.123 | 4.123 | 0.000 | 1279 | 2.64600 | 2.927 |
| 5 N-Butane | 7.716 | 7.716 | 0.000 | 936 | 3.49600 | 4.180 |

01255615

Data File: \\NAHSTWS005\Target\chem\FID-4.i\170124.b\002.D

Page 1

Date : 24-JAN-2017 09:30

Client ID: ICAL2

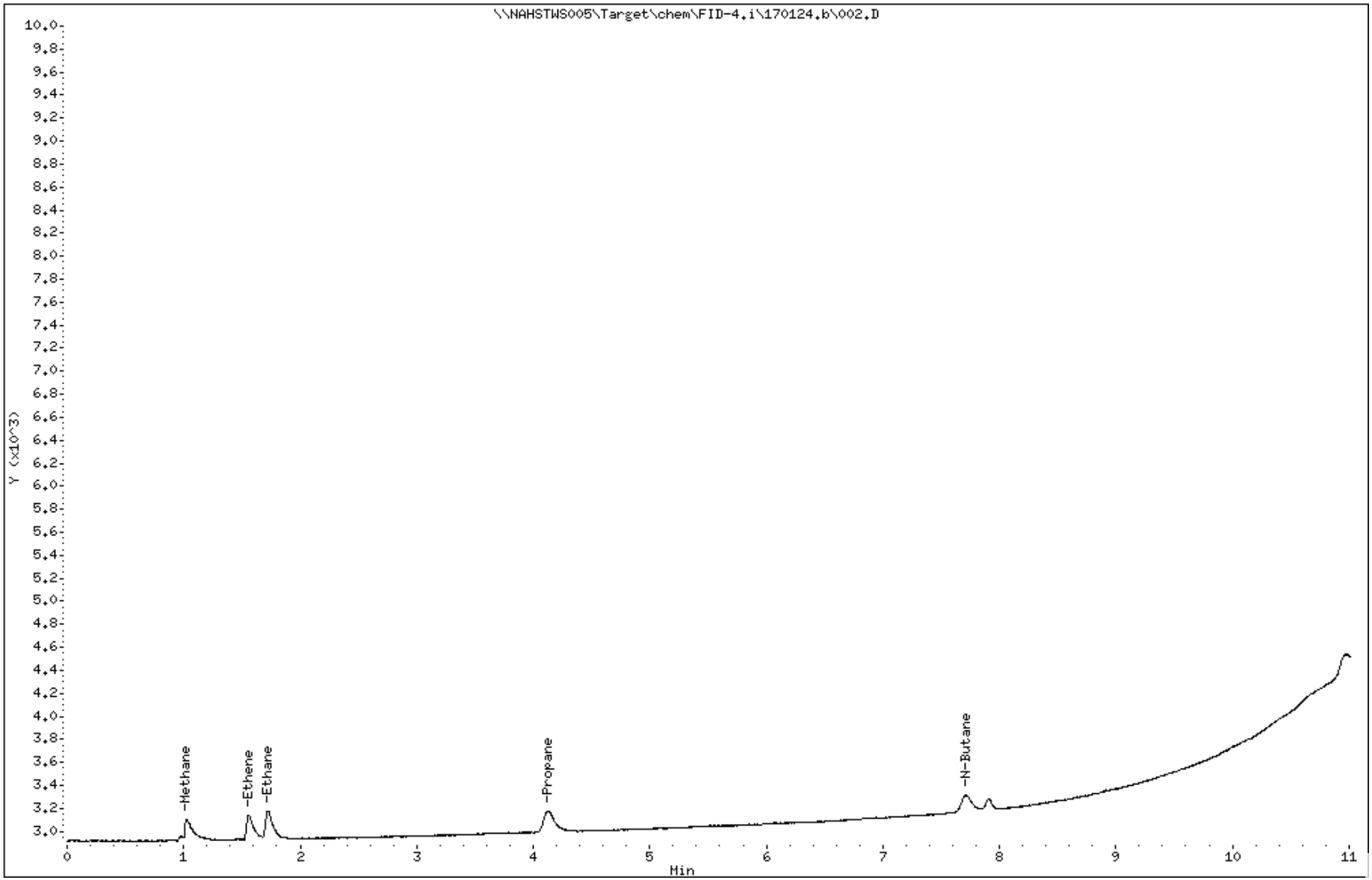
Instrument: FID-4.i

Sample Info: ICAL2;ICAL2;;;

Operator: MA

Column phase: Rtx-PLOT

Column diameter: 0.53



Data File : \\NAHSTWS005\Target\chem\FID-4.i\170124.b\002.D
Inj Date  : 24-JAN-2017 09:30
InstruID  : FID-4.i
LabSampID : ICAL2

NO MANUAL INTEGRATIONS

ALS Laboratory Group

Dissolved Gases Analysis

Data file : \\NAHSTWS005\Target\chem\FID-4.i\170124.b\003.D
Lab Smp Id: ICAL3 Client Smp ID: ICAL3
Inj Date : 24-JAN-2017 09:59
Operator : MA Inst ID: FID-4.i
Smp Info : ICAL3;ICAL3;;;
Misc Info : ;1;0;1
Comment :
Method : \\NAHSTWS005\Target\chem\FID-4.i\170124.b\RSKNI2.m
Meth Date : 28-Sep-2022 10:00 FID-4.i Quant Type: ESTD
Cal Date : 24-JAN-2017 09:30 Cal File: 002.D
Als bottle: 3 Calibration Sample, Level: 3
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: stdNIP2.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * CpndVariable
Cpnd Variable Local Compound Variable

| Compounds | RT | EXP RT | DLT RT | RESPONSE | AMOUNTS CAL-AMT ( ug/L) | AMOUNTS ON-COL ( ug/L) |
|---|---|---|---|---|---|---|
| 1 Methane | 1.043 | 1.043 | 0.000 | 1967 | 1.92900 | 2.018 |
| 2 Ethene | 1.570 | 1.570 | 0.000 | 1904 | 3.37000 | 3.247 |
| 3 Ethane | 1.736 | 1.736 | 0.000 | 2378 | 3.60900 | 3.229 |
| 4 Propane | 4.123 | 4.123 | 0.000 | 2602 | 5.29300 | 4.926 |
| 5 N-Butane | 7.703 | 7.703 | 0.000 | 2034 | 6.99100 | 6.176 |

01255618

Data File: \\NAHSTWS005\Target\chem\FID-4.i\170124.b\003.D



Date : 24-JAN-2017 09:59

Client ID: ICAL3

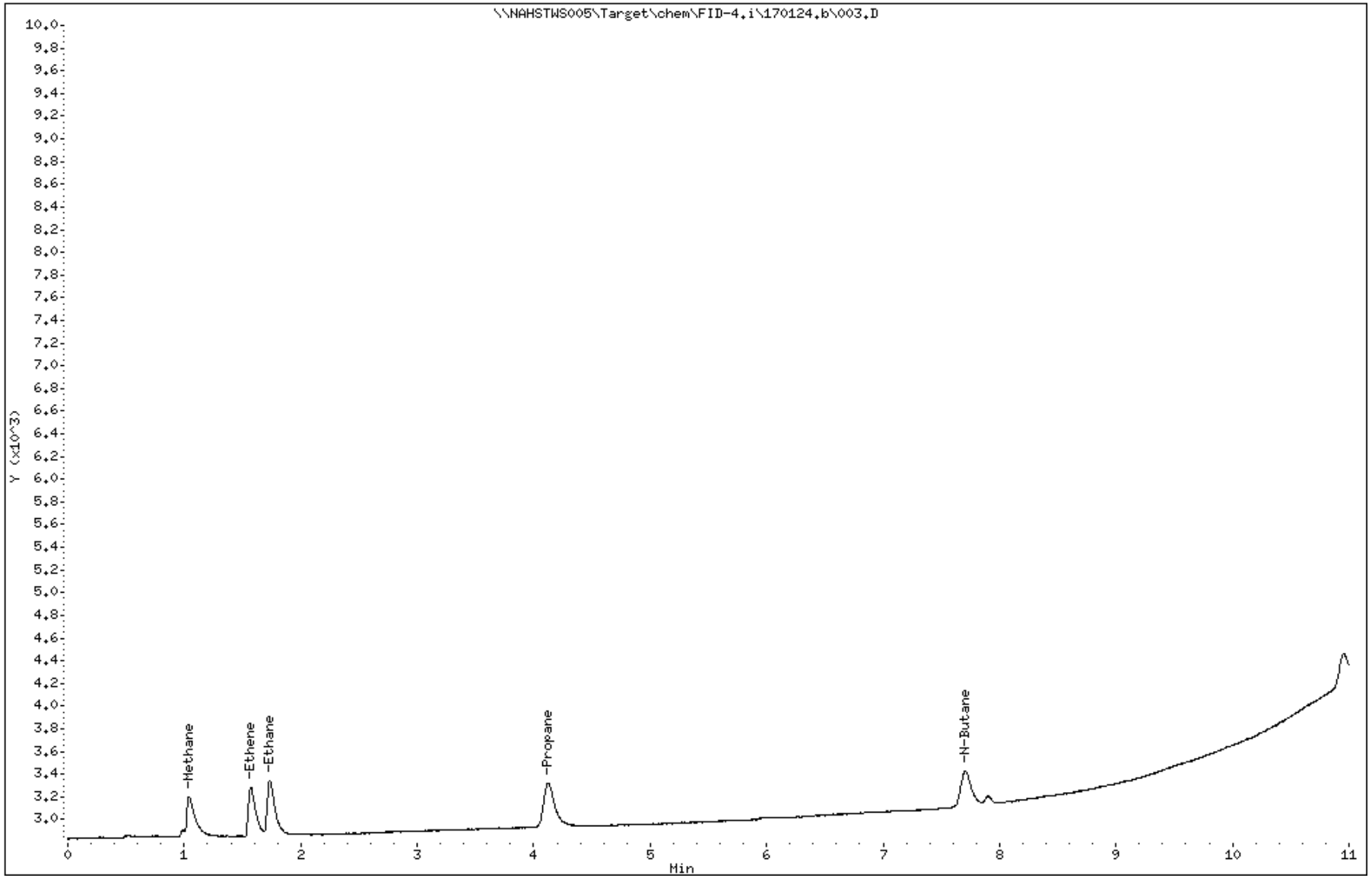
Instrument: FID-4.i

Sample Info: ICAL3;ICAL3;;;

Operator: MA

Column phase: Rtx-PLOT

Column diameter: 0.53



Data File : \\NAHSTWS005\Target\chem\FID-4.i\170124.b\003.D
Inj Date  : 24-JAN-2017 09:59
InstruID  : FID-4.i
LabSampID : ICAL3

NO MANUAL INTEGRATIONS

Data File: \\NAHSTWS005\Target\chem\FID-4.i\170124.b\004.D Page 1
Report Date: 28-Sep-2022 10:02

ALS Laboratory Group

Dissolved Gases Analysis

Data file : \\NAHSTWS005\Target\chem\FID-4.i\170124.b\004.D
Lab Smp Id: ICAL4 Client Smp ID: ICAL4
Inj Date : 24-JAN-2017 10:15
Operator : MA Inst ID: FID-4.i
Smp Info : ICAL4;ICAL4;;;
Misc Info : ;1;0;1
Comment :
Method : \\NAHSTWS005\Target\chem\FID-4.i\170124.b\RSKNI2.m
Meth Date : 28-Sep-2022 10:02 FID-4.i Quant Type: ESTD
Cal Date : 24-JAN-2017 11:13 Cal File: 007.D
Als bottle: 4 Calibration Sample, Level: 4
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: stdNIP2.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * CpndVariable
Cpnd Variable Local Compound Variable

| Compounds | RT | EXP RT | DLT RT | RESPONSE | AMOUNTS CAL-AMT ( ug/L) | ON-COL ( ug/L) |
|---|---|---|---|---|---|---|
| 1 Methane | 1.033 | 1.033 | 0.000 | 3399 | 3.85900 | 3.488 |
| 2 Ethene | 1.563 | 1.563 | 0.000 | 3478 | 6.74000 | 5.932 |
| 3 Ethane | 1.726 | 1.726 | 0.000 | 4310 | 7.21700 | 5.853 |
| 4 Propane | 4.120 | 4.120 | 0.000 | 4785 | 10.5850 | 8.190 |
| 5 N-Butane | 7.703 | 7.703 | 0.000 | 3864 | 13.9820 | 9.473(M) |

QC Flag Legend

M - Compound response manually integrated.

01255621

Data File: \\NAHSTWS005\Target\chem\FID-4.i\170124.b\004.D



Date : 24-JAN-2017 10:15

Client ID: ICAL4

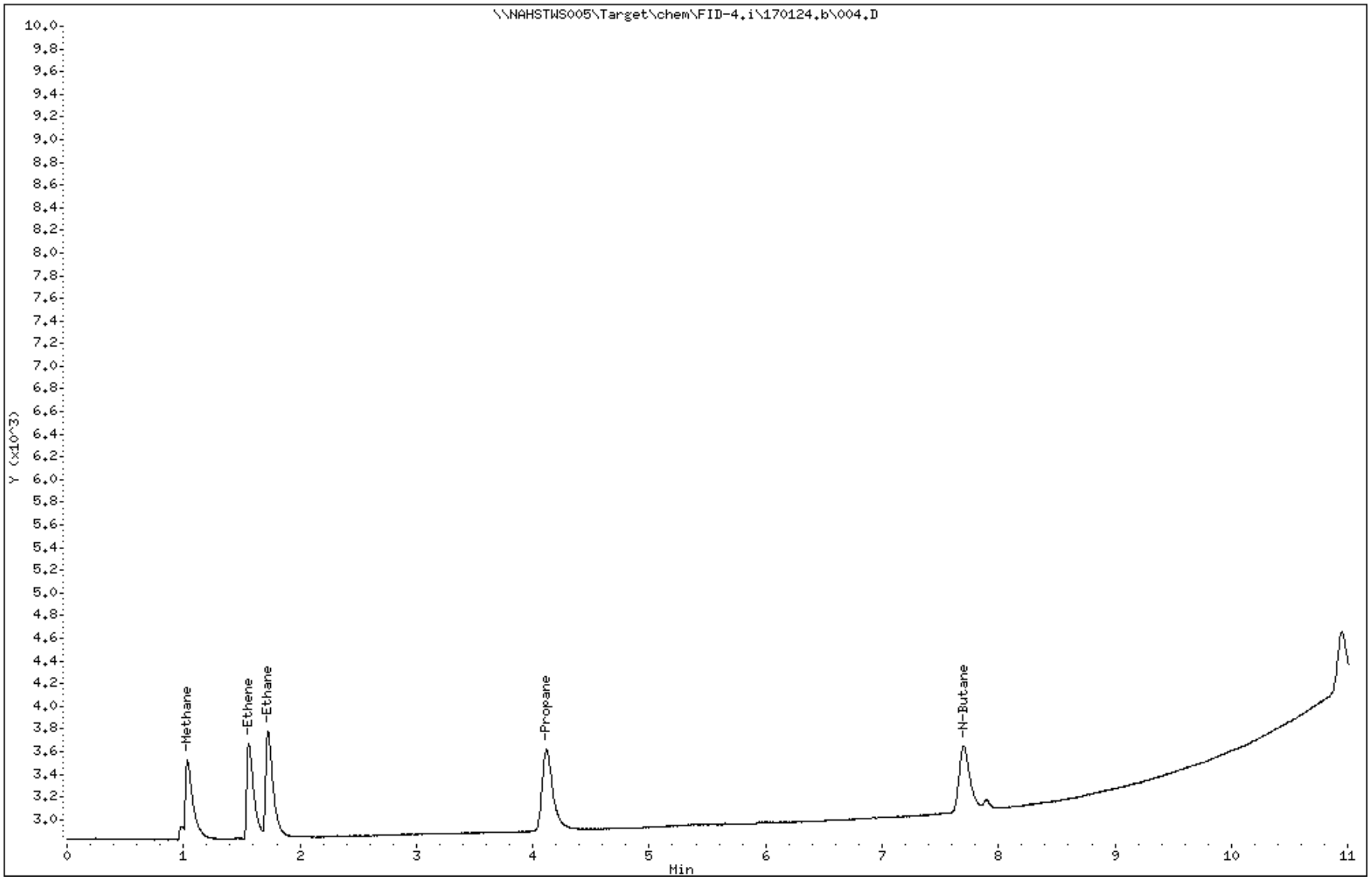
Instrument: FID-4.i

Sample Info: ICAL4;ICAL4;;;

Operator: MA

Column phase: Rtx-PLOT

Column diameter: 0.53



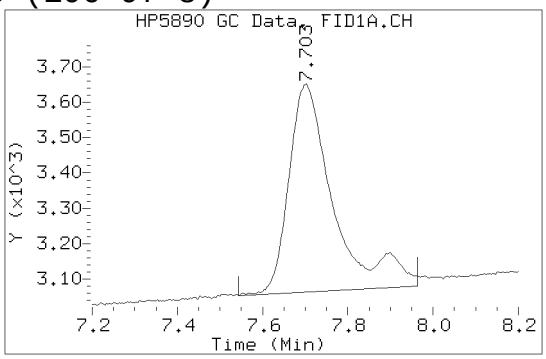
Data File : \\NAHSTWS005\Target\chem\FID-4.i\170124.b\004.D
Inj Date : 24-JAN-2017 10:15
InstruID : FID-4.i
LabSampID : ICAL4

N-Butane (106-97-8)

Reason Code:

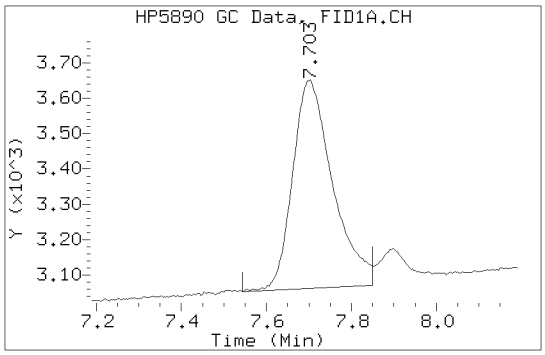
BEFORE

MASS
100
AREA
4292
HEIGHT
591
28-Sep-2022
10:02
linh
pham




AFTER

MASS
100
AREA
3864
HEIGHT
591
28-Sep-2022
10:02
linh
pham



Data File: \\NAHSTWS005\Target\chem\FID-4.i\170124.b\005.D Page 1
Report Date: 28-Sep-2022 10:02

ALS Laboratory Group

Dissolved Gases Analysis

Data file : \\NAHSTWS005\Target\chem\FID-4.i\170124.b\005.D
Lab Smp Id: ICAL5 Client Smp ID: ICAL5
Inj Date : 24-JAN-2017 10:39
Operator : MA Inst ID: FID-4.i
Smp Info : ICAL5;ICAL5;;;
Misc Info : ;1;0;1
Comment :
Method : \\NAHSTWS005\Target\chem\FID-4.i\170124.b\RSKNI2.m
Meth Date : 28-Sep-2022 10:02 FID-4.i Quant Type: ESTD
Cal Date : 24-JAN-2017 10:15 Cal File: 004.D
Als bottle: 5 Calibration Sample, Level: 5
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: stdNIP2.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * CpndVariable
Cpnd Variable Local Compound Variable

| Compounds | RT | EXP RT | DLT RT | RESPONSE | AMOUNTS CAL-AMT ( ug/L) | ON-COL ( ug/L) |
|---|---|---|---|---|---|---|
| 1 Methane | 1.043 | 1.043 | 0.000 | 9268 | 9.64700 | 9.511 |
| 2 Ethene | 1.570 | 1.570 | 0.000 | 11210 | 16.8500 | 19.121 |
| 3 Ethane | 1.733 | 1.733 | 0.000 | 14588 | 18.0430 | 19.811 |
| 4 Propane | 4.120 | 4.120 | 0.000 | 18294 | 26.4630 | 27.415 |
| 5 N-Butane | 7.700 | 7.700 | 0.000 | 18446 | 34.9550 | 34.419(M) |

QC Flag Legend

M - Compound response manually integrated.

01255624

Data File: \\NAHSTWS005\Target\chem\FID-4.i\170124.b\005.D

Page 1

Date : 24-JAN-2017 10:39

Client ID: ICAL5

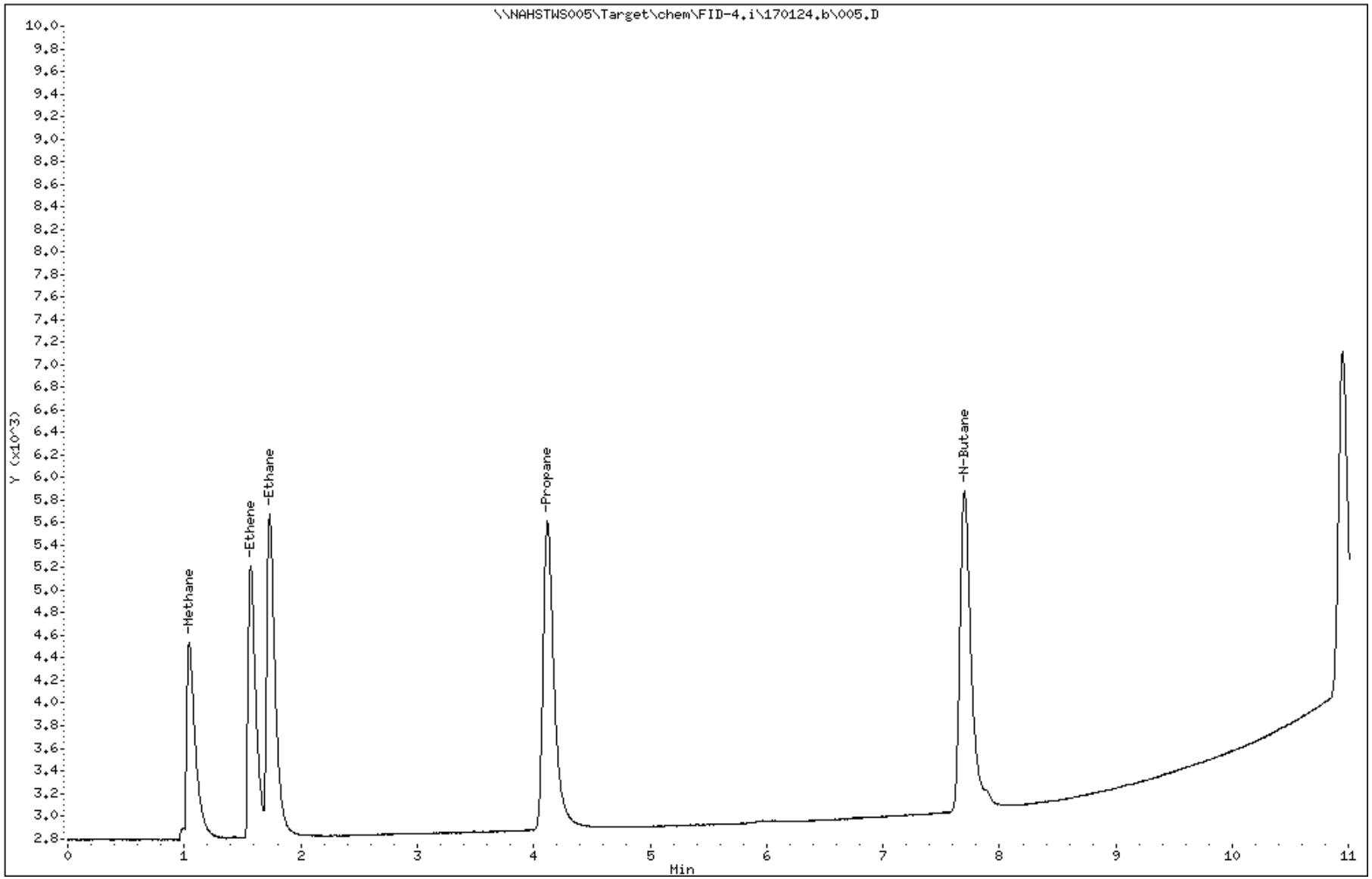
Instrument: FID-4.i

Sample Info: ICAL5;ICAL5;;;

Operator: MA

Column phase: Rtx-PLOT

Column diameter: 0.53



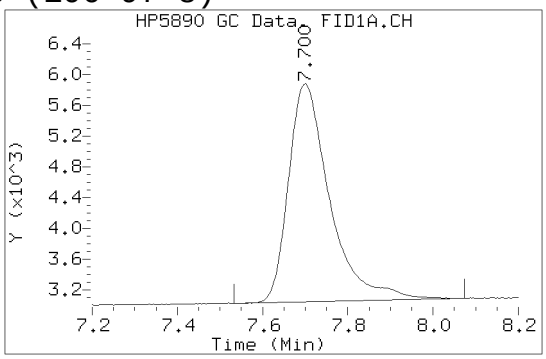
Data File : \\NAHSTWS005\Target\chem\FID-4.i\170124.b\005.D
Inj Date : 24-JAN-2017 10:39
InstruID : FID-4.i
LabSampID : ICAL5

N-Butane (106-97-8)

Reason Code:

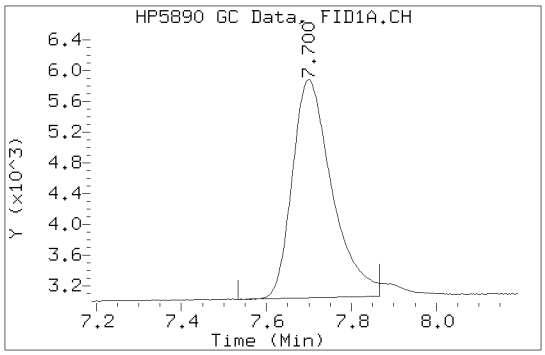
BEFORE

MASS
100
AREA
19142
HEIGHT
2839
28-Sep-2022
10:02
linh
pham




AFTER

MASS
100
AREA
18446
HEIGHT
2838
28-Sep-2022
10:02
linh
pham



ALS Laboratory Group

Dissolved Gases Analysis

Data file : \\NAHSTWS005\Target\chem\FID-4.i\170124.b\006.D
Lab Smp Id: ICAL6 Client Smp ID: ICAL6
Inj Date : 24-JAN-2017 10:57
Operator : MA Inst ID: FID-4.i
Smp Info : ICAL6;ICAL6;;;
Misc Info : ;1;0;1
Comment :
Method : \\NAHSTWS005\Target\chem\FID-4.i\170124.b\RSKNI2.m
Meth Date : 28-Sep-2022 10:00 FID-4.i Quant Type: ESTD
Cal Date : 24-JAN-2017 10:39 Cal File: 005.D
Als bottle: 6 Calibration Sample, Level: 6
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: stdNIP2.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * CpndVariable
Cpnd Variable Local Compound Variable

| Compounds | RT | EXP RT | DLT RT | RESPONSE | AMOUNTS CAL-AMT ( ug/L) | AMOUNTS ON-COL ( ug/L) |
|---|---|---|---|---|---|---|
| 1 Methane | 1.023 | 1.023 | 0.000 | 17957 | 19.2940 | 18.429 |
| 2 Ethene | 1.550 | 1.550 | 0.000 | 22910 | 53.8200 | 39.078 |
| 3 Ethane | 1.716 | 1.716 | 0.000 | 29505 | 36.0860 | 40.070 |
| 4 Propane | 4.110 | 4.110 | 0.000 | 38286 | 52.9260 | 52.796 |
| 5 N-Butane | 7.696 | 7.696 | 0.000 | 42817 | 69.9110 | 70.855 |

01255627

Data File: \\NAHSTWS005\Target\chem\FID-4.i\170124.b\006.D

Page 1

Date : 24-JAN-2017 10:57

Client ID: ICAL6

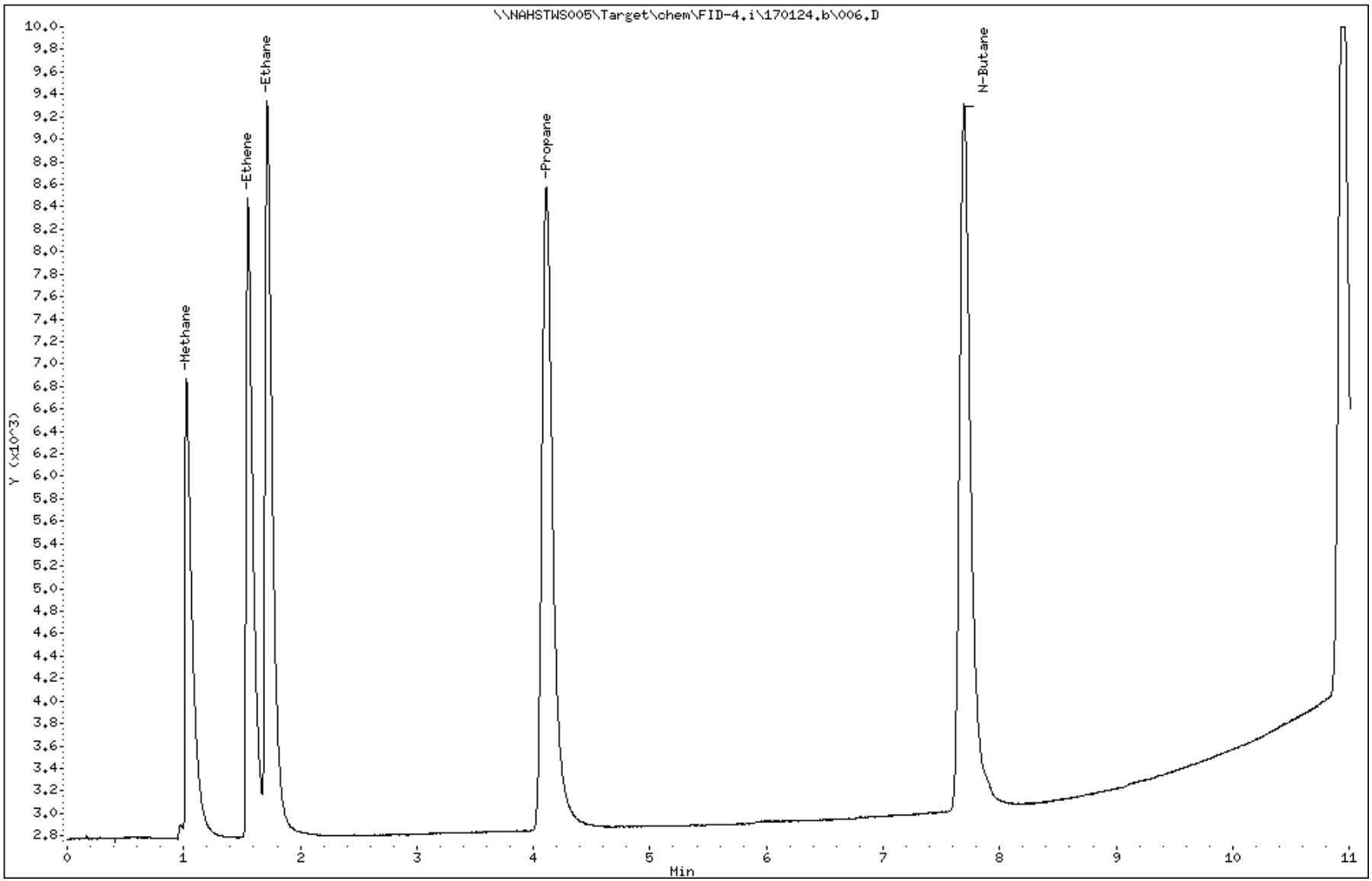
Instrument: FID-4.i

Sample Info: ICAL6;ICAL6;;;

Operator: MA

Column phase: Rtx-PLOT

Column diameter: 0.53



Data File : \\NAHSTWS005\Target\chem\FID-4.i\170124.b\006.D
Inj Date  : 24-JAN-2017 10:57
InstruID  : FID-4.i
LabSampID : ICAL6

NO MANUAL INTEGRATIONS

Data File: \\NAHSTWS005\Target\chem\FID-4.i\170124.b\007.D Page 1
Report Date: 28-Sep-2022 10:00

ALS Laboratory Group

Dissolved Gases Analysis

Data file : \\NAHSTWS005\Target\chem\FID-4.i\170124.b\007.D
Lab Smp Id: ICAL7 Client Smp ID: ICAL7
Inj Date : 24-JAN-2017 11:13
Operator : MA Inst ID: FID-4.i
Smp Info : ICAL7;ICAL7;;;
Misc Info : ;1;0;1
Comment :
Method : \\NAHSTWS005\Target\chem\FID-4.i\170124.b\RSKNI2.m
Meth Date : 28-Sep-2022 10:00 FID-4.i Quant Type: ESTD
Cal Date : 24-JAN-2017 10:57 Cal File: 006.D
Als bottle: 7 Calibration Sample, Level: 7
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: stdNIP2.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * CpndVariable
Cpnd Variable Local Compound Variable

| Compounds | RT | EXP RT | DLT RT | RESPONSE | AMOUNTS CAL-AMT ( ug/L) | AMOUNTS ON-COL ( ug/L) |
|---|---|---|---|---|---|---|
| 1 Methane | 1.030 | 1.030 | 0.000 | 41736 | 38.5880 | 42.833(A) |
| 2 Ethene | 1.556 | 1.556 | 0.000 | 55865 | 67.4000 | 95.291(A) |
| 3 Ethane | 1.723 | 1.723 | 0.000 | 72124 | 72.1720 | 97.951(A) |
| 4 Propane | 4.113 | 4.113 | 0.000 | 96509 | 105.852 | 105.844 |
| 5 N-Butane | 7.690 | 7.690 | 0.000 | 114164 | 139.821 | 139.707 |

QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.

01255630

Data File: \\NAHSTWS005\Target\chem\FID-4.i\170124.b\007.D



Date : 24-JAN-2017 11:13

Client ID: ICAL7

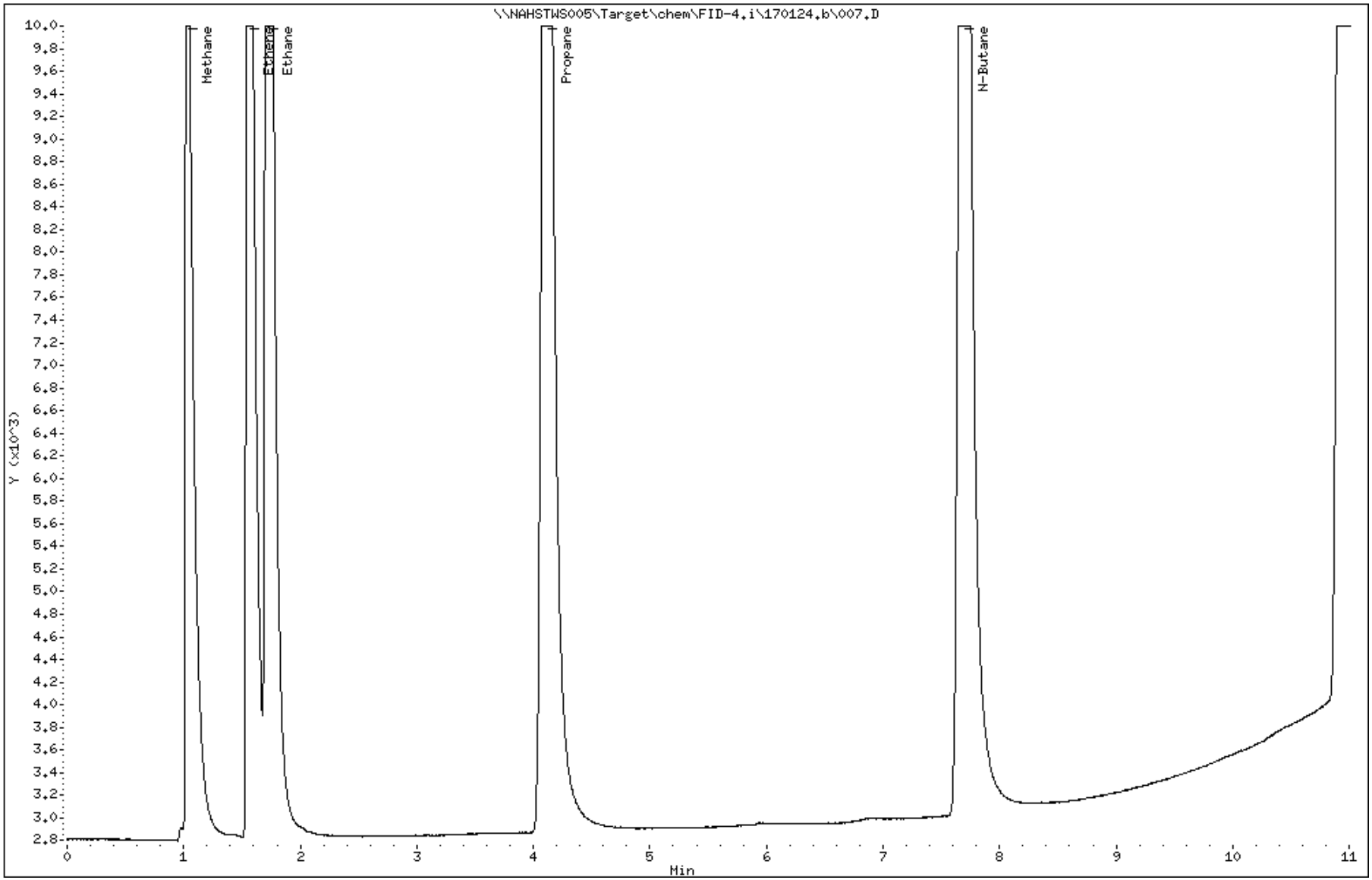
Instrument: FID-4.i

Sample Info: ICAL7;ICAL7;;;

Operator: MA

Column phase: Rtx-PLOT

Column diameter: 0.53



Data File : \\NAHSTWS005\Target\chem\FID-4.i\170124.b\007.D
Inj Date  : 24-JAN-2017 11:13
InstruID  : FID-4.i
LabSampID : ICAL7

NO MANUAL INTEGRATIONS

Data File: \\NAHSTWS005\Target\chem\FID-4.i\170124.b\008.D Page 1
Report Date: 28-Sep-2022 10:00

ALS Laboratory Group

Dissolved Gases Analysis

Data file : \\NAHSTWS005\Target\chem\FID-4.i\170124.b\008.D
Lab Smp Id: ICV Client Smp ID: ICV
Inj Date : 24-JAN-2017 12:05
Operator : MA Inst ID: FID-4.i
Smp Info : ICV;ICV;;;
Misc Info : ;1;0;1
Comment :
Method : \\NAHSTWS005\Target\chem\FID-4.i\170124.b\RSKNI2.m
Meth Date : 28-Sep-2022 10:00 FID-4.i Quant Type: ESTD
Cal Date : 24-JAN-2017 11:13 Cal File: 007.D
Als bottle: 8 QC Sample: METHSPIKE
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: stdNIP2.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * CpndVariable
Cpnd Variable Local Compound Variable

| Compounds | RT | EXP RT | DLT RT | RESPONSE | CONCENTRATIONS ON-COLUMN ( ug/L) | CONCENTRATIONS FINAL ( ug/L) |
|---|---|---|---|---|---|---|
| 1 Methane | 1.046 | 1.030 | 0.016 | 9352 | 9.59792 | 9.597 |
| 2 Ethene | 1.573 | 1.556 | 0.017 | 11192 | 19.0906 | 19.090 |
| 3 Ethane | 1.736 | 1.723 | 0.013 | 14474 | 19.6571 | 19.657 |
| 4 Propane | 4.116 | 4.113 | 0.003 | 18164 | 27.2381 | 27.238 |
| 5 N-Butane | 7.696 | 7.690 | 0.006 | 19425 | 36.0103 | 36.010 |

01255633

Data File: \\NAHSTWS005\Target\chem\FID-4.i\170124.b\008.D

Page 1

Date : 24-JAN-2017 12:05

Client ID: ICV

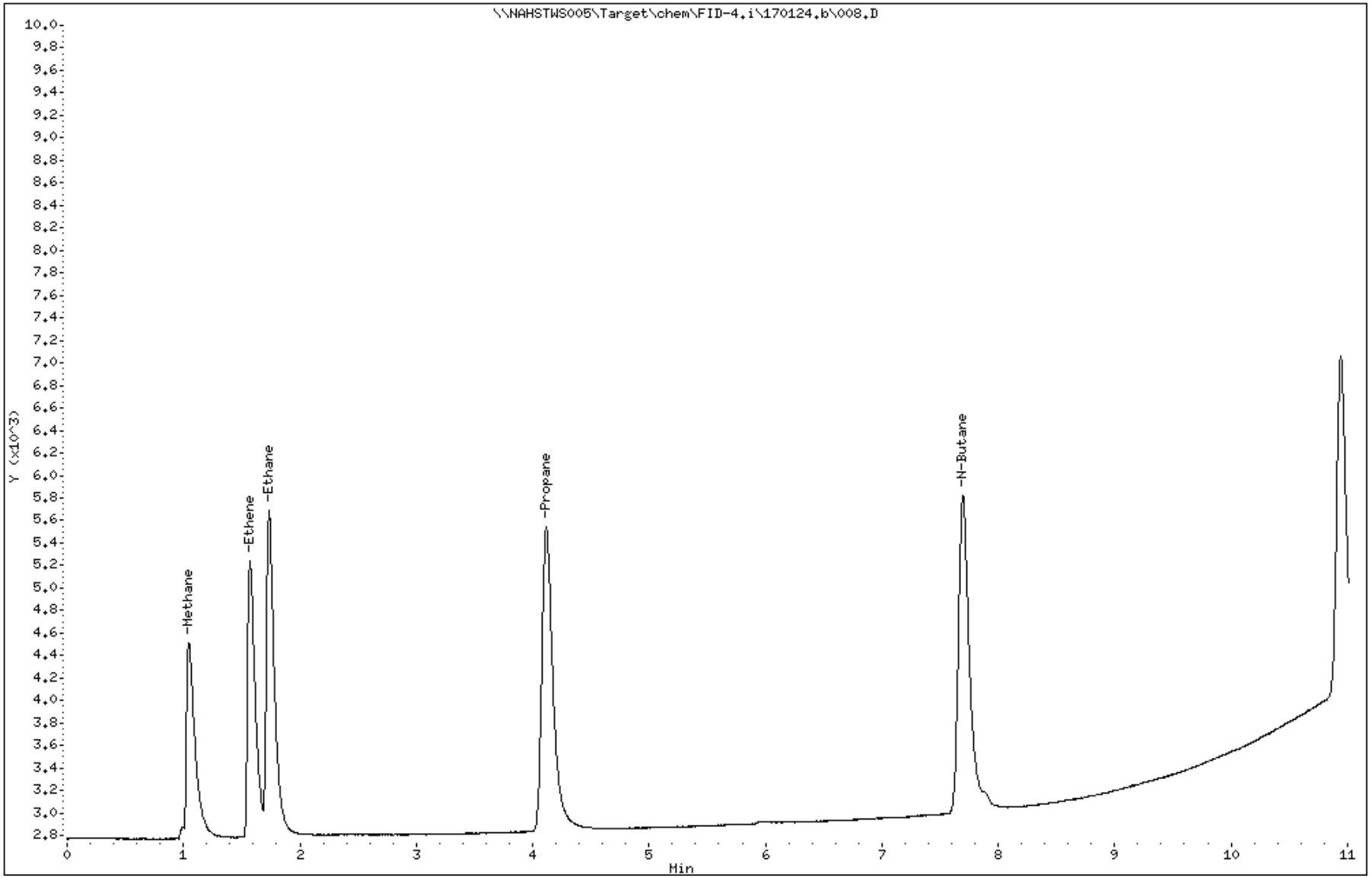
Instrument: FID-4.i

Sample Info: ICV;ICV;;;

Operator: MA

Column phase: Rtx-PLOT

Column diameter: 0.53



Data File : \\NAHSTWS005\Target\chem\FID-4.i\170124.b\008.D
Inj Date  : 24-JAN-2017 12:05
InstruID  : FID-4.i
LabSampID : ICV

NO MANUAL INTEGRATIONS

01255635

right solutions.
right partner.

# Raw Data FID-4 428169

## Semi-Volatiles by RSK-175

Workorder

HS23020265

Client

Aptim Environmental & Infrastucture, Inc.

Project

LHAAP46 Febuary 2023

02/28/2023

ALS Environmental–Houston Laboratory
10450 Stancliff Road, Suite 210, Houston, TX 77099
Phone (281) 530-5656 Fax (281) 530-5887
www.alsglobal.com

ALS Laboratory Group

Dissolved Gases Analysis

Data file : \\nahstws005\Target\chem\FID-4.i\230209.b\001.D
Lab Smp Id: RSK-CCV Client Smp ID: RSK-CCV
Inj Date : 09-FEB-2023 07:27
Operator : PL Inst ID: FID-4.i
Smp Info : RSK-CCV;RSK-CCV;2;4
Misc Info : ;1;0;1
Comment :
Method : \\nahstws005\Target\chem\FID-4.i\230209.b\RSKNI3.m
Meth Date : 09-Feb-2023 12:38 samy.mata Quant Type: ESTD
Cal Date : 24-JAN-2017 10:15 Cal File: 004.D
Als bottle: 1 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: RSK175.sub
Target Version: 4.14
Processing Host: NAHSTW7022

Concentration Formula: Amt * DF * CpndVariable
Cpnd Variable Local Compound Variable

| | | | | | AMOUNTS | |
|---|---|---|---|---|---|---|
| | | | | | CAL-AMT | ON-COL |
| Compounds | RT | EXP RT | DLT RT | RESPONSE | ( ug/L) | ( ug/L) |
| 1 Methane | 0.440 | 0.440 | 0.000 | 8349 | 9.64700 | 8.563 |
| 2 Ethene | 0.660 | 0.660 | 0.000 | 10186 | 16.8500 | 17.389(M) |
| 3 Ethane | 0.733 | 0.733 | 0.000 | 13627 | 18.0430 | 18.939(M) |

QC Flag Legend

M - Compound response manually integrated.

01255637

Data File: \\nahstws005\Target\chem\FID-4.i\230209.b\001.D



Date : 09-FEB-2023 07:27

Client ID: RSK-CCV

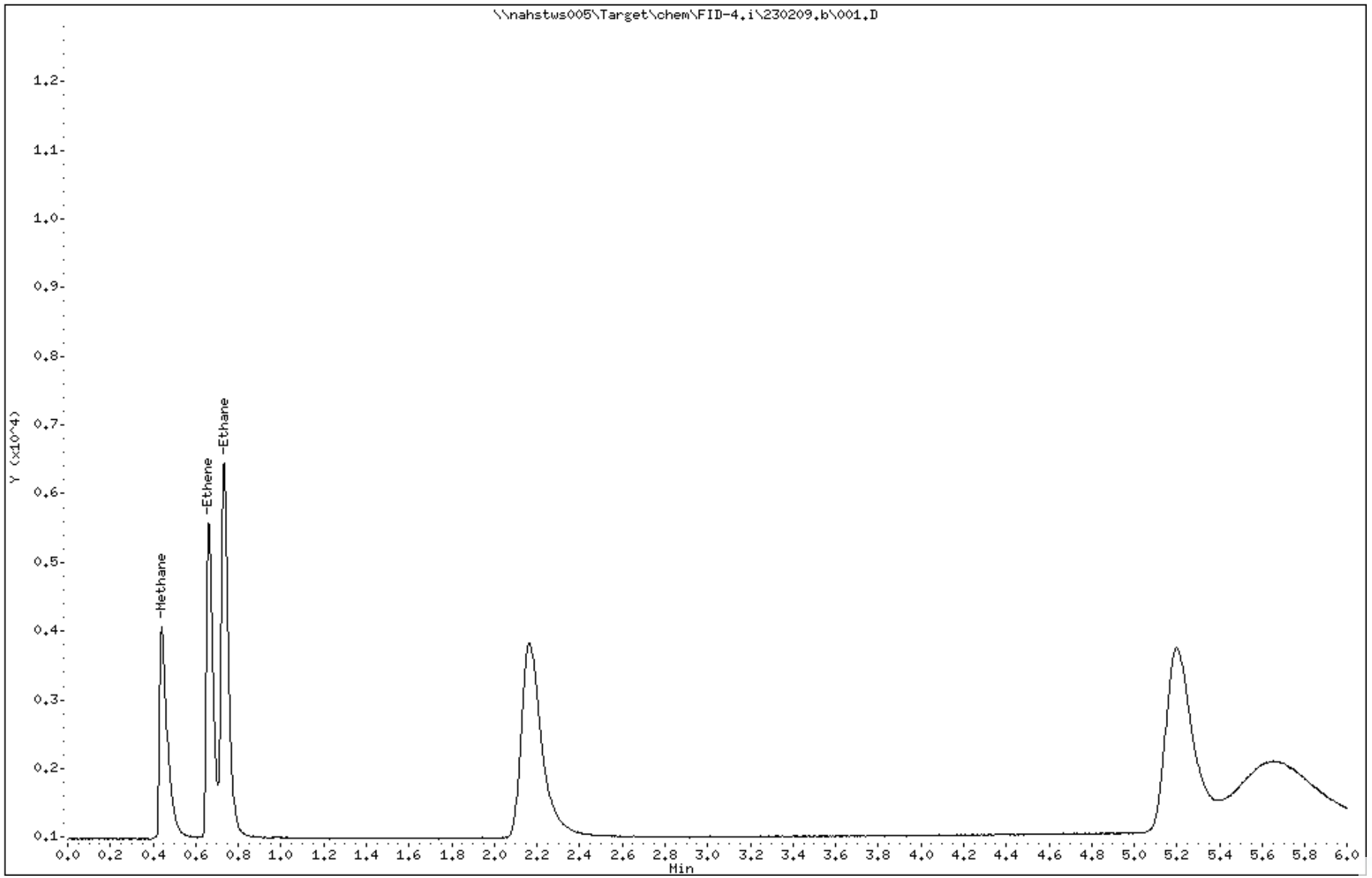
Instrument: FID-4.i

Sample Info: RSK-CCV;RSK-CCV;2;4

Operator: PL

Column phase: Rtx-PLOT

Column diameter: 0.53



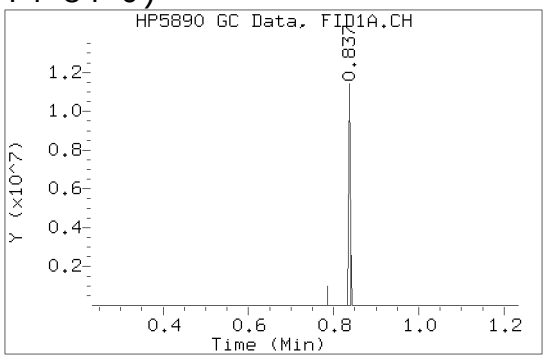
Data File : \\nahstws005\Target\chem\FID-4.i\230209.b\001.D
Inj Date : 09-FEB-2023 07:27
InstruID : FID-4.i
LabSampID : RSK-CCV

## Ethane (74-84-0)

Reason Code:

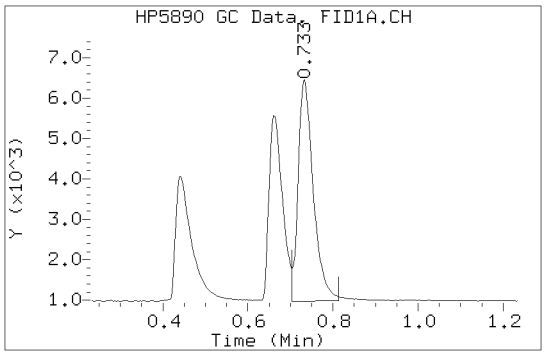
**BEFORE**

MASS
44
AREA
2631465
HEIGHT
11423146
09-Feb-2023
07:08
ALSHS
Server




**AFTER**

MASS
44
AREA
13627
HEIGHT
5477
10-Feb-2023
07:07
ALSHS
Ser

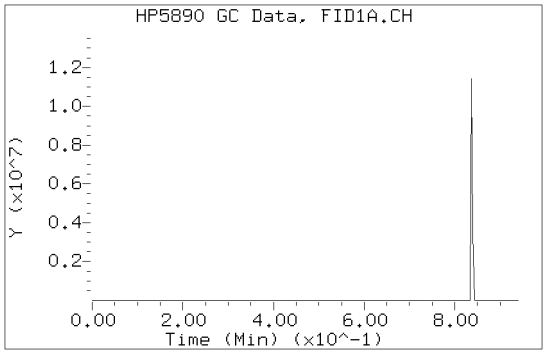



## Ethene (74-85-1)

Reason Code:

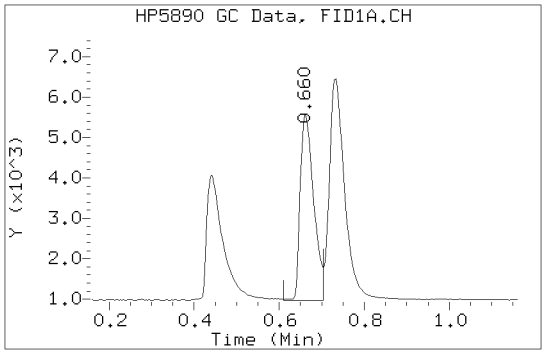
**BEFORE**

MASS
100
AREA
0
HEIGHT
0
09-Feb-2023
07:08
ALSHS
Server




**AFTER**

MASS
100
AREA
10186
HEIGHT
4591
10-Feb-2023
07:07
ALSHS
Ser



ALS Laboratory Group

Dissolved Gases Analysis

Data file : \\nahstws005\Target\chem\FID-4.i\230209.b\002.D
Lab Smp Id: MBLK-230209 Client Smp ID: MBLK-230209
Inj Date : 09-FEB-2023 07:36
Operator : PL Inst ID: FID-4.i
Smp Info : MBLK-230209;MBLK-230209;3;;BLANK
Misc Info : ;1;0;1
Comment :
Method : \\nahstws005\Target\chem\FID-4.i\230209.b\RSKNI3.m
Meth Date : 09-Feb-2023 07:50 samy.mata Quant Type: ESTD
Cal Date : 24-JAN-2017 10:15 Cal File: 004.D
Als bottle: 2 QC Sample: BLANK
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: RSK175.sub
Target Version: 4.14
Processing Host: NAHSTW7022

Concentration Formula: Amt * DF * CpndVariable
Cpnd Variable Local Compound Variable

| Compounds | RT | EXP RT | DLT RT | RESPONSE | CONCENTRATIONS ON-COLUMN ( ug/L) | CONCENTRATIONS FINAL ( ug/L) |
|---|---|---|---|---|---|---|

01255640

Data File: \\nahstws005\Target\chem\FID-4.i\230209.b\002.D



Date : 09-FEB-2023 07:36

Client ID: MBLK-230209

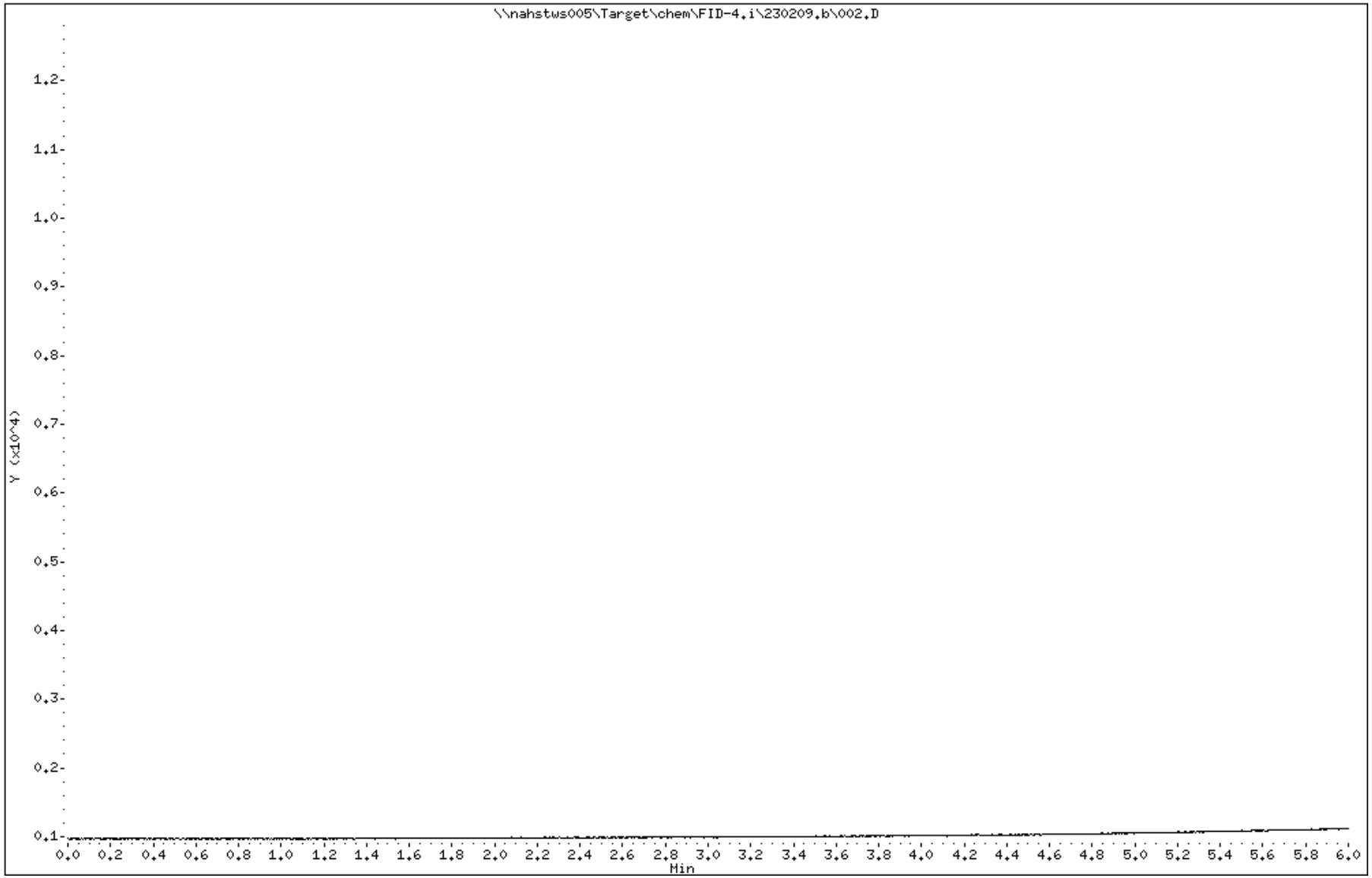
Instrument: FID-4.i

Sample Info: MBLK-230209;MBLK-230209;3;;BLANK

Operator: PL

Column phase: Rtx-PLOT

Column diameter: 0.53



Data File : \\nahstws005\Target\chem\FID-4.i\230209.b\002.D
Inj Date  : 09-FEB-2023 07:36
InstruID  : FID-4.i
LabSampID : MBLK-230209

NO MANUAL INTEGRATIONS

ALS Laboratory Group

Dissolved Gases Analysis

Data file : \\NAHSTWS005\Target\chem\FID-4.i\230209.b\003.D
Lab Smp Id: LCS-230209 Client Smp ID: LCS-230209
Inj Date : 09-FEB-2023 07:44
Operator : PL Inst ID: FID-4.i
Smp Info : LCS-230209;LCS-230209;3;;LCS
Misc Info : ;1;0;1
Comment :
Method : \\NAHSTWS005\Target\chem\FID-4.i\230209.b\RSKNI3.m
Meth Date : 09-Feb-2023 12:38 samy.mata Quant Type: ESTD
Cal Date : 24-JAN-2017 10:15 Cal File: 004.D
Als bottle: 3 QC Sample: LCS
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: RSK175.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * CpndVariable
Cpnd Variable Local Compound Variable

| Compounds | RT | EXP RT | DLT RT | RESPONSE | CONCENTRATIONS ON-COLUMN ( ug/L) | CONCENTRATIONS FINAL ( ug/L) |
|---|---|---|---|---|---|---|
| 1 Methane | 0.440 | 0.440 | 0.000 | 8568 | 8.78776 | 8.787 |
| 2 Ethene | 0.663 | 0.660 | 0.003 | 10258 | 17.5123 | 17.512 |
| 3 Ethane | 0.733 | 0.733 | 0.000 | 14729 | 20.4715 | 20.471 |

01255643

Data File: \\NAHSTWS005\Target\chem\FID-4.i\230209.b\003.D

Page 1

Date : 09-FEB-2023 07:44

Client ID: LCS-230209

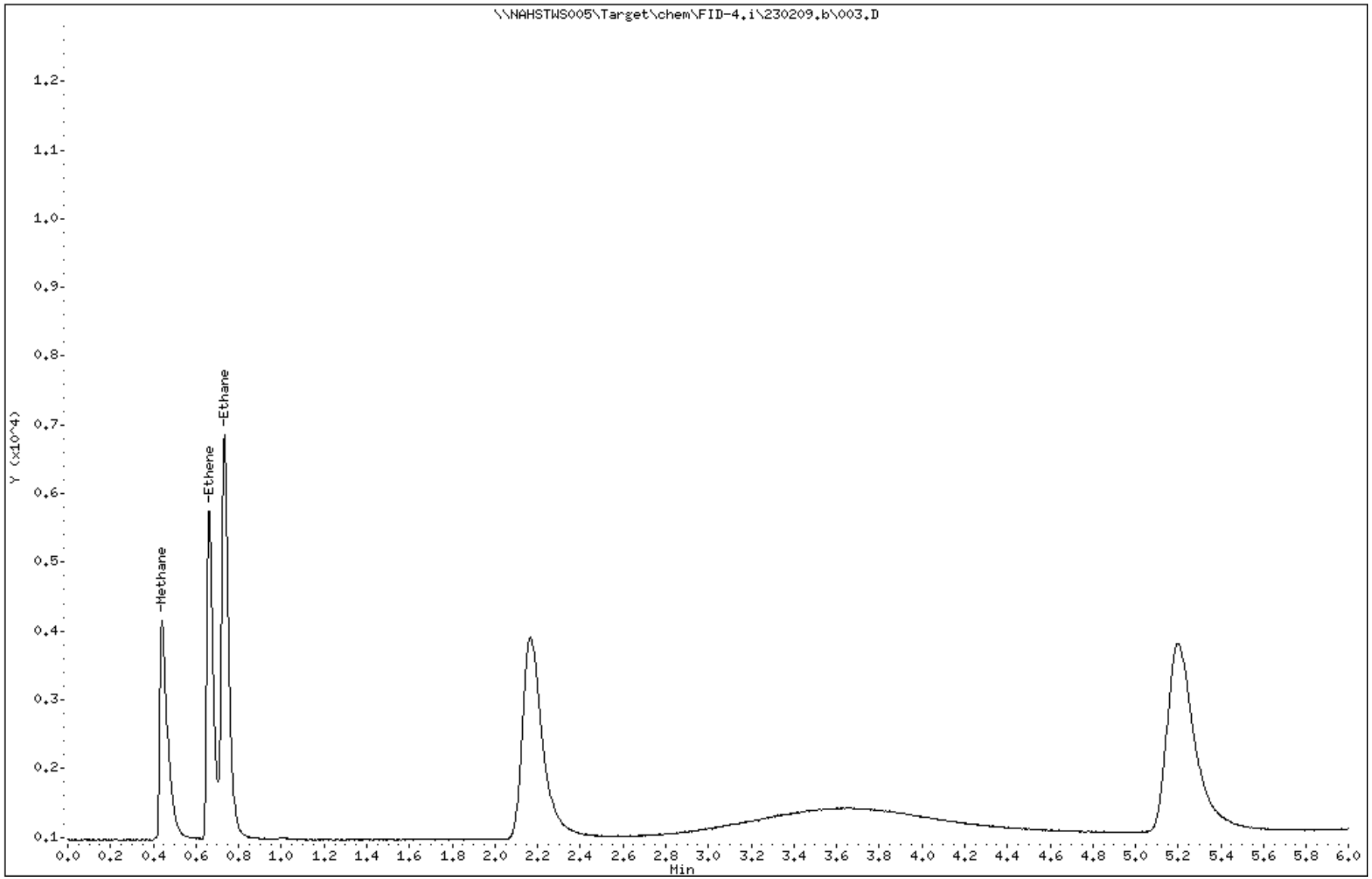
Instrument: FID-4.i

Sample Info: LCS-230209;LCS-230209;3;;LCS

Operator: PL

Column phase: Rtx-PLOT

Column diameter: 0.53



Data File : \\NAHSTWS005\Target\chem\FID-4.i\230209.b\003.D
Inj Date  : 09-FEB-2023 07:44
InstruID  : FID-4.i
LabSampID : LCS-230209

NO MANUAL INTEGRATIONS

Data File: \\nahstws005\Target\chem\FID-4.i\230209.b\004.D Page 1
Report Date: 09-Feb-2023 08:29

ALS Laboratory Group

Dissolved Gases Analysis

Data file : \\nahstws005\Target\chem\FID-4.i\230209.b\004.D
Lab Smp Id: HS23020265-01 Client Smp ID: HS23020265-01
Inj Date : 09-FEB-2023 07:55
Operator : PL Inst ID: FID-4.i
Smp Info : HS23020265-01;HS23020265-01
Misc Info : ;1;0;1
Comment :
Method : \\nahstws005\Target\chem\FID-4.i\230209.b\RSKNI3.m
Meth Date : 09-Feb-2023 07:50 samy.mata Quant Type: ESTD
Cal Date : 24-JAN-2017 10:15 Cal File: 004.D
Als bottle: 4
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: RSK175.sub
Target Version: 4.14
Processing Host: NAHSTW7022

Concentration Formula: Amt * DF * CpndVariable
Cpnd Variable Local Compound Variable

| Compounds | RT | EXP RT | DLT RT | RESPONSE | CONCENTRATIONS ON-COLUMN ( ug/L) | CONCENTRATIONS FINAL ( ug/L) |
|---|---|---|---|---|---|---|
| 1 Methane | 0.436 | 0.440 | -0.004 | 1839 | 1.88617 | 1.886(M) |

QC Flag Legend

M - Compound response manually integrated.

01255646

Data File: \\nahstws005\Target\chem\FID-4.i\230209.b\004.D



Date : 09-FEB-2023 07:55

Client ID: HS23020265-01

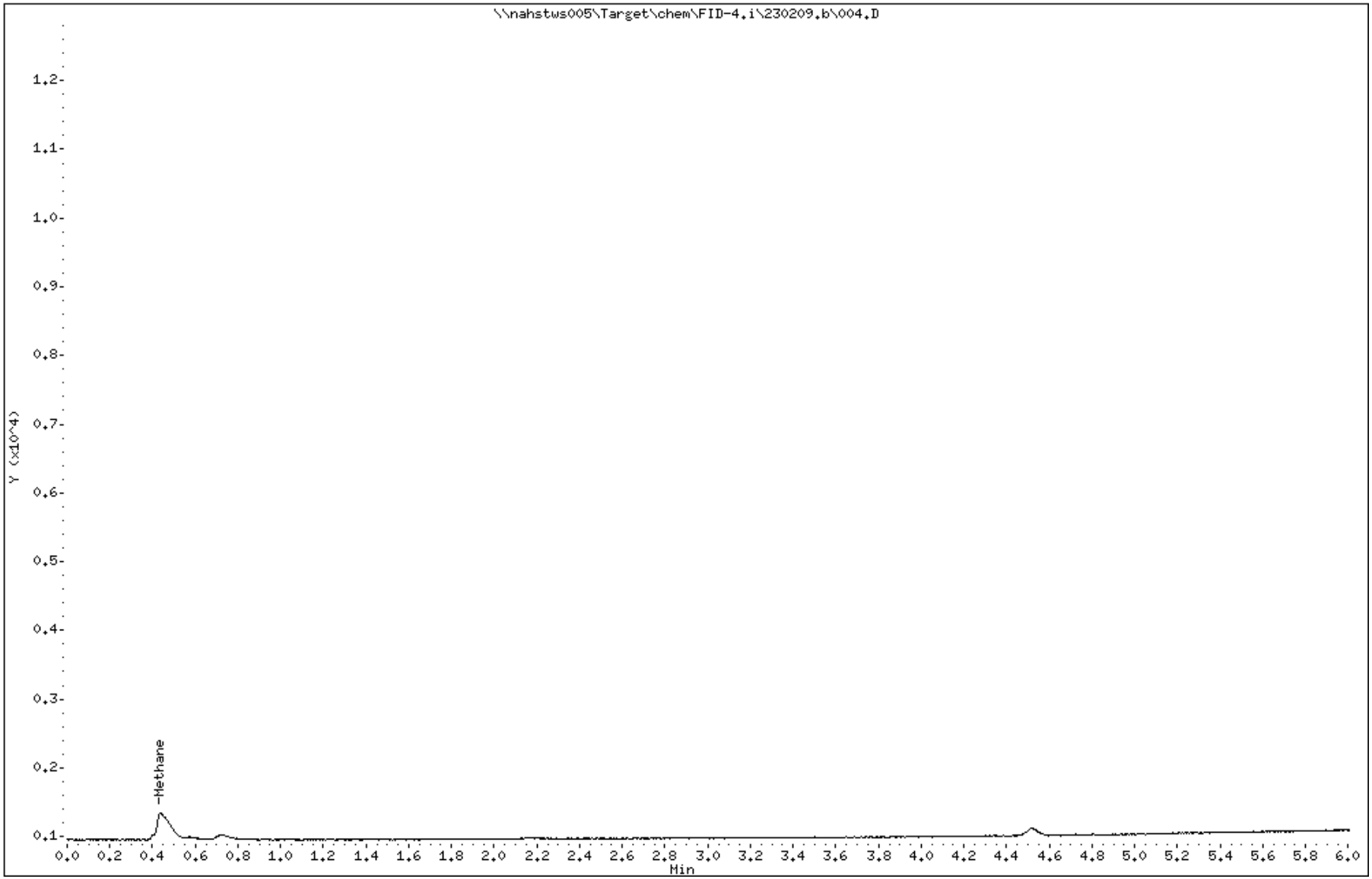
Instrument: FID-4.i

Sample Info: HS23020265-01;HS23020265-01

Operator: PL

Column phase: Rtx-PLOT

Column diameter: 0.53



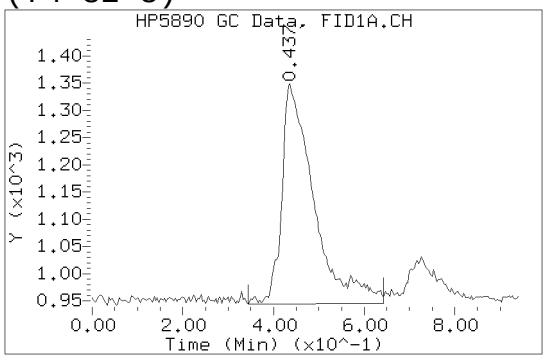
Data File : \\nahstws005\Target\chem\FID-4.i\230209.b\004.D
Inj Date : 09-FEB-2023 07:55
InstruID : FID-4.i
LabSampID : HS23020265-01

Methane (74-82-8)

Reason Code:

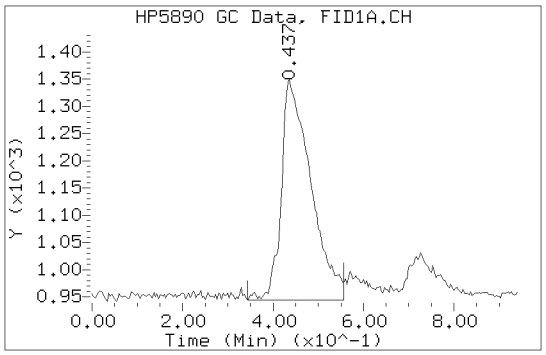
BEFORE

MASS
100
AREA
0
HEIGHT
0
09-Feb-2023
08:02
ALSHS
Server




AFTER

MASS
100
AREA
1839
HEIGHT
405
09-Feb-2023
08:29
ALSHS
Ser



Data File: \\nahstws005\Target\chem\FID-4.i\230209.b\005.D Page 1
Report Date: 09-Feb-2023 08:30

ALS Laboratory Group

Dissolved Gases Analysis

Data file : \\nahstws005\Target\chem\FID-4.i\230209.b\005.D
Lab Smp Id: HS23020265-02 Client Smp ID: HS23020265-02
Inj Date : 09-FEB-2023 08:05
Operator : PL Inst ID: FID-4.i
Smp Info : HS23020265-02;HS23020265-02
Misc Info : ;1;0;1
Comment :
Method : \\nahstws005\Target\chem\FID-4.i\230209.b\RSKNI3.m
Meth Date : 09-Feb-2023 07:50 samy.mata Quant Type: ESTD
Cal Date : 24-JAN-2017 10:15 Cal File: 004.D
Als bottle: 5
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: RSK175.sub
Target Version: 4.14
Processing Host: NAHSTW7022

Concentration Formula: Amt * DF * CpndVariable
Cpnd Variable Local Compound Variable

| Compounds | RT | EXP RT | DLT RT | RESPONSE | CONCENTRATIONS ON-COLUMN ( ug/L) | CONCENTRATIONS FINAL ( ug/L) |
|---|---|---|---|---|---|---|
| 1 Methane | 0.443 | 0.440 | 0.003 | 6412 | 6.57646 | 6.576(M) |

QC Flag Legend

M - Compound response manually integrated.

01255649

Data File: \\nahstws005\Target\chem\FID-4.i\230209.b\005.D



Date : 09-FEB-2023 08:05

Client ID: HS23020265-02

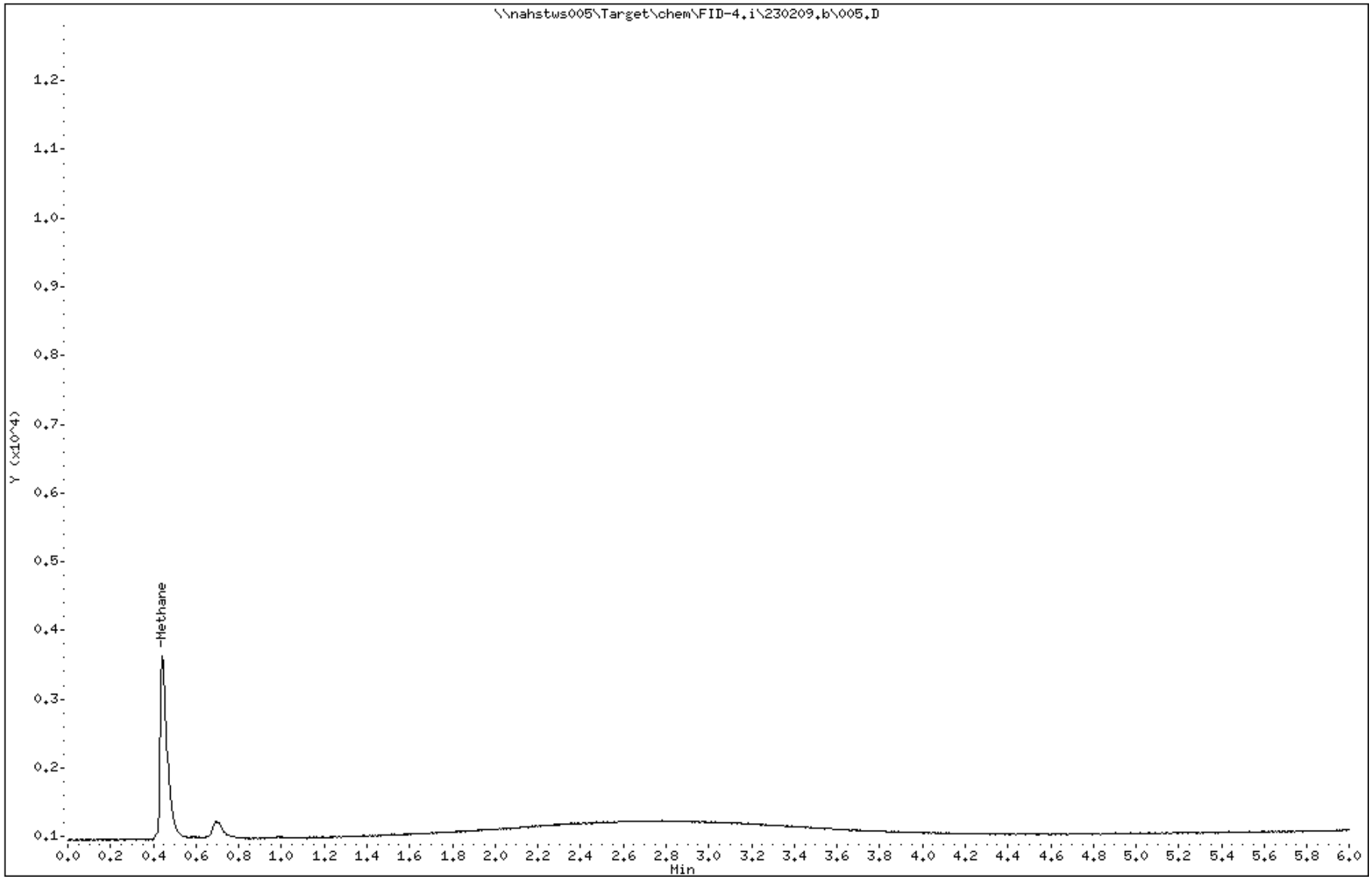
Instrument: FID-4.i

Sample Info: HS23020265-02;HS23020265-02

Operator: PL

Column phase: Rtx-PLOT

Column diameter: 0.53



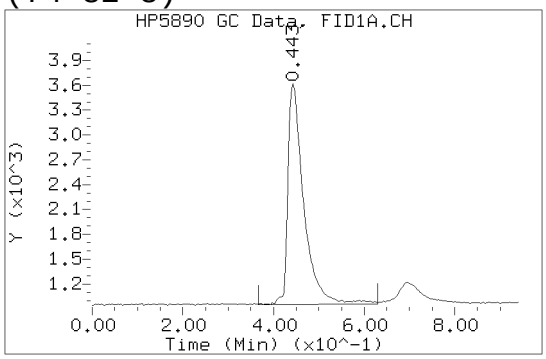
Data File : \\nahstws005\Target\chem\FID-4.i\230209.b\005.D
Inj Date : 09-FEB-2023 08:05
InstruID : FID-4.i
LabSampID : HS23020265-02

Methane (74-82-8)

Reason Code:

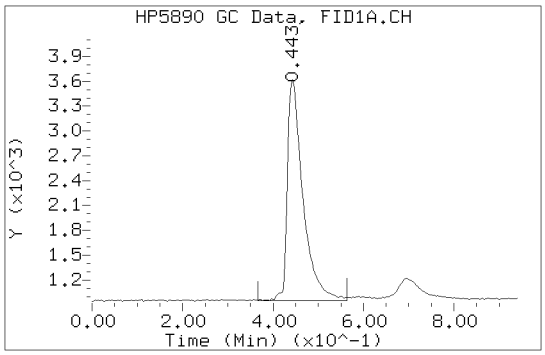
BEFORE

MASS
100
AREA
0
HEIGHT
0
09-Feb-2023
08:12
ALSHS
Server




AFTER

MASS
100
AREA
6412
HEIGHT
2670
09-Feb-2023
08:30
ALSHS
Ser



Data File: \\NAHSTWS005\Target\chem\FID-4.i\230209.b\006.D Page 1
Report Date: 16-Feb-2023 08:35

ALS Laboratory Group

Dissolved Gases Analysis

Data file : \\NAHSTWS005\Target\chem\FID-4.i\230209.b\006.D
Lab Smp Id: HS23020265-04 Client Smp ID: HS23020265-04
Inj Date : 09-FEB-2023 09:26
Operator : PL Inst ID: FID-4.i
Smp Info : HS23020265-04;HS23020265-04
Misc Info : ;1;0;1
Comment :
Method : \\nahstws005\Target\chem\FID-4.i\230209.b\RSKNI3.m
Meth Date : 09-Feb-2023 12:38 samy.mata Quant Type: ESTD
Cal Date : 24-JAN-2017 10:15 Cal File: 004.D
Als bottle: 6
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: RSK175.sub
Target Version: 4.14
Processing Host: NAHSTW7022

Concentration Formula: Amt * DF * CpndVariable
Cpnd Variable Local Compound Variable

| Compounds | RT | EXP RT | DLT RT | RESPONSE | CONCENTRATIONS ON-COLUMN ( ug/L) | CONCENTRATIONS FINAL ( ug/L) |
|---|---|---|---|---|---|---|
| 1 Methane | 0.470 | 0.440 | 0.030 | 1696 | 1.73950 | 1.739(M) |

QC Flag Legend

M - Compound response manually integrated.

01255652

Data File: \\NAHSTWS005\Target\chem\FID-4.i\230209.b\006.D



Date : 09-FEB-2023 09:26

Client ID: HS23020265-04

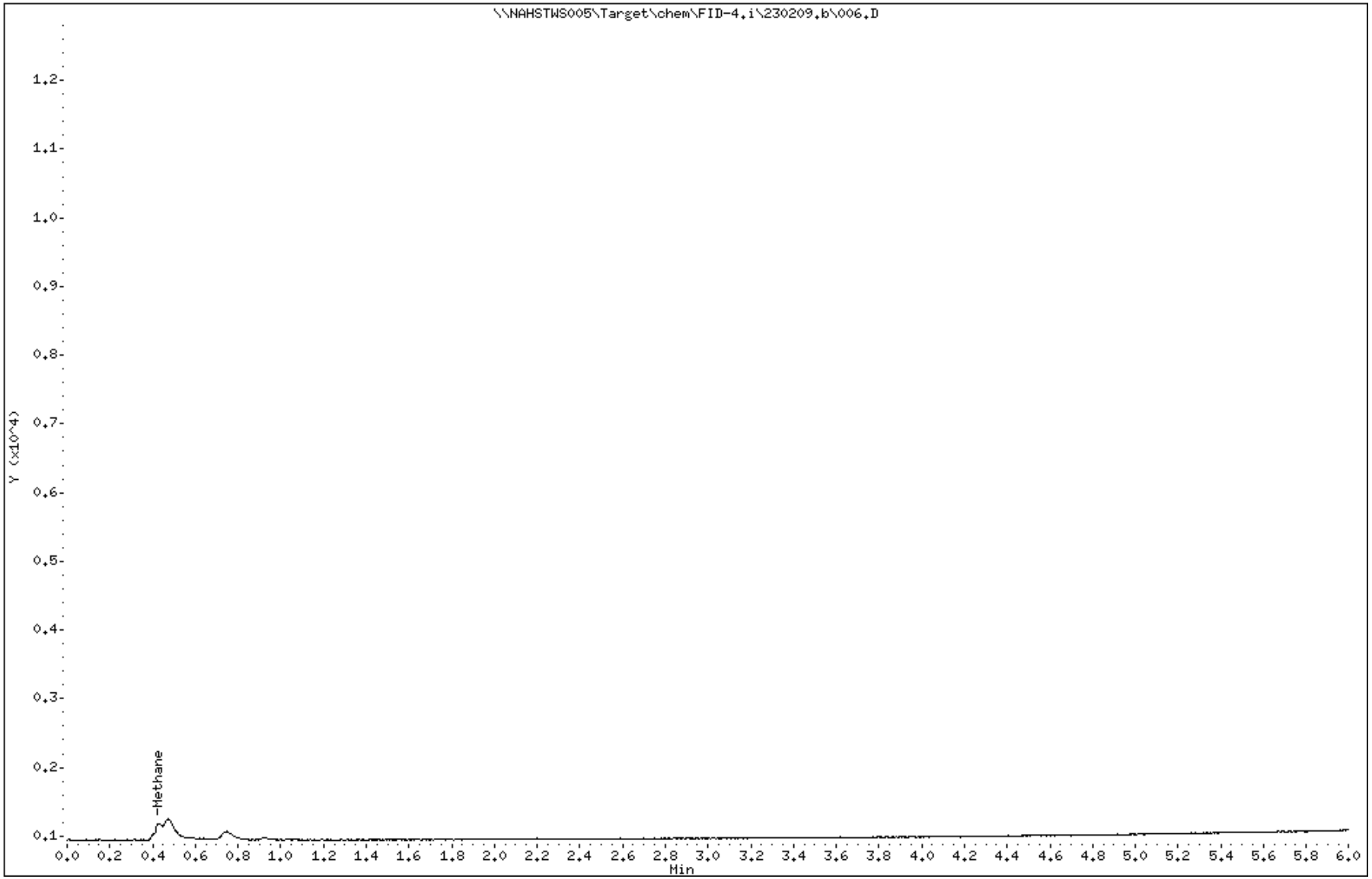
Instrument: FID-4.i

Sample Info: HS23020265-04;HS23020265-04

Operator: PL

Column phase: Rtx-PLOT

Column diameter: 0.53



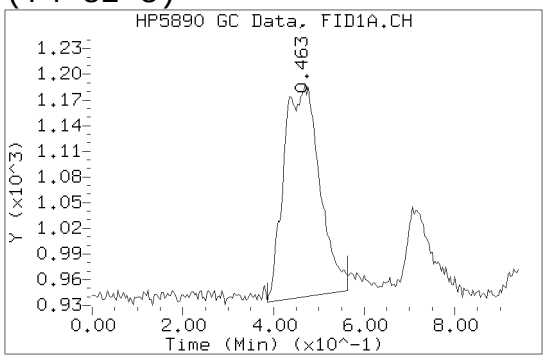
Data File : \\NAHSTWS005\Target\chem\FID-4.i\230209.b\006.D
Inj Date : 09-FEB-2023 09:26
InstruID : FID-4.i
LabSampID : HS23020265-04

Methane (74-82-8)

Reason Code:

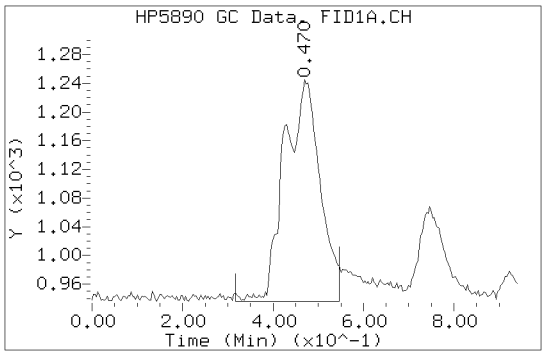
BEFORE

MASS
100
AREA
0
HEIGHT
0
09-Feb-2023
08:22
ALSHS
Server




AFTER

MASS
100
AREA
1696
HEIGHT
309
16-Feb-2023
08:35
ALSHS
Ser



Data File: \\nahstws005\Target\chem\FID-4.i\230209.b\007.D Page 1
Report Date: 09-Feb-2023 10:35

ALS Laboratory Group

Dissolved Gases Analysis

Data file : \\nahstws005\Target\chem\FID-4.i\230209.b\007.D
Lab Smp Id: HS23020265-04MS Client Smp ID: HS23020265-04MS
Inj Date : 09-FEB-2023 10:07
Operator : PL Inst ID: FID-4.i
Smp Info : HS23020265-04MS;HS23020265-04MS
Misc Info : ;1;0;1
Comment :
Method : \\nahstws005\Target\chem\FID-4.i\230209.b\RSKNI3.m
Meth Date : 09-Feb-2023 07:50 samy.mata Quant Type: ESTD
Cal Date : 24-JAN-2017 10:15 Cal File: 004.D
Als bottle: 7
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: RSK175.sub
Target Version: 4.14
Processing Host: NAHSTW7022

Concentration Formula: Amt * DF * CpndVariable
Cpnd Variable Local Compound Variable

| Compounds | RT | EXP RT | DLT RT | RESPONSE | CONCENTRATIONS ON-COLUMN ( ug/L) | CONCENTRATIONS FINAL ( ug/L) |
|---|---|---|---|---|---|---|
| 1 Methane | 0.436 | 0.440 | -0.004 | 10345 | 10.6103 | 10.610 |
| 2 Ethene | 0.656 | 0.660 | -0.004 | 12237 | 20.8908 | 20.890 |
| 3 Ethane | 0.726 | 0.733 | -0.007 | 17412 | 24.2005 | 24.200 |

01255655

Data File: \\nahstws005\Target\chem\FID-4.i\230209.b\007.D



Date : 09-FEB-2023 10:07

Client ID: HS23020265-04MS

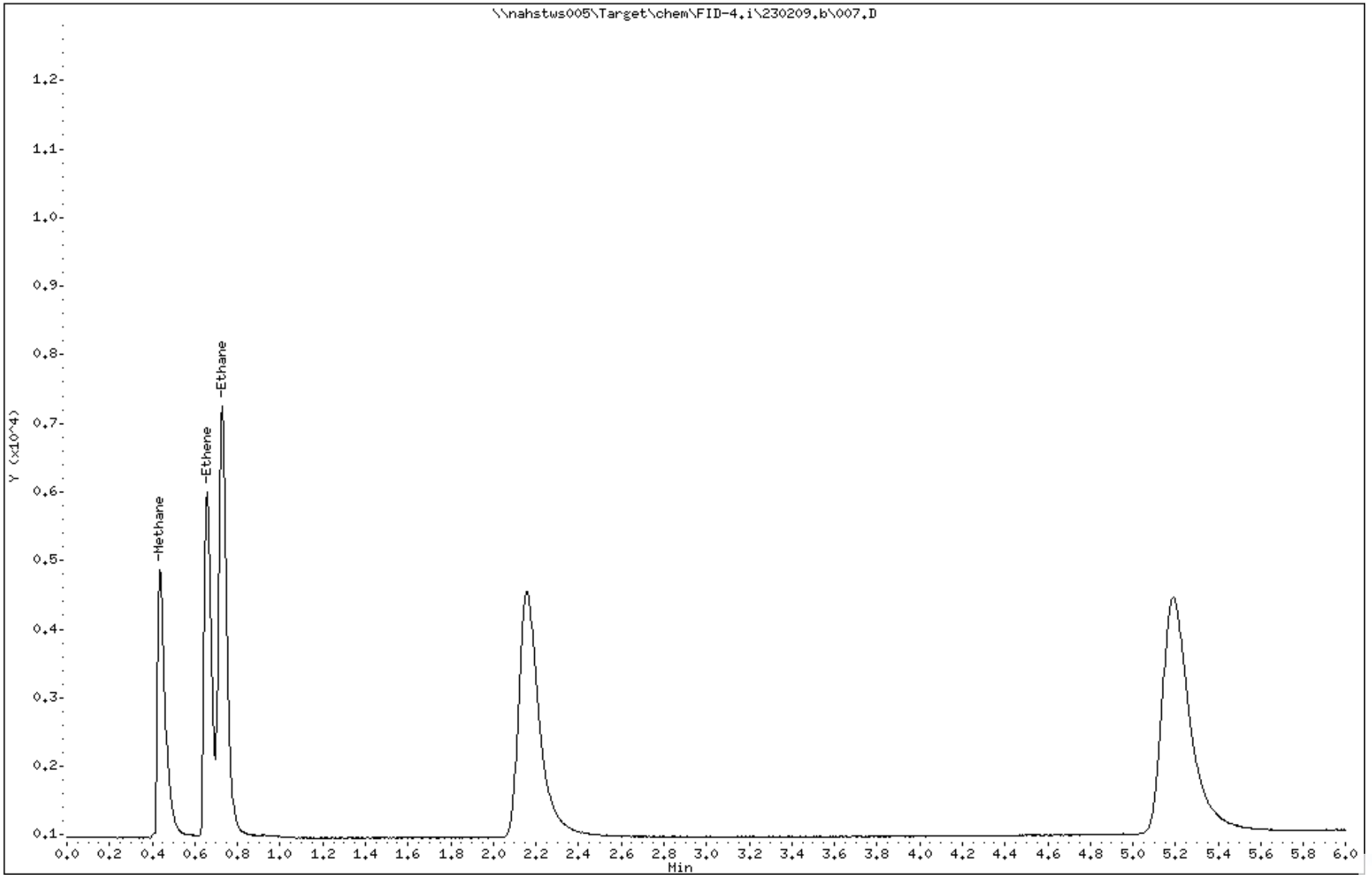
Instrument: FID-4.i

Sample Info: HS23020265-04MS;HS23020265-04MS

Operator: PL

Column phase: Rtx-PLOT

Column diameter: 0.53



Data File : \\nahstws005\Target\chem\FID-4.i\230209.b\007.D
Inj Date  : 09-FEB-2023 10:07
InstruID  : FID-4.i
LabSampID : HS23020265-04MS

NO MANUAL INTEGRATIONS

Data File: \\nahstws005\Target\chem\FID-4.i\230209.b\008.D Page 1
Report Date: 09-Feb-2023 10:35

ALS Laboratory Group

Dissolved Gases Analysis

Data file : \\nahstws005\Target\chem\FID-4.i\230209.b\008.D
Lab Smp Id: HS23020265-04MSD Client Smp ID: HS23020265-04MSD
Inj Date : 09-FEB-2023 10:16
Operator : PL Inst ID: FID-4.i
Smp Info : HS23020265-04MSD;HS23020265-04MSD
Misc Info : ;1;0;1
Comment :
Method : \\nahstws005\Target\chem\FID-4.i\230209.b\RSKNI3.m
Meth Date : 09-Feb-2023 07:50 samy.mata Quant Type: ESTD
Cal Date : 24-JAN-2017 10:15 Cal File: 004.D
Als bottle: 8
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: RSK175.sub
Target Version: 4.14
Processing Host: NAHSTW7022

Concentration Formula: Amt * DF * CpndVariable
Cpnd Variable Local Compound Variable

| Compounds | RT | EXP RT | DLT RT | RESPONSE | CONCENTRATIONS ON-COLUMN ( ug/L) | CONCENTRATIONS FINAL ( ug/L) |
|---|---|---|---|---|---|---|
| 1 Methane | 0.436 | 0.440 | -0.004 | 10460 | 10.7283 | 10.728 |
| 2 Ethene | 0.656 | 0.660 | -0.004 | 12285 | 20.9727 | 20.972 |
| 3 Ethane | 0.726 | 0.733 | -0.007 | 17592 | 24.4507 | 24.450 |

01255658

Data File: \\nahstws005\Target\chem\FID-4.i\230209.b\008.D



Date : 09-FEB-2023 10:16

Client ID: HS23020265-04MSD

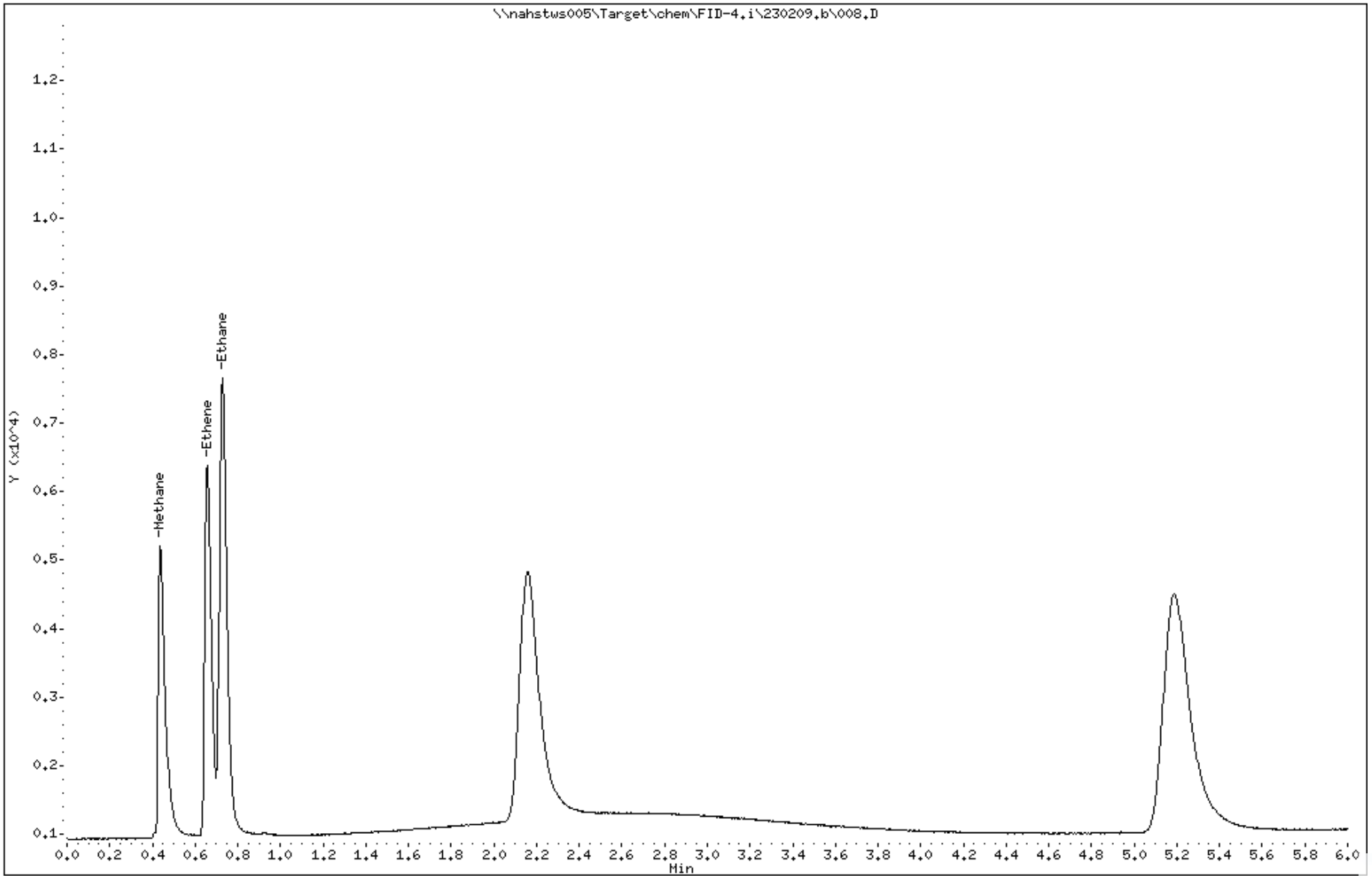
Instrument: FID-4.i

Sample Info: HS23020265-04MSD;HS23020265-04MSD

Operator: PL

Column phase: Rtx-PLOT

Column diameter: 0.53



Data File : \\nahstws005\Target\chem\FID-4.i\230209.b\008.D
Inj Date  : 09-FEB-2023 10:16
InstruID  : FID-4.i
LabSampID : HS23020265-04MSD

NO MANUAL INTEGRATIONS

ALS Laboratory Group

Dissolved Gases Analysis

Data file : \\nahstws005\Target\chem\FID-4.i\230209.b\011.D
Lab Smp Id: RSK-CCV Client Smp ID: RSK-CCV
Inj Date : 09-FEB-2023 11:00
Operator : PL Inst ID: FID-4.i
Smp Info : RSK-CCV;RSK-CCV;2;4
Misc Info : ;1;0;1
Comment :
Method : \\nahstws005\Target\chem\FID-4.i\230209.b\RSKNI3.m
Meth Date : 09-Feb-2023 11:12 samy.mata Quant Type: ESTD
Cal Date : 24-JAN-2017 10:15 Cal File: 004.D
Als bottle: 11 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: RSK175.sub
Target Version: 4.14
Processing Host: NAHSTW7022

Concentration Formula: Amt * DF * CpndVariable
Cpnd Variable Local Compound Variable

| | | | | | AMOUNTS | |
|---|---|---|---|---|---|---|
| | | | | | CAL-AMT | ON-COL |
| Compounds | RT | EXP RT | DLT RT | RESPONSE | ( ug/L) | ( ug/L) |
| 1 Methane | 0.426 | 0.426 | 0.000 | 7999 | 9.64700 | 8.204 |
| 2 Ethene | 0.646 | 0.646 | 0.000 | 9873 | 16.8500 | 16.855 |
| 3 Ethane | 0.716 | 0.716 | 0.000 | 13810 | 18.0430 | 19.194 |

01255661

Data File: \\nahstws005\Target\chem\FID-4.i\230209.b\011.D



Date : 09-FEB-2023 11:00

Client ID: RSK-CCV

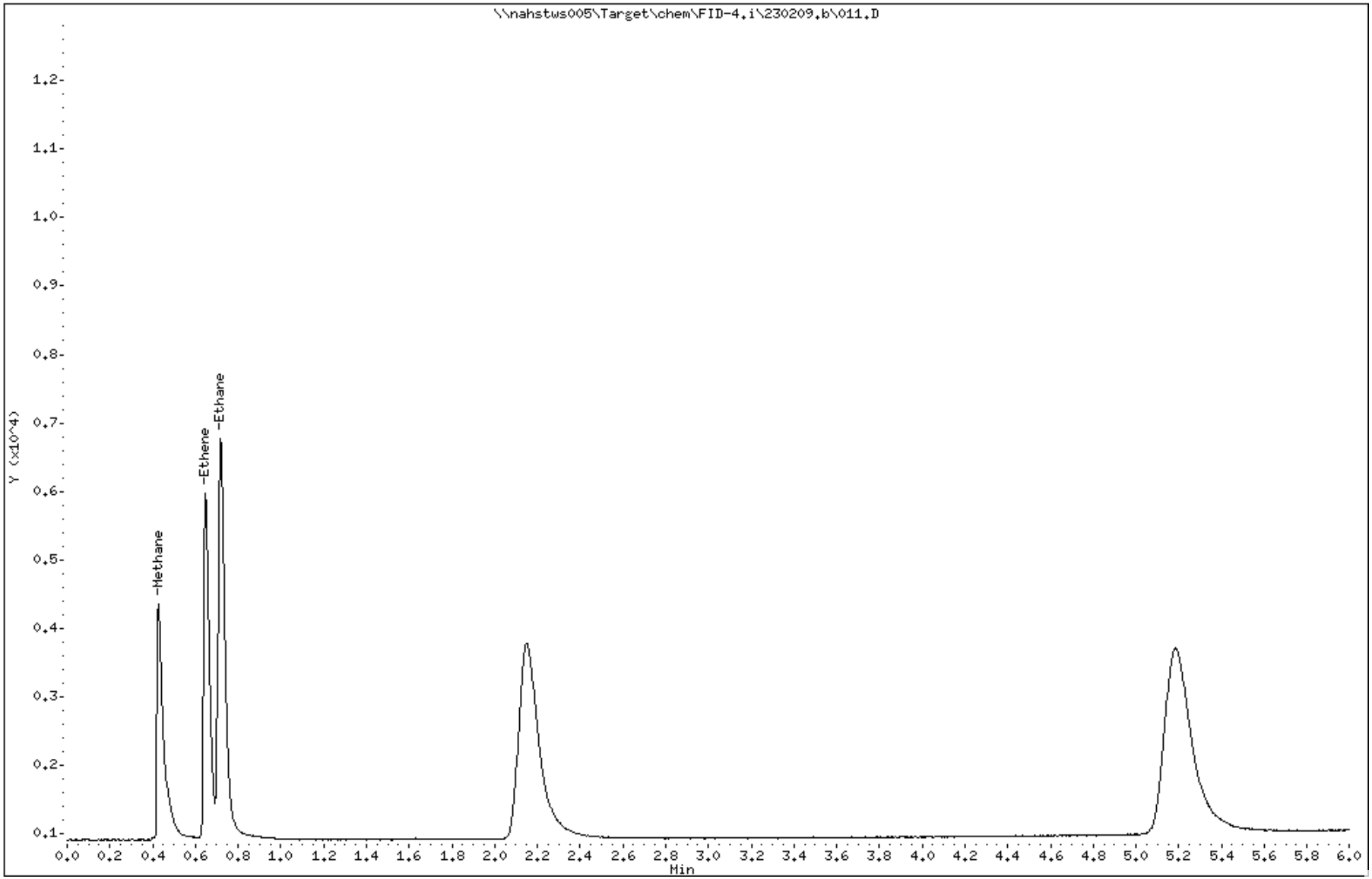
Instrument: FID-4.i

Sample Info: RSK-CCV;RSK-CCV;2;4

Operator: PL

Column phase: Rtx-PLOT

Column diameter: 0.53



Data File : \\nahstws005\Target\chem\FID-4.i\230209.b\011.D
Inj Date  : 09-FEB-2023 11:00
InstruID  : FID-4.i
LabSampID : RSK-CCV

NO MANUAL INTEGRATIONS

ALS Laboratory Group

Dissolved Gases Analysis

Data file : \\nahstws005\Target\chem\FID-4.i\230209.b\013.D
Lab Smp Id: RSK-CCV Client Smp ID: RSK-CCV
Inj Date : 09-FEB-2023 11:49
Operator : PL Inst ID: FID-4.i
Smp Info : RSK-CCV;RSK-CCV;2;4
Misc Info : ;1;0;1
Comment :
Method : \\nahstws005\Target\chem\FID-4.i\230209.b\RSKNI3.m
Meth Date : 09-Feb-2023 12:38 samy.mata Quant Type: ESTD
Cal Date : 24-JAN-2017 10:15 Cal File: 004.D
Als bottle: 13 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: RSK175.sub
Target Version: 4.14
Processing Host: NAHSTW7022

Concentration Formula: Amt * DF * CpndVariable
Cpnd Variable Local Compound Variable

| Compounds | RT | EXP RT | DLT RT | RESPONSE | AMOUNTS CAL-AMT ( ug/L) | AMOUNTS ON-COL ( ug/L) |
|---|---|---|---|---|---|---|
| 1 Methane | 0.426 | 0.426 | 0.000 | 8469 | 9.64700 | 8.686 |
| 2 Ethene | 0.646 | 0.646 | 0.000 | 9963 | 16.8500 | 17.008 |
| 3 Ethane | 0.716 | 0.716 | 0.000 | 15026 | 18.0430 | 20.884 |

01255664

Data File: \\nahstws005\Target\chem\FID-4.i\230209.b\013.D

Page 1

Date : 09-FEB-2023 11:49

Client ID: RSK-CCV

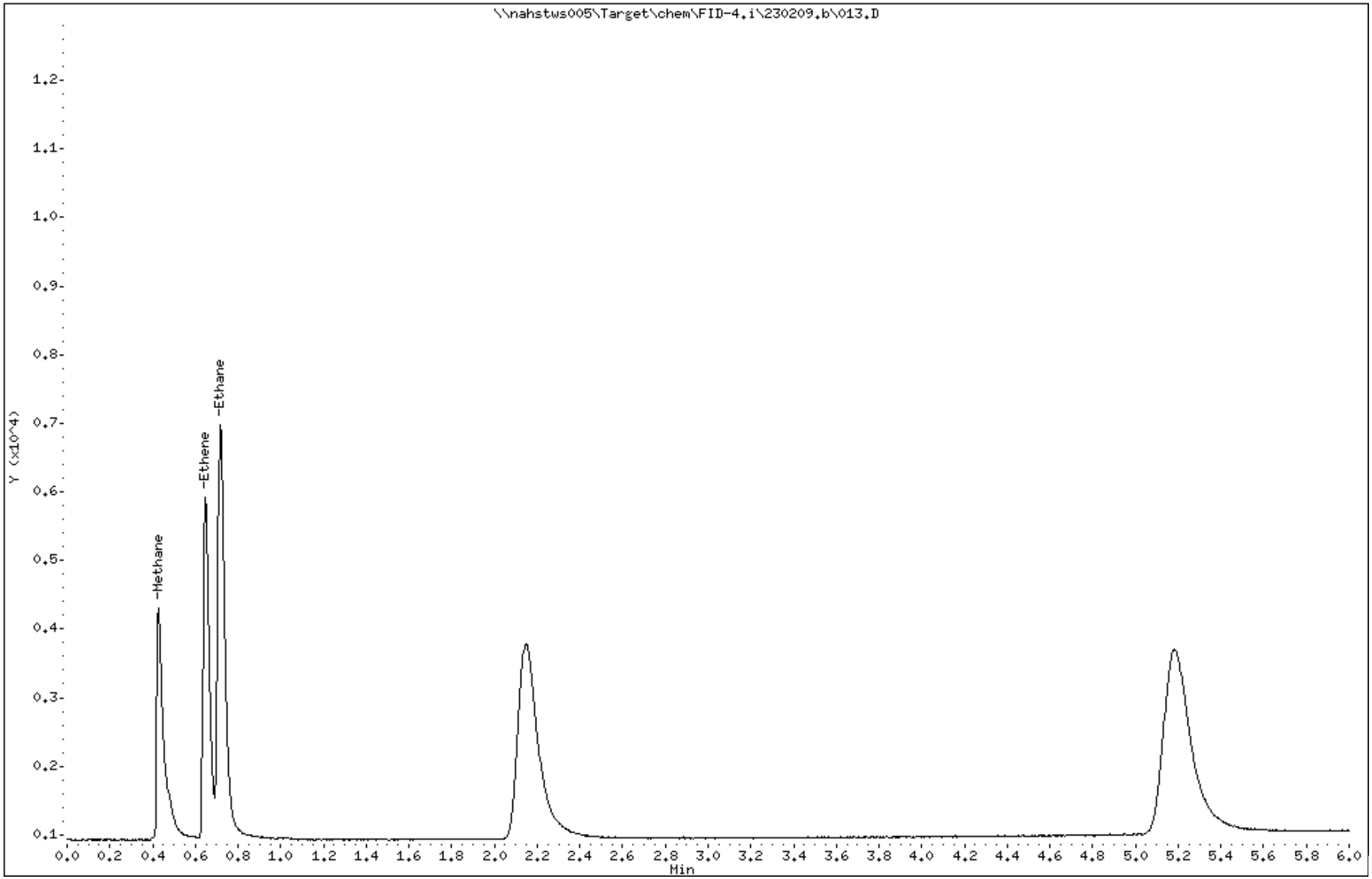
Instrument: FID-4.i

Sample Info: RSK-CCV;RSK-CCV;2;4

Operator: PL

Column phase: Rtx-PLOT

Column diameter: 0.53



Data File : \\nahstws005\Target\chem\FID-4.i\230209.b\013.D
Inj Date  : 09-FEB-2023 11:49
InstruID  : FID-4.i
LabSampID : RSK-CCV

NO MANUAL INTEGRATIONS

# HS23020265 Wet Chemistry

ALS WO# HS23020265

C:\TOC-L\Data\2022_12_22_002_CAL.tlx

H5230202G5

| | Type | Analysis | Sample Nam | Sample ID | Origin | Manual Diluti | Result | Notes | Status |
|---|---|---|---|---|---|---|---|---|---|
| 1 | Standard | NPOC | CAL | 3100606518 | 12_22_2022.2 | 1.000 | | | Completed |
| 2 | Unknown | NPOC | ICV | 3100606203 | 12_22_2022.c | 1.000 | NPOC:10.7 | | Completed |
| 3 | Unknown | NPOC | ICB | | 12_22_2022.c | 1.000 | NPOC:0.34 | | Completed |

C:\TOC-L\Data\2022_12_22_002_CAL.tlx

| | Date / Time | Vial |
|---|---|---|
| 1 | 12/22/2022 | 1, 2, 3, 4, 5, |
| 2 | 12/22/2022 | 8 |
| 3 | 12/22/2022 | 1 |

# TOC-Control L Report

2022_12_22_002_CAL.tlx

**Instr.Information**

Instrument Options: TOC/ASI/IC Unit/
Catalyst: Regular Sensitivity

**Cal. Curve**

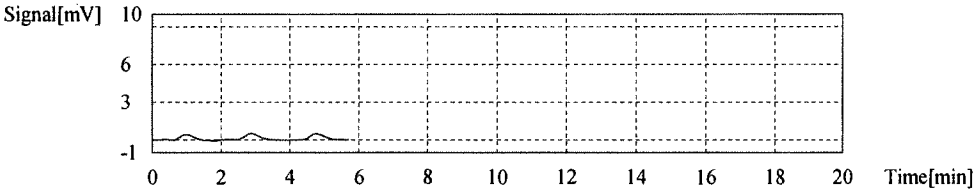
Sample Name: CAL
Sample ID: 3100606518
Cal. Curve: 12_22_2022.2022_12_22_13_06_45.cal
Status: Completed

| Type | Anal. |
|---|---|
| Standard | NPOC |

Conc: 0.000mg/L

| No. | Area | Inj. Vol. | Aut. Dil. | Rem. | Ex. | Date / Time |
|---|---|---|---|---|---|---|
| 1 | 1.350 | 50uL | 1.000 | ******* | | 12/22/2022 12:15:57 PM |
| 2 | 1.448 | 50uL | 1.000 | ******* | | 12/22/2022 12:18:06 PM |
| 3 | 1.380 | 50uL | 1.000 | ******* | | 12/22/2022 12:20:13 PM |

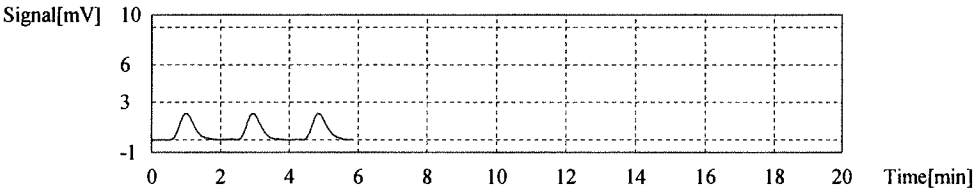
Acid Add. 1.500%
Sparge Gas Flow 80mL/min
Sp. Time 120.0sec
Mean Area 1.393




Conc: 1.000mg/L

| No. | Area | Inj. Vol. | Aut. Dil. | Rem. | Ex. | Date / Time |
|---|---|---|---|---|---|---|
| 1 | 6.297 | 50uL | 1.000 | ******* | | 12/22/2022 12:28:55 PM |
| 2 | 5.988 | 50uL | 1.000 | ******* | | 12/22/2022 12:31:02 PM |
| 3 | 6.247 | 50uL | 1.000 | ******* | | 12/22/2022 12:33:14 PM |

Acid Add. 1.500%
Sparge Gas Flow 80mL/min
Sp. Time 120.0sec
Mean Area 6.177



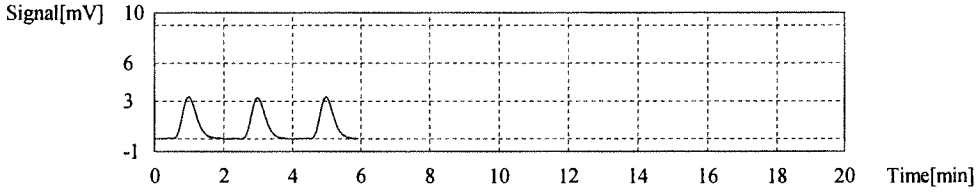

Conc: 2.000mg/L

| No. | Area | Inj. Vol. | Aut. Dil. | Rem. | Ex. | Date / Time |
|---|---|---|---|---|---|---|
| 1 | 9.406 | 50uL | 1.000 | ******* | | 12/22/2022 12:41:58 PM |
| 2 | 9.448 | 50uL | 1.000 | ******* | | 12/22/2022 12:44:11 PM |
| 3 | 9.385 | 50uL | 1.000 | ******* | | 12/22/2022 12:46:20 PM |

# TOC-Control L Report

2022_12_22_002_CAL.tlx

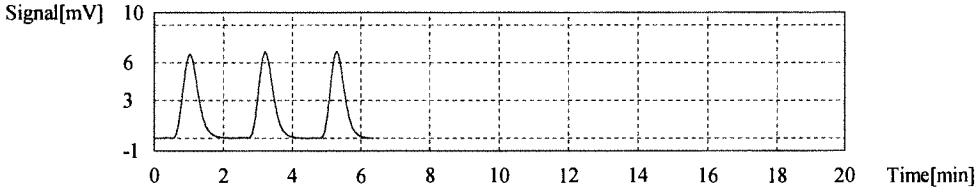
| | |
|---|---|
| Acid Add. | 1.500% |
| Sparge Gas Flow | 80mL/min |
| Sp. Time | 120.0sec |
| Mean Area | 9.413 |




Conc: 5.000mg/L

| No. | Area | Inj. Vol. | Aut. Dil. | Rem. | Ex. | Date / Time |
|---|---|---|---|---|---|---|
| 1 | 20.41 | 50uL | 1.000 | ******* | | 12/22/2022 12:55:16 PM |
| 2 | 20.23 | 50uL | 1.000 | ******* | | 12/22/2022 12:57:35 PM |
| 3 | 20.36 | 50uL | 1.000 | ******* | | 12/22/2022 12:59:53 PM |

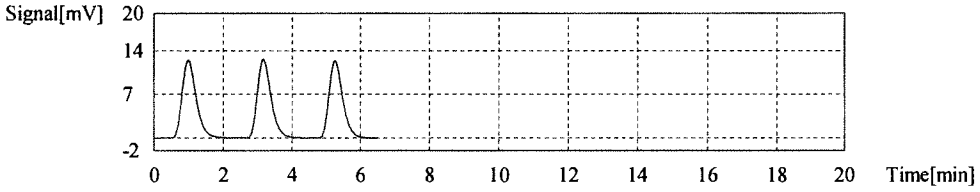
| | |
|---|---|
| Acid Add. | 1.500% |
| Sparge Gas Flow | 80mL/min |
| Sp. Time | 120.0sec |
| Mean Area | 20.33 |




Conc: 10.00mg/L

| No. | Area | Inj. Vol. | Aut. Dil. | Rem. | Ex. | Date / Time |
|---|---|---|---|---|---|---|
| 1 | 35.65 | 50uL | 1.000 | ******* | | 12/22/2022 1:08:48 PM |
| 2 | 35.20 | 50uL | 1.000 | ******* | | 12/22/2022 1:11:07 PM |
| 3 | 35.02 | 50uL | 1.000 | ******* | | 12/22/2022 1:13:30 PM |

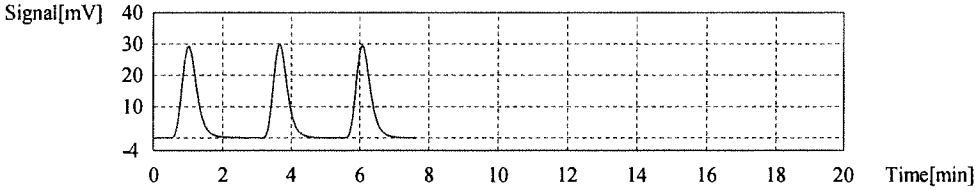
| | |
|---|---|
| Acid Add. | 1.500% |
| Sparge Gas Flow | 80mL/min |
| Sp. Time | 120.0sec |
| Mean Area | 35.29 |




Conc: 25.00mg/L

| No. | Area | Inj. Vol. | Aut. Dil. | Rem. | Ex. | Date / Time |
|---|---|---|---|---|---|---|
| 1 | 88.49 | 50uL | 1.000 | ******* | | 12/22/2022 1:22:53 PM |
| 2 | 87.55 | 50uL | 1.000 | ******* | | 12/22/2022 1:25:34 PM |
| 3 | 87.85 | 50uL | 1.000 | ******* | | 12/22/2022 1:28:20 PM |

| | |
|---|---|
| Acid Add. | 1.500% |
| Sparge Gas Flow | 80mL/min |
| Sp. Time | 120.0sec |
| Mean Area | 87.96 |



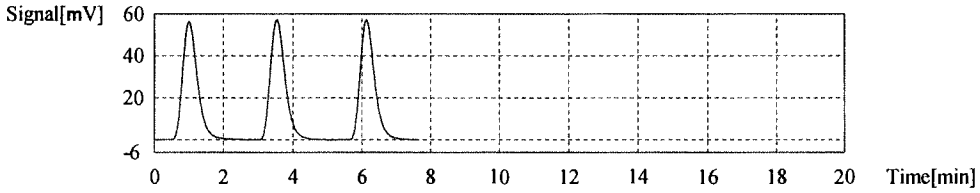

Conc: 50.00mg/L

# TOC-Control L Report

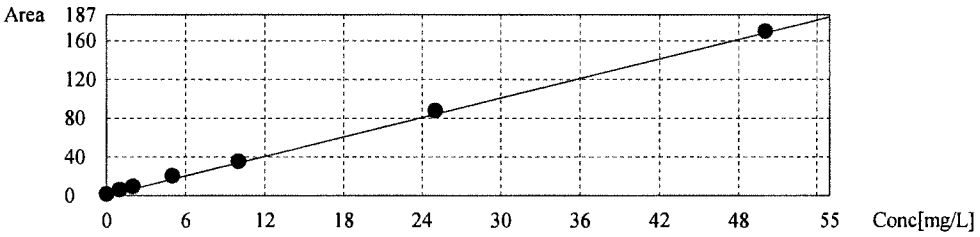
2022_12_22_002_CAL.tlx

| No. | Area | Inj. Vol. | Aut. Dil. | Rem. | Ex. | Date / Time |
|---|---|---|---|---|---|---|
| 1 | 169.8 | 50uL | 1.000 | ******* | | 12/22/2022 1:37:37 PM |
| 2 | 171.3 | 50uL | 1.000 | ******* | | 12/22/2022 1:40:28 PM |
| 3 | 168.9 | 50uL | 1.000 | ******* | | 12/22/2022 1:43:09 PM |

Acid Add. 1.500%
Sparge Gas Flow 80mL/min
Sp. Time 120.0sec
Mean Area 170.0




Slope: 3.361
Intercept 0.000
r^2 0.9998
r 0.9999
RSE(%) N/A
Zero Shift Yes




**Sample**

Sample Name: ICV
Sample ID: 3100606203
Origin: 12_22_2022.cal
Status Completed
Chk. Result

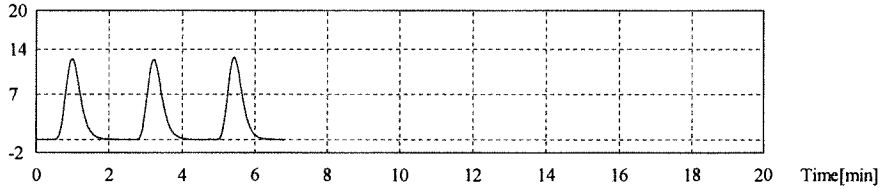
| Type | Anal. | Manual Dilution | Result |
|---|---|---|---|
| Unknown | NPOC | 1.000 | NPOC:10.79mg/L |

1. Det

Anal.: NPOC

| No. | Area | Conc. | Inj. Vol. | Aut. Dil. | Ex. | Cal. Curve | Date / Time |
|---|---|---|---|---|---|---|---|
| 1 | 36.41 | 10.83mg/L | 50uL | 1.000 | | 12_22_2022.2022_12_22_13_06_45.cal | 12/22/2022 1:52:08 PM |
| 2 | 36.34 | 10.81mg/L | 50uL | 1.000 | | 12_22_2022.2022_12_22_13_06_45.cal | 12/22/2022 1:54:34 PM |
| 3 | 36.03 | 10.72mg/L | 50uL | 1.000 | | 12_22_2022.2022_12_22_13_06_45.cal | 12/22/2022 1:57:10 PM |

Mean Area 36.26
Mean Conc. 10.79mg/L




**Sample**

# TOC-Control L Report

2022_12_22_002_CAL.tlx

Sample Name: ICB
Sample ID:
Origin: 12_22_2022.cal
Status Completed
Chk. Result

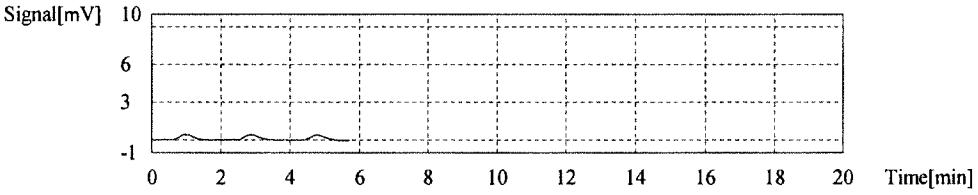
| Type | Anal | Manual Dilution | Result |
|---|---|---|---|
| Unknown | NPOC | 1.000 | NPOC:0.3481mg/L |

1. Det

Anal.: NPOC

| No. | Area | Conc. | Inj. Vol. | Aut. Dil. | Ex. | Cal. Curve | Date / Time |
|---|---|---|---|---|---|---|---|
| 1 | 1.237 | 0.3681mg/L | 50uL | 1.000 | | 12_22_2022.2022_12_22_13_06_45.cal | 12/22/2022 2:06:02 PM |
| 2 | 1.118 | 0.3327mg/L | 50uL | 1.000 | | 12_22_2022.2022_12_22_13_06_45.cal | 12/22/2022 2:08:10 PM |
| 3 | 1.155 | 0.3437mg/L | 50uL | 1.000 | | 12_22_2022.2022_12_22_13_06_45.cal | 12/22/2022 2:10:18 PM |

Mean Area 1.170
Mean Conc. 0.3481mg/L



C:\TOC-L\Data\2023_02_20_001.tlx

| | Type | Analysis | Sample Name | Sample ID | Origin | Manual Diluti | Result | Notes |
|---|---|---|---|---|---|---|---|---|
| 1 | Unknown | NPOC | CCV | 321102607 | 12_22_2022 | 1.000 | NPOC:26.67mg/L | |
| 2 | Unknown | NPOC | CCB | | 12_22_2022 | 1.000 | NPOC:0.08332mg | |
| 3 | Unknown | NPOC | MBLK-02142023 | | 12_22_2022 | 1.000 | NPOC:0.1648mg/ | |
| 4 | Unknown | NPOC | LCS-02142023 | 3100606203 | 12_22_2022 | 1.000 | NPOC:11.42mg/L | |
| 5 | Unknown | NPOC | LCSD-02142023 | | 12_22_2022 | 1.000 | NPOC:11.48mg/L | |
| 6 | Unknown | NPOC | HS23020619-05 | | 12_22_2022 | 1.000 | NPOC:6.128mg/L | |
| 7 | Unknown | NPOC | HS23020619-06 | | 12_22_2022 | 1.000 | NPOC:13.60mg/L | |
| 8 | Unknown | NPOC | HS23020620-01 | | 12_22_2022 | 1.000 | NPOC:0.6013mg/ | |
| 9 | Unknown | NPOC | HS23020265-01 | | 12_22_2022 | 1.000 | NPOC:1.608mg/L | |
| 10 | Unknown | NPOC | HS23020265-02 | | 12_22_2022 | 1.000 | NPOC:5.964mg/L | |
| 11 | Unknown | NPOC | HS23020265-04 | | 12_22_2022 | 1.000 | NPOC:10.31mg/L | |
| 12 | Unknown | NPOC | HS23020265-04MS | | 12_22_2022 | 1.000 | NPOC:20.74mg/L | |
| 13 | Unknown | NPOC | CCV | 321102607 | 12_22_2022 | 1.000 | NPOC:26.88mg/L | |
| 14 | Unknown | NPOC | CCB | | 12_22_2022 | 1.000 | NPOC:0.1299mg/ | |
| 15 | Unknown | NPOC | HS23020634-01 | | 12_22_2022 | 1.000 | NPOC:0.5859mg/ | |
| 16 | Unknown | NPOC | HS23020634-02 | | 12_22_2022 | 1.000 | NPOC:0.4161mg/ | |
| 17 | Unknown | NPOC | HS23020634-03 | | 12_22_2022 | 1.000 | NPOC:0.5591mg/ | |
| 18 | Unknown | NPOC | HS23020634-04 | | 12_22_2022 | 1.000 | NPOC:0.7711mg/ | |
| 19 | Unknown | NPOC | CCV | 321102607 | 12_22_2022 | 1.000 | NPOC:26.74mg/L | |
| 20 | Unknown | NPOC | CCB | | 12_22_2022 | 1.000 | NPOC:0.00322mg | |

C:\TOC-L\Data\2023_02_20_001.tlx

| | Status | Date / Time | Vial |
|---|---|---|---|
| 1 | Completed | 2/20/2023 1:00:39 P | 1 |
| 2 | Completed | 2/20/2023 1:13:45 P | 2 |
| 3 | Completed | 2/20/2023 1:26:41 P | 3 |
| 4 | Completed | 2/20/2023 1:41:22 P | 4 |
| 5 | Completed | 2/20/2023 1:55:28 P | 5 |
| 6 | Completed | 2/20/2023 2:09:15 P | 6 |
| 7 | Completed | 2/20/2023 2:23:33 P | 7 |
| 8 | Completed | 2/20/2023 2:36:29 P | 8 |
| 9 | Completed | 2/20/2023 2:49:50 P | 9 |
| 10 | Completed | 2/20/2023 3:03:20 P | 10 |
| 11 | Completed | 2/20/2023 3:17:41 P | 11 |
| 12 | Completed | 2/20/2023 3:32:27 P | 12 |
| 13 | Completed | 2/20/2023 3:47:29 P | 1 |
| 14 | Completed | 2/20/2023 4:00:27 P | 2 |
| 15 | Completed | 2/20/2023 4:13:31 P | 13 |
| 16 | Completed | 2/20/2023 4:26:27 P | 14 |
| 17 | Completed | 2/20/2023 4:39:24 P | 15 |
| 18 | Completed | 2/20/2023 4:52:19 P | 16 |
| 19 | Completed | 2/20/2023 5:07:51 P | 1 |
| 20 | Completed | 2/20/2023 5:20:48 P | 2 |

# TOC-Control L Report

2023_02_20_001.tlx

**Instr.Information**

Instrument Options: TOC/ASI/IC Unit/
Catalyst: Regular Sensitivity

**Sample**

Sample Name: CCV
Sample ID: 321102607
Origin: 12_22_2022.cal
Status: Completed
Chk. Result:

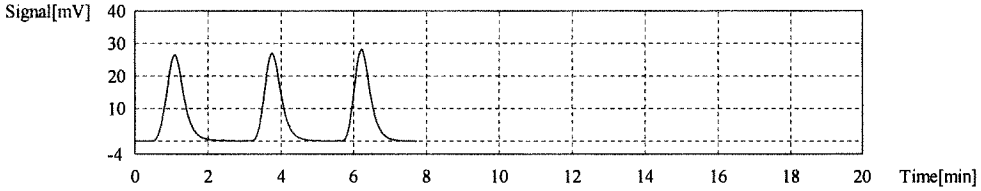
| Type | Anal. | Manual Dilution | Result |
|---|---|---|---|
| Unknown | NPOC | 1.000 | NPOC:26.67mg/L |

1. Det

Anal.: NPOC

| No. | Area | Conc. | Inj. Vol. | Aut. Dil. | Ex. | Cal. Curve | Date / Time |
|---|---|---|---|---|---|---|---|
| 1 | 90.26 | 26.86mg/L | 50uL | 1.000 | | 12_22_2022.2022_12_22_13_06_45.cal | 2/20/2023 12:55:08 PM |
| 2 | 89.12 | 26.52mg/L | 50uL | 1.000 | | 12_22_2022.2022_12_22_13_06_45.cal | 2/20/2023 12:57:52 PM |
| 3 | 89.54 | 26.64mg/L | 50uL | 1.000 | | 12_22_2022.2022_12_22_13_06_45.cal | 2/20/2023 1:00:39 PM |

Mean Area: 89.64
Mean Conc.: 26.67mg/L




**Sample**

Sample Name: CCB
Sample ID:
Origin: 12_22_2022.cal
Status: Completed
Chk. Result:

| Type | Anal. | Manual Dilution | Result |
|---|---|---|---|
| Unknown | NPOC | 1.000 | NPOC:0.08332mg/L |

1. Det

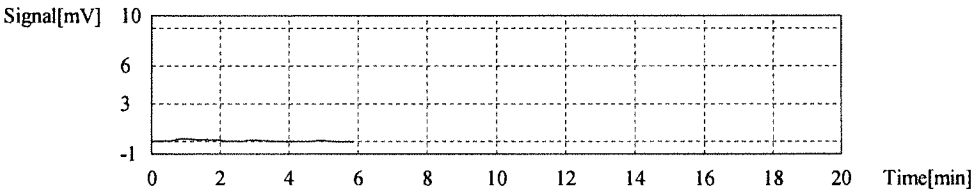
Anal.: NPOC

| No. | Area | Conc. | Inj. Vol. | Aut. Dil. | Ex. | Cal. Curve | Date / Time |
|---|---|---|---|---|---|---|---|
| 1 | 0.7189 | 0.2139mg/L | 50uL | 1.000 | | 12_22_2022.2022_12_22_13_06_45.cal | 2/20/2023 1:09:28 PM |
| 2 | 0.1212 | 0.03606mg/L | 50uL | 1.000 | | 12_22_2022.2022_12_22_13_06_45.cal | 2/20/2023 1:11:37 PM |
| 3 | 0.000 | 0.000mg/L | 50uL | 1.000 | | 12_22_2022.2022_12_22_13_06_45.cal | 2/20/2023 1:13:45 PM |

# TOC-Control L Report

2023_02_20_001.tlx

Mean Area 0.2800
Mean Conc. 0.08332mg/L




**Sample**

Sample Name: MBLK-02142023
Sample ID:
Origin: 12_22_2022.cal
Status Completed
Chk. Result

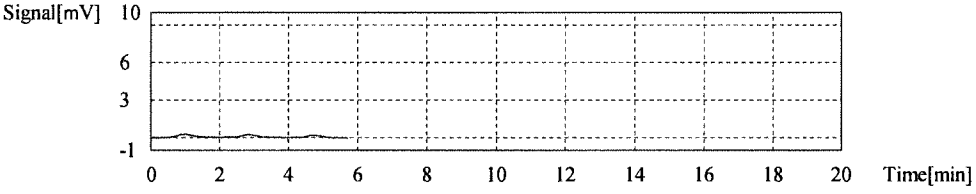
| Type | Anal. | Manual Dilution | Result |
|---|---|---|---|
| Unknown | NPOC | 1.000 | NPOC:0.1648mg/L |

1. Det

Anal.: NPOC

| No. | Area | Conc. | Inj. Vol | Auto Dil. | Ex. | Cal. Curve | Date / Time |
|---|---|---|---|---|---|---|---|
| 1 | 0.6238 | 0.1856mg/L | 50uL | 1.000 | | 12_22_2022.2022_12_22_13_06_45.cal | 2/20/2023 1:22:25 PM |
| 2 | 0.5583 | 0.1661mg/L | 50uL | 1.000 | | 12_22_2022.2022_12_22_13_06_45.cal | 2/20/2023 1:24:33 PM |
| 3 | 0.4791 | 0.1426mg/L | 50uL | 1.000 | | 12_22_2022.2022_12_22_13_06_45.cal | 2/20/2023 1:26:41 PM |

Mean Area 0.5537
Mean Conc. 0.1648mg/L




**Sample**

Sample Name: LCS-02142023
Sample ID: 3100606203
Origin: 12_22_2022.cal
Status Completed
Chk. Result

| Type | Anal. | Manual Dilution | Result |
|---|---|---|---|
| Unknown | NPOC | 1.000 | NPOC:11.42mg/L |

1. Det

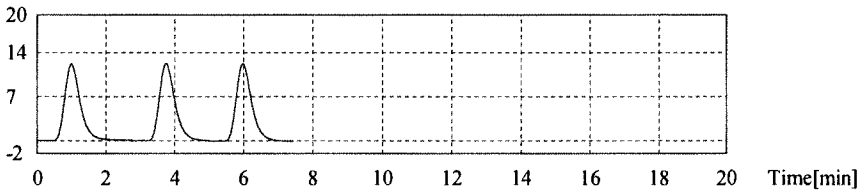
Anal.: NPOC

# TOC-Control L Report

2023_02_20_001.tlx

| No. | Area | Conc. | Inj. Vol | Aut. Dil. | Ex. | Cal. Curve | Date / Time |
|---|---|---|---|---|---|---|---|
| 1 | 38.15 | 11.35mg/L | 50uL | 1.000 | | 12_22_2022.2022_12_22_13_06_45.cal | 2/20/2023 1:36:12 PM |
| 2 | 38.53 | 11.46mg/L | 50uL | 1.000 | | 12_22_2022.2022_12_22_13_06_45.cal | 2/20/2023 1:38:41 PM |
| 3 | 38.41 | 11.43mg/L | 50uL | 1.000 | | 12_22_2022.2022_12_22_13_06_45.cal | 2/20/2023 1:41:22 PM |

Mean Area 38.36
Mean Conc. 11.42mg/L




**Sample**

Sample Name: LCSD-02142023
Sample ID:
Origin: 12_22_2022.cal
Status Completed
Chk. Result

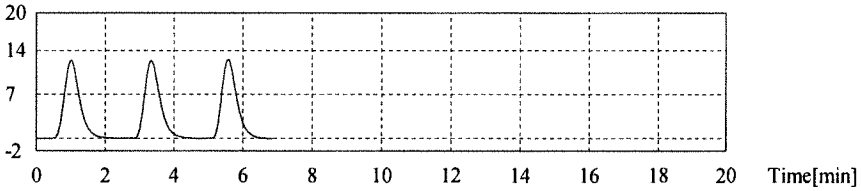
| Type | Anal. | Manual Dilution | Result |
|---|---|---|---|
| Unknown | NPOC | 1.000 | NPOC:11.48mg/L |

1. Det

Anal.: NPOC

| No. | Area | Conc. | Inj. Vol | Aut. Dil. | Ex. | Cal. Curve | Date / Time |
|---|---|---|---|---|---|---|---|
| 1 | 38.47 | 11.45mg/L | 50uL | 1.000 | | 12_22_2022.2022_12_22_13_06_45.cal | 2/20/2023 1:50:29 PM |
| 2 | 38.85 | 11.56mg/L | 50uL | 1.000 | | 12_22_2022.2022_12_22_13_06_45.cal | 2/20/2023 1:52:59 PM |
| 3 | 38.41 | 11.43mg/L | 50uL | 1.000 | | 12_22_2022.2022_12_22_13_06_45.cal | 2/20/2023 1:55:28 PM |

Mean Area 38.58
Mean Conc. 11.48mg/L




**Sample**

Sample Name: HS23020265-01
Sample ID:
Origin: 12_22_2022.cal
Status Completed
Chk. Result

| Type | Anal. | Manual Dilution | Result |
|---|---|---|---|
| Unknown | NPOC | 1.000 | NPOC:1.608mg/L |

1. Det

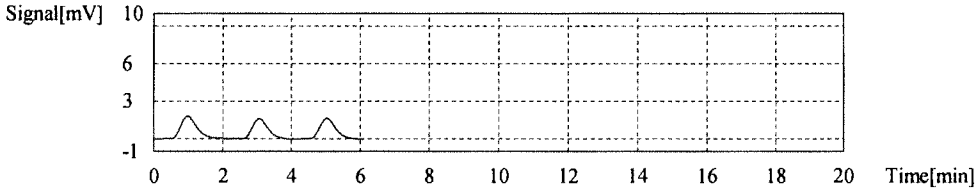
# TOC-Control L Report

2023_02_20_001.tlx

Anal.: NPOC

| No. | Area | Conc. | Inj. Vol | Aut. Dil. | Ex. | Cal. Curve | Date / Time |
|---|---|---|---|---|---|---|---|
| 1 | 5.815 | 1.730mg/L | 50uL | 1.000 | | 12_22_2022.2022_12_22_13_06_45.cal | 2/20/2023 2:45:20 PM |
| 2 | 5.281 | 1.571mg/L | 50uL | 1.000 | | 12_22_2022.2022_12_22_13_06_45.cal | 2/20/2023 2:47:32 PM |
| 3 | 5.117 | 1.523mg/L | 50uL | 1.000 | | 12_22_2022.2022_12_22_13_06_45.cal | 2/20/2023 2:49:50 PM |

Mean Area 5.404
Mean Conc. 1.608mg/L




**Sample**

Sample Name: HS23020265-02
Sample ID:
Origin: 12_22_2022.cal
Status Completed
Chk. Result

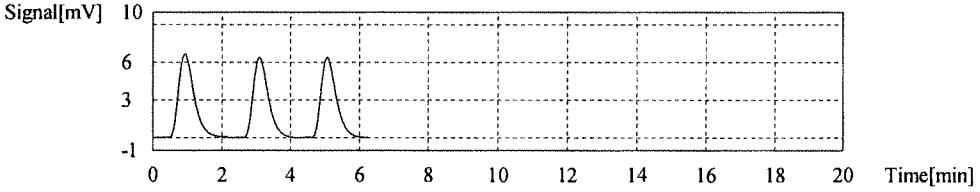
| Type | Anal. | Manual Dilution | Result |
|---|---|---|---|
| Unknown | NPOC | 1.000 | NPOC:5.964mg/L |

1. Det

Anal.: NPOC

| No. | Area | Conc. | Inj. Vol | Aut. Dil. | Ex. | Cal. Curve | Date / Time |
|---|---|---|---|---|---|---|---|
| 1 | 20.78 | 6.183mg/L | 50uL | 1.000 | | 12_22_2022.2022_12_22_13_06_45.cal | 2/20/2023 2:58:46 PM |
| 2 | 19.81 | 5.895mg/L | 50uL | 1.000 | | 12_22_2022.2022_12_22_13_06_45.cal | 2/20/2023 3:01:00 PM |
| 3 | 19.54 | 5.814mg/L | 50uL | 1.000 | | 12_22_2022.2022_12_22_13_06_45.cal | 2/20/2023 3:03:20 PM |

Mean Area 20.04
Mean Conc. 5.964mg/L




**Sample**

Sample Name: HS23020265-04
Sample ID:
Origin: 12_22_2022.cal
Status Completed
Chk. Result

| Type | Anal. | Manual Dilution | Result |
|---|---|---|---|
| Unknown | NPOC | 1.000 | NPOC:10.31mg/L |

# TOC-Control L Report

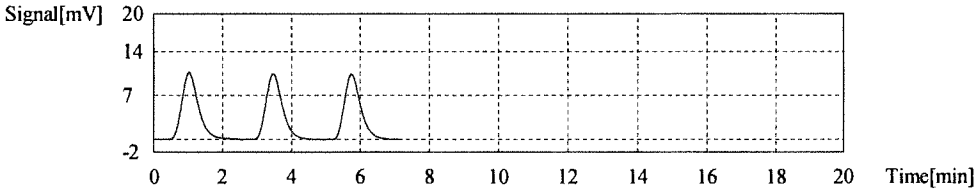
2023_02_20_001.tlx

1. Det

Anal.: NPOC

| No. | Area | Conc. | Inj. Vol. | Aut. Dil. | Ex. | Cal. Curve | Date / Time |
|---|---|---|---|---|---|---|---|
| 1 | 35.08 | 10.44mg/L | 50uL | 1.000 | | 12_22_2022.2022_12_22_13_06_45.cal | 2/20/2023 3:12:32 PM |
| 2 | 34.55 | 10.28mg/L | 50uL | 1.000 | | 12_22_2022.2022_12_22_13_06_45.cal | 2/20/2023 3:15:05 PM |
| 3 | 34.33 | 10.21mg/L | 50uL | 1.000 | | 12_22_2022.2022_12_22_13_06_45.cal | 2/20/2023 3:17:41 PM |

Mean Area 34.65
Mean Conc. 10.31mg/L




**Sample**

Sample Name: HS23020265-04MS
Sample ID:
Origin: 12_22_2022.cal
Status Completed
Chk. Result

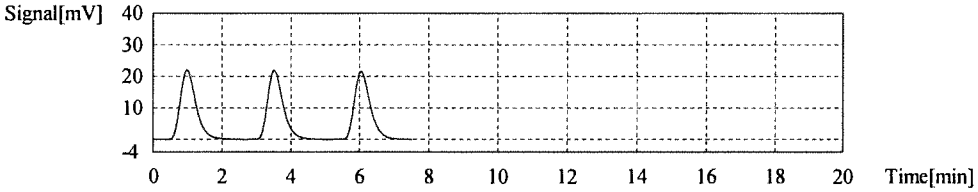
| Type | Anal. | Manual Dilution | Result |
|---|---|---|---|
| Unknown | NPOC | 1.000 | NPOC:20.74mg/L |

1. Det

Anal.: NPOC

| No. | Area | Conc. | Inj. Vol. | Aut. Dil. | Ex. | Cal. Curve | Date / Time |
|---|---|---|---|---|---|---|---|
| 1 | 70.00 | 20.83mg/L | 50uL | 1.000 | | 12_22_2022.2022_12_22_13_06_45.cal | 2/20/2023 3:26:58 PM |
| 2 | 68.91 | 20.50mg/L | 50uL | 1.000 | | 12_22_2022.2022_12_22_13_06_45.cal | 2/20/2023 3:29:45 PM |
| 3 | 70.20 | 20.89mg/L | 50uL | 1.000 | | 12_22_2022.2022_12_22_13_06_45.cal | 2/20/2023 3:32:27 PM |

Mean Area 69.70
Mean Conc. 20.74mg/L




**Sample**

Sample Name: CCV
Sample ID: 321102607
Origin: 12_22_2022.cal
Status Completed
Chk. Result

# TOC-Control L Report

2023_02_20_001.tlx

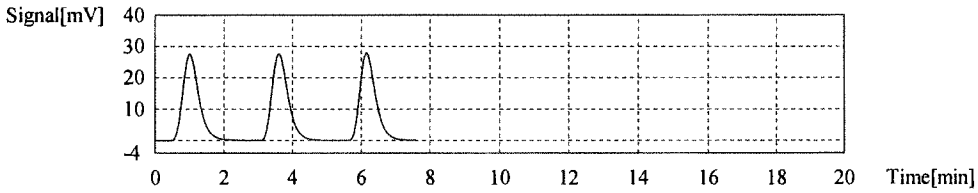
| Type | Anal. | Manual Dilution | Result |
|---|---|---|---|
| Unknown | NPOC | 1.000 | NPOC:26.88mg/L |

1. Det

Anal.: NPOC

| No. | Area | Conc. | Inj. Vol. | Aut. Dil. | Ex. | Cal. Curve | Date / Time |
|---|---|---|---|---|---|---|---|
| 1 | 90.66 | 26.98mg/L | 50uL | 1.000 | | 12_22_2022.2022_12_22_13_06_45.cal | 2/20/2023 3:41:59 PM |
| 2 | 91.27 | 27.16mg/L | 50uL | 1.000 | | 12_22_2022.2022_12_22_13_06_45.cal | 2/20/2023 3:44:48 PM |
| 3 | 89.09 | 26.51mg/L | 50uL | 1.000 | | 12_22_2022.2022_12_22_13_06_45.cal | 2/20/2023 3:47:29 PM |

Mean Area 90.34
Mean Conc. 26.88mg/L




**Sample**

Sample Name: CCB
Sample ID:
Origin: 12_22_2022.cal
Status Completed
Chk. Result

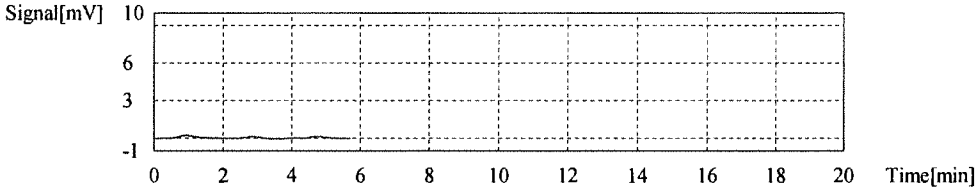
| Type | Anal. | Manual Dilution | Result |
|---|---|---|---|
| Unknown | NPOC | 1.000 | NPOC:0.1299mg/L |

1. Det

Anal.: NPOC

| No. | Area | Conc. | Inj. Vol. | Aut. Dil. | Ex. | Cal. Curve | Date / Time |
|---|---|---|---|---|---|---|---|
| 1 | 0.5597 | 0.1665mg/L | 50uL | 1.000 | | 12_22_2022.2022_12_22_13_06_45.cal | 2/20/2023 3:56:09 PM |
| 2 | 0.3982 | 0.1185mg/L | 50uL | 1.000 | | 12_22_2022.2022_12_22_13_06_45.cal | 2/20/2023 3:58:18 PM |
| 3 | 0.3519 | 0.1047mg/L | 50uL | 1.000 | | 12_22_2022.2022_12_22_13_06_45.cal | 2/20/2023 4:00:27 PM |

Mean Area 0.4366
Mean Conc. 0.1299mg/L




**Sample**

# TOC-Control L Report

2023_02_20_001.tlx

Sample Name: CCV
Sample ID: 321102607
Origin: 12_22_2022.cal
Status Completed
Chk. Result

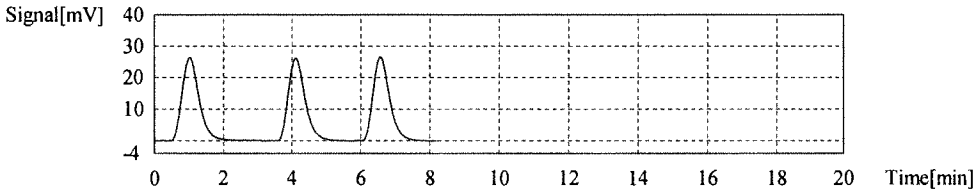
| Type | Anal. | Manual Dilution | Result |
|---|---|---|---|
| Unknown | NPOC | 1.000 | NPOC:26.74mg/L |

1. Det

Anal.: NPOC

| No. | Area | Conc. | Inj. Vol. | Aut. Dil. | Ex. | Cal. Curve | Date / Time |
|---|---|---|---|---|---|---|---|
| 1 | 90.73 | 27.00mg/L | 50uL | 1.000 | | 12_22_2022.2022_12_22_13_06_45.cal | 2/20/2023 5:02:18 PM |
| 2 | 89.67 | 26.68mg/L | 50uL | 1.000 | | 12_22_2022.2022_12_22_13_06_45.cal | 2/20/2023 5:05:02 PM |
| 3 | 89.19 | 26.54mg/L | 50uL | 1.000 | | 12_22_2022.2022_12_22_13_06_45.cal | 2/20/2023 5:07:51 PM |

Mean Area 89.86
Mean Conc. 26.74mg/L




**Sample**

Sample Name: CCB
Sample ID:
Origin: 12_22_2022.cal
Status Completed
Chk. Result

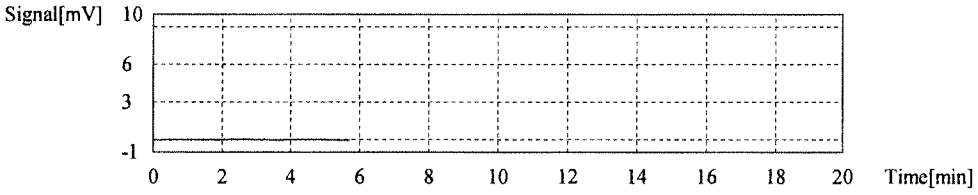
| Type | Anal. | Manual Dilution | Result |
|---|---|---|---|
| Unknown | NPOC | 1.000 | NPOC:0.00322mg/L |

1. Det

Anal.: NPOC

| No. | Area | Conc. | Inj. Vol. | Aut. Dil. | Ex. | Cal. Curve | Date / Time |
|---|---|---|---|---|---|---|---|
| 1 | 0.03250 | 0.00967mg/L | 50uL | 1.000 | | 12_22_2022.2022_12_22_13_06_45.cal | 2/20/2023 5:16:31 PM |
| 2 | 0.000 | 0.000mg/L | 50uL | 1.000 | | 12_22_2022.2022_12_22_13_06_45.cal | 2/20/2023 5:18:40 PM |
| 3 | 0.000 | 0.000mg/L | 50uL | 1.000 | | 12_22_2022.2022_12_22_13_06_45.cal | 2/20/2023 5:20:48 PM |

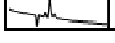
Mean Area 0.01083
Mean Conc. 0.00322mg/L



# HS23020265 9056_W IC

ALS WO# HS23020265

Sequence: 020623
Last Update Operator: alshs.nouser

| CD | Name | Comment | Type | Position | Dilution | Level | Instrument Method |
|---|---|---|---|---|---|---|---|
|  | STD1 | | Calibratic | BA1 | 1.00 | 1 | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | STD2 | | Calibratic | BA2 | 1.00 | 2 | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | STD3 | | Calibratic | BA3 | 1.00 | 3 | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | STD4 | | Calibratic | BA4 | 1.00 | 4 | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | STD5 | | Calibratic | BA5 | 1.00 | 5 | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | STD6 | | Calibratic | BA6 | 1.00 | 6 | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | ICV | | Unknown | BA7 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | ICB | | Unknown | BA8 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | CCV1 | | Unknown | R3 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | CCB | | Unknown | R7 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | MBLK | | Unknown | R5 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | LCS | | Unknown | R1 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | HS23020265-01 | 9056/W SH | Unknown | BC1 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | HS23020265-02 | 9056/W SH | Unknown | BC2 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | HS23020265-04 | 9056/W SH | Unknown | BC3 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | HS23020265-04MS | 9056/W SH | Unknown | BC4 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | HS23020265-04MSD | 9056/W SH | Unknown | BC5 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | CCV | | Unknown | R1 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | CCB | | Unknown | R4 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |

Sequence: 020623
Last Update Operator: alshs.nouser

| Processing Method | CD | Name | me | Status | Inject Time |
|---|---|---|---|---|---|
| Anions Processing Method ISO |  | STD1 | 5.0 | Finished | 1/23/2023 2:36:57 PM -06:00 |
| Anions Processing Method ISO |  | STD2 | 5.0 | Finished | 1/23/2023 2:42:45 PM -06:00 |
| Anions Processing Method ISO |  | STD3 | 5.0 | Finished | 1/23/2023 2:48:34 PM -06:00 |
| Anions Processing Method ISO |  | STD4 | 5.0 | Finished | 1/23/2023 2:54:22 PM -06:00 |
| Anions Processing Method ISO |  | STD5 | 5.0 | Finished | 1/23/2023 3:00:10 PM -06:00 |
| Anions Processing Method ISO |  | STD6 | 5.0 | Finished | 1/23/2023 3:05:59 PM -06:00 |
| Anions Processing Method ISO |  | ICV | 5.0 | Finished | 1/23/2023 3:11:47 PM -06:00 |
| Anions Processing Method ISO |  | ICB | 5.0 | Finished | 1/23/2023 3:17:35 PM -06:00 |
| Anions Processing Method ISO |  | CCV1 | 5.0 | Finished | 2/7/2023 3:45:52 PM -06:00 |
| Anions Processing Method ISO |  | CCB | 5.0 | Finished | 2/7/2023 3:51:38 PM -06:00 |
| Anions Processing Method ISO |  | MBLK | 5.0 | Finished | 2/7/2023 4:08:54 PM -06:00 |
| Anions Processing Method ISO |  | LCS | 5.0 | Finished | 2/7/2023 4:20:25 PM -06:00 |
| Anions Processing Method ISO |  | HS23020265-01 | 5.0 | Finished | 2/7/2023 4:26:11 PM -06:00 |
| Anions Processing Method ISO |  | HS23020265-02 | 5.0 | Finished | 2/7/2023 4:31:56 PM -06:00 |
| Anions Processing Method ISO |  | HS23020265-04 | 5.0 | Finished | 2/7/2023 4:37:42 PM -06:00 |
| Anions Processing Method ISO |  | HS23020265-04MS | 5.0 | Finished | 2/7/2023 4:43:27 PM -06:00 |
| Anions Processing Method ISO |  | HS23020265-04MSD | 5.0 | Finished | 2/7/2023 4:49:13 PM -06:00 |
| Anions Processing Method ISO |  | CCV | 5.0 | Finished | 2/7/2023 5:12:14 PM -06:00 |
| Anions Processing Method ISO |  | CCB | 5.0 | Finished | 2/7/2023 5:17:59 PM -06:00 |

Sequence: 012623
Injection #6: STD6

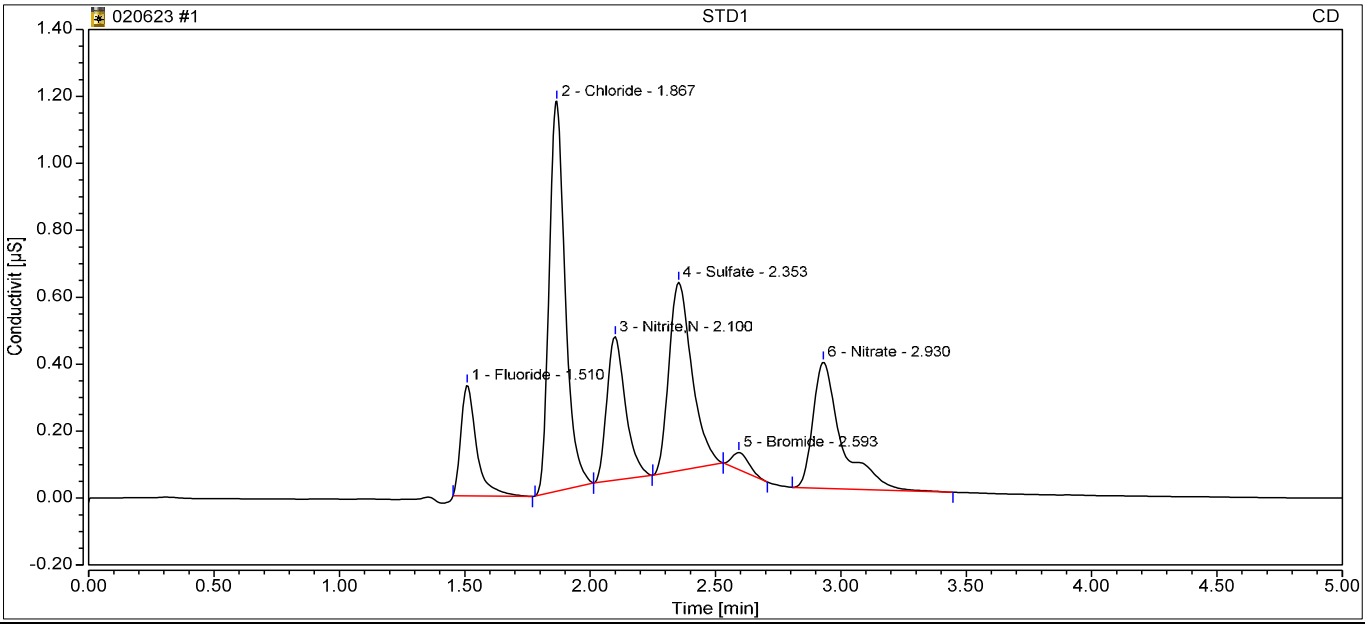
Calibration

| Peak No. | Peak Name | Cal.Type | Eval.Type | Number of Points | Rel.Std.Dev. % | Coeff.of Determination | C0 (Offset) | C1 (Slope) | C2 (Curve) |
|---|---|---|---|---|---|---|---|---|---|
| ***1*** | ***Fluoride*** | ***Lin, WithOffset, 1/A*** | ***Area*** | ***6*** | ***18.2600*** | ***0.99823*** | ***0.0003*** | ***0.2594*** | ***0.0000*** |
| 2 | Chloride | Lin, WithOffset, 1/A | Area | 6 | 3.9326 | 0.99992 | -0.0034 | 0.1716 | 0.0000 |
| 3 | Nitrite,N | Quad, WithOffset, 1/A | Area | 6 | 6.5665 | 0.99976 | 0.0001 | 0.3625 | -0.0059 |
| 4 | Sulfate | Lin, WithOffset, 1/A | Area | 6 | 7.0089 | 0.99974 | 0.0018 | 0.1125 | 0.0000 |
| 5 | Bromide | Lin, WithOffset, 1/A | Area | 6 | 21.3247 | 0.99813 | -0.0031 | 0.0579 | 0.0000 |
| 6 | Nitrate | Lin, WithOffset, 1/A | Area | 6 | 8.6115 | 0.99956 | 0.0097 | 0.3471 | 0.0000 |
| 7 | Chlorate | Quad, WithOffset, 1/A | Area | 5 | 14.8871 | 0.99687 | -0.0004 | 0.0060 | -0.0001 |
| 8 | Phosphate | Lin, WithOffset, 1/A | Area | 2 | n.a. | 1.00000 | -0.4901 | 0.1278 | 0.0000 |
| **Maximum** | | | | | **21.3247** | 1.00000 | | | |
| **Minimum** | | | | | 3.9326 | **0.99687** | | | |

*1 STD1*

| | | | |
|---|---|---|---|
| *Sample Name:* | **STD1** | *Injection Volume:* | **5.00** |
| *Vial Number:* | **BA1** | *Channel:* | **CD** |
| *Sample Type:* | **Calibration Standard** | *Wavelength:* | **n.a.** |
| *Control Program:* | **Anions Program ISO37mM 150mm short 0.4 Constant current** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **Anions Processing Method ISO** | *Dilution Factor:* | **1.0000** |
| *Recording Time:* | **01/23/2023 14:36** | *Sample Weight:* | **1.0000** |

Run Time:

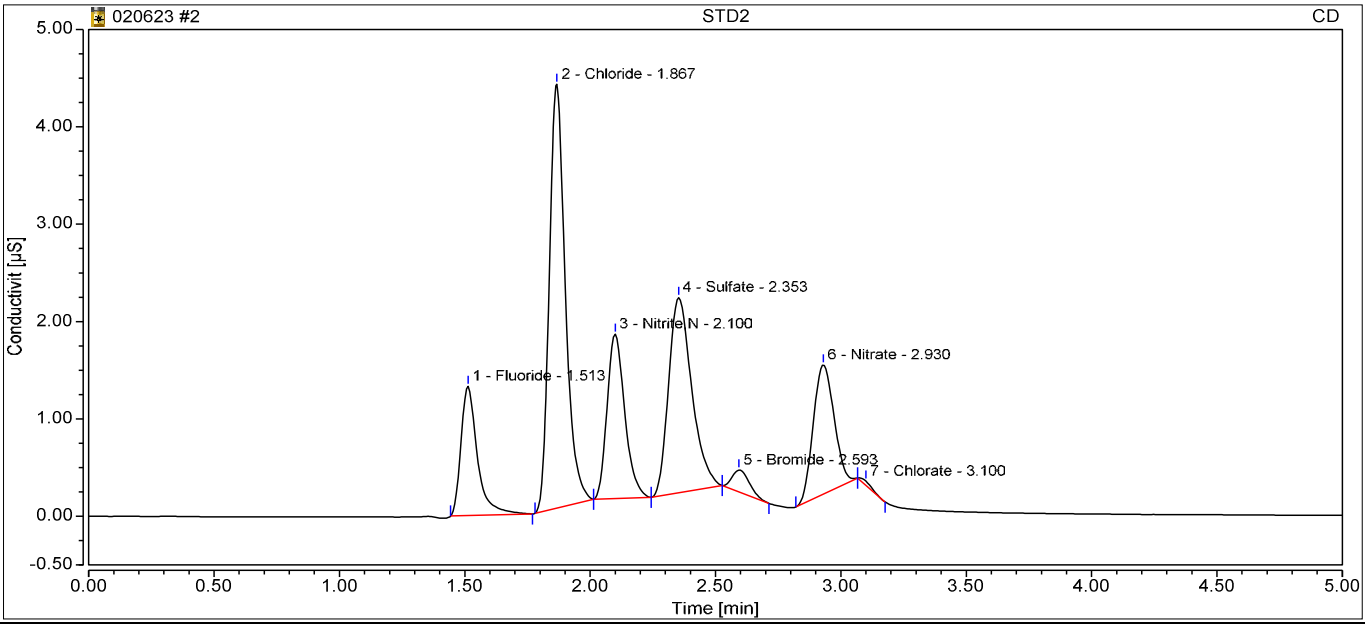



**Integration Results**

| No. | Retention min | Peak Name | Peak Type | Area µS*min | Amount ppm | Concentration ppm | Dilution |
|---|---|---|---|---|---|---|---|
| 1 | 1.51 | Fluoride | BMB | 0.024 | 0.0916 | 0.0916 | 1.0000 |
| 2 | 1.87 | Chloride | BMB | 0.087 | 0.5248 | 0.5248 | 1.0000 |
| 3 | 2.10 | Nitrite,N | BMB | 0.037 | 0.1020 | 0.1020 | 1.0000 |
| 4 | 2.35 | Sulfate | BMB | 0.060 | 0.5165 | 0.5165 | 1.0000 |
| 5 | 2.59 | Bromide | BMB | 0.004 | 0.1232 | 0.1232 | 1.0000 |
| 6 | 2.93 | Nitrate | BMB | 0.050 | 0.1161 | 0.1161 | 1.0000 |
| n.a. | n.a. | Chlorate | n.a. | n.a. | n.a. | n.a. | 1.0000 |
| n.a. | n.a. | Phosphate | n.a. | n.a. | n.a. | n.a. | 1.0000 |
| **Total:** | | | **0.000** | **0.262** | | **1.47** | |

| | | | |
|---|---|---|---|
| *2 STD2* | | | |
| *Sample Name:* | **STD2** | *Injection Volume:* | **5.00** |
| *Vial Number:* | **BA2** | *Channel:* | **CD** |
| *Sample Type:* | **Calibration Standard** | *Wavelength:* | **n.a.** |
| *Control Program:* | **Anions Program ISO37mM 150mm short 0.4 Constant current** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **Anions Processing Method ISO** | *Dilution Factor:* | **1.0000** |
| *Recording Time:* | **01/23/2023 14:42** | *Sample Weight:* | **1.0000** |

Run Time:

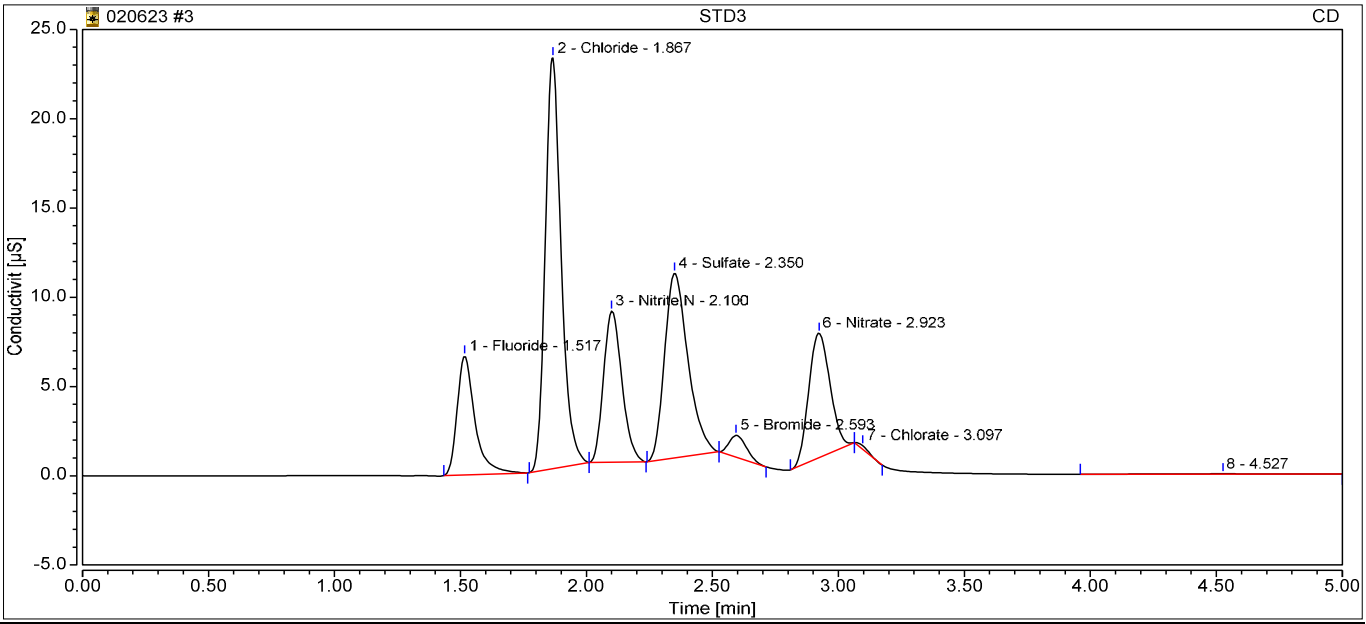



**Integration Results**

| No. | Retention min | Peak Name | Peak Type | Area µS*min | Amount ppm | Concentration ppm | Dilution |
|---|---|---|---|---|---|---|---|
| 1 | 1.51 | Fluoride | BMB | 0.101 | 0.3891 | 0.3891 | 1.0000 |
| 2 | 1.87 | Chloride | BMB | 0.323 | 1.9022 | 1.9022 | 1.0000 |
| 3 | 2.10 | Nitrite,N | BMB | 0.138 | 0.3825 | 0.3825 | 1.0000 |
| 4 | 2.35 | Sulfate | BMB | 0.215 | 1.8922 | 1.8922 | 1.0000 |
| 5 | 2.59 | Bromide | BMB | 0.018 | 0.3682 | 0.3682 | 1.0000 |
| 6 | 2.93 | Nitrate | BMB | 0.128 | 0.3409 | 0.3409 | 1.0000 |
| 7 | 3.10 | Chlorate | BMB | 0.002 | 0.4193 | 0.4193 | 1.0000 |
| n.a. | n.a. | Phosphate | n.a. | n.a. | n.a. | n.a. | 1.0000 |
| **Total:** | | | **0.000** | **0.925** | | **5.69** | |

| | | | |
|---|---|---|---|
| *3 STD3* | | | |
| *Sample Name:* | **STD3** | *Injection Volume:* | **5.00** |
| *Vial Number:* | **BA3** | *Channel:* | **CD** |
| *Sample Type:* | **Calibration Standard** | *Wavelength:* | **n.a.** |
| *Control Program:* | **Anions Program ISO37mM 150mm short 0.4 Constant current** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **Anions Processing Method ISO** | *Dilution Factor:* | **1.0000** |
| *Recording Time:* | **01/23/2023 14:48** | *Sample Weight:* | **1.0000** |

Run Time:



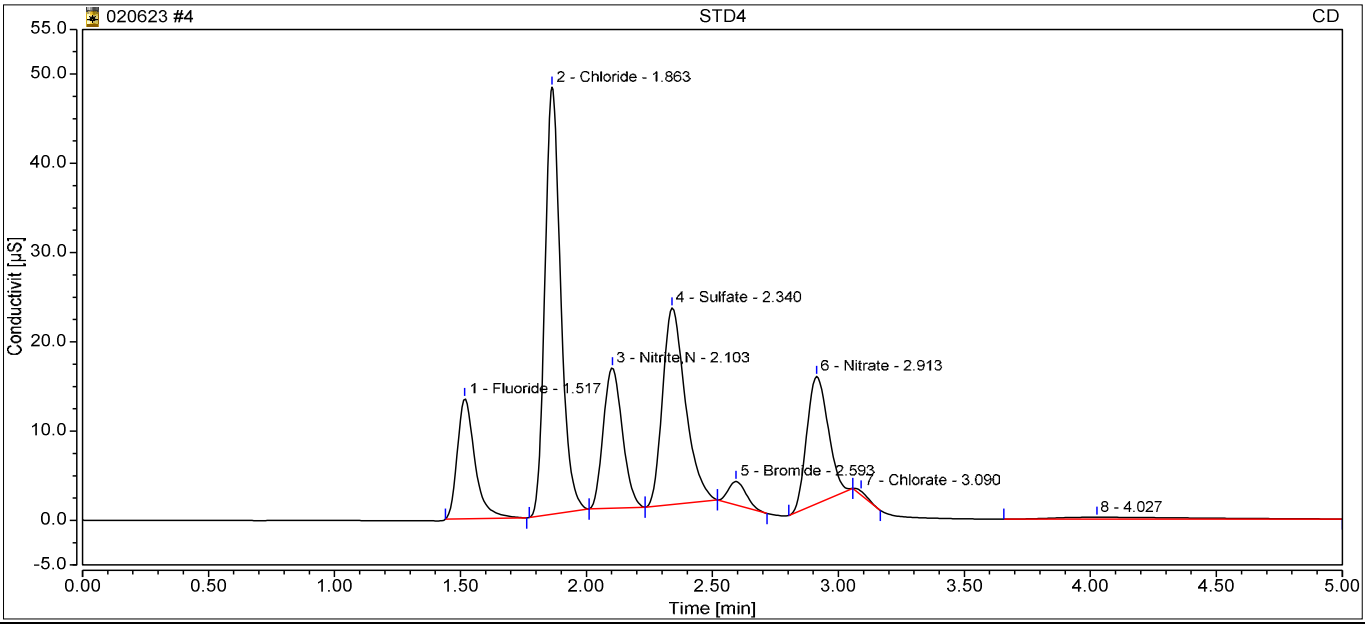

**Integration Results**

| No. | Retention min | Peak Name | Peak Type | Area µS*min | Amount ppm | Concentration ppm | Dilution |
|---|---|---|---|---|---|---|---|
| 1 | 1.52 | Fluoride | BMB | 0.545 | 2.1003 | 2.1003 | 1.0000 |
| 2 | 1.87 | Chloride | BMB | 1.685 | 9.8413 | 9.8413 | 1.0000 |
| 3 | 2.10 | Nitrite,N | BMB | 0.715 | 2.0394 | 2.0394 | 1.0000 |
| 4 | 2.35 | Sulfate | BMB | 1.114 | 9.8924 | 9.8924 | 1.0000 |
| 5 | 2.59 | Bromide | BMB | 0.099 | 1.7671 | 1.7671 | 1.0000 |
| 6 | 2.92 | Nitrate | BMB | 0.683 | 1.9402 | 1.9402 | 1.0000 |
| 7 | 3.10 | Chlorate | BMB | 0.010 | 1.7695 | 1.7695 | 1.0000 |
| n.a. | n.a. | Phosphate | n.a. | n.a. | n.a. | n.a. | 1.0000 |
| **Total:** | | | **0.000** | **4.851** | | **29.35** | |

*4 STD4*

| | | | |
|---|---|---|---|
| *Sample Name:* | **STD4** | *Injection Volume:* | **5.00** |
| *Vial Number:* | **BA4** | *Channel:* | **CD** |
| *Sample Type:* | **Calibration Standard** | *Wavelength:* | **n.a.** |
| *Control Program:* | **Anions Program ISO37mM 150mm short 0.4 Constant current** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **Anions Processing Method ISO** | *Dilution Factor:* | **1.0000** |
| *Recording Time:* | **01/23/2023 14:54** | *Sample Weight:* | **1.0000** |

Run Time:

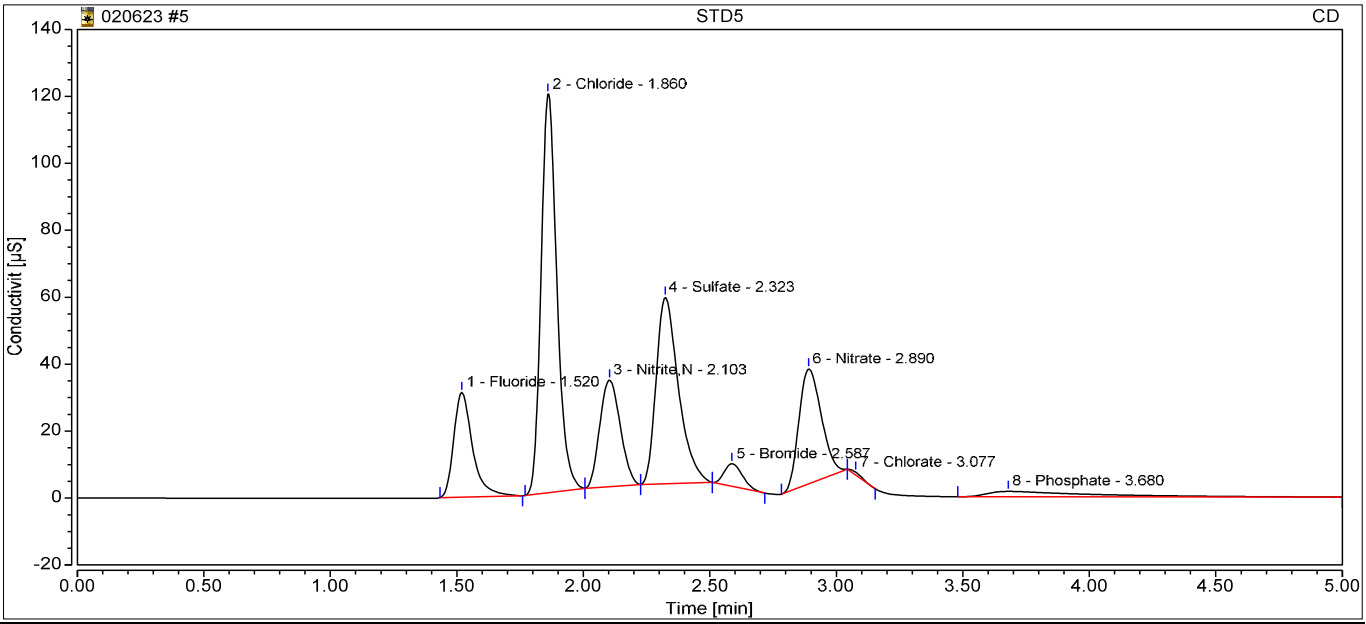



**Integration Results**

| No. | Retention min | Peak Name | Peak Type | Area µS*min | Amount ppm | Concentration ppm | Dilution |
|---|---|---|---|---|---|---|---|
| 1 | 1.52 | Fluoride | BMB | 1.096 | 4.2257 | 4.2257 | 1.0000 |
| 2 | 1.86 | Chloride | BMB | 3.473 | 20.2647 | 20.2647 | 1.0000 |
| 3 | 2.10 | Nitrite,N | BMB | 1.379 | 4.0759 | 4.0759 | 1.0000 |
| 4 | 2.34 | Sulfate | BMB | 2.316 | 20.5697 | 20.5697 | 1.0000 |
| 5 | 2.59 | Bromide | BMB | 0.216 | 3.7890 | 3.7890 | 1.0000 |
| 6 | 2.91 | Nitrate | BMB | 1.408 | 4.0269 | 4.0269 | 1.0000 |
| 7 | 3.09 | Chlorate | BMB | 0.023 | 4.3199 | 4.3199 | 1.0000 |
| n.a. | n.a. | Phosphate | n.a. | n.a. | n.a. | n.a. | 1.0000 |
| **Total:** | | | **0.000** | **9.911** | | **61.27** | |

| | | | |
|---|---|---|---|
| *5 STD5* | | | |
| *Sample Name:* | **STD5** | *Injection Volume:* | **5.00** |
| *Vial Number:* | **BA5** | *Channel:* | **CD** |
| *Sample Type:* | **Calibration Standard** | *Wavelength:* | **n.a.** |
| *Control Program:* | **Anions Program ISO37mM 150mm short 0.4 Constant current** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **Anions Processing Method ISO** | *Dilution Factor:* | **1.0000** |
| *Recording Time:* | **01/23/2023 15:00** | *Sample Weight:* | **1.0000** |

Run Time:



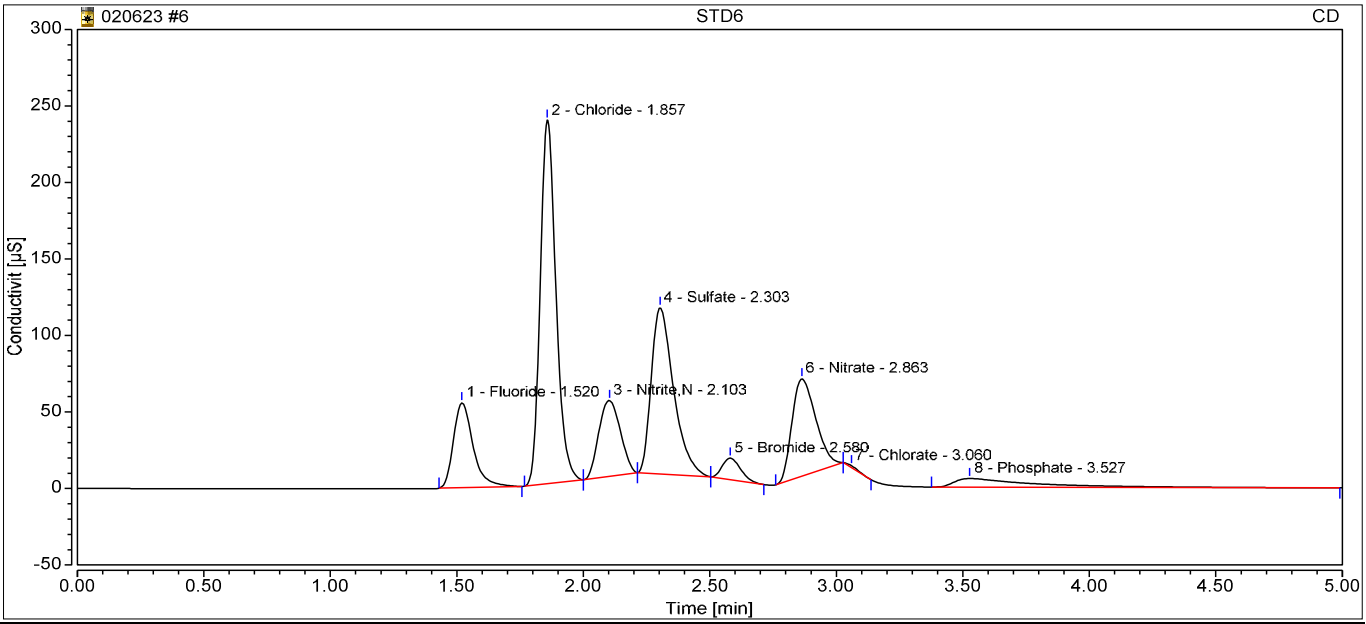

**Integration Results**

| No. | Retention min | Peak Name | Peak Type | Area µS*min | Amount ppm | Concentration ppm | Dilution |
|---|---|---|---|---|---|---|---|
| 1 | 1.52 | Fluoride | BMB | 2.698 | 10.4020 | 10.4020 | 1.0000 |
| 2 | 1.86 | Chloride | BMB | 8.612 | 50.2171 | 50.2171 | 1.0000 |
| 3 | 2.10 | Nitrite,N | BMB | 2.980 | 9.7904 | 9.7904 | 1.0000 |
| 4 | 2.32 | Sulfate | BMB | 5.704 | 50.6918 | 50.6918 | 1.0000 |
| 5 | 2.59 | Bromide | BMB | 0.569 | 9.8884 | 9.8884 | 1.0000 |
| 6 | 2.89 | Nitrate | BMB | 3.525 | 10.1264 | 10.1264 | 1.0000 |
| 7 | 3.08 | Chlorate | BMB | 0.047 | 9.8667 | 9.8667 | 1.0000 |
| 8 | 3.68 | Phosphate | BMB | 0.787 | 10.0000 | 10.0000 | 1.0000 |
| **Total:** | | | **0.000** | **24.922** | | **160.98** | |

*6 STD6*

| | | | |
|---|---|---|---|
| *Sample Name:* | **STD6** | *Injection Volume:* | **5.00** |
| *Vial Number:* | **BA6** | *Channel:* | **CD** |
| *Sample Type:* | **Calibration Standard** | *Wavelength:* | **n.a.** |
| *Control Program:* | **Anions Program ISO37mM 150mm short 0.4 Constant current** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **Anions Processing Method ISO** | *Dilution Factor:* | **1.0000** |
| *Recording Time:* | **01/23/2023 15:05** | *Sample Weight:* | **1.0000** |

Run Time:



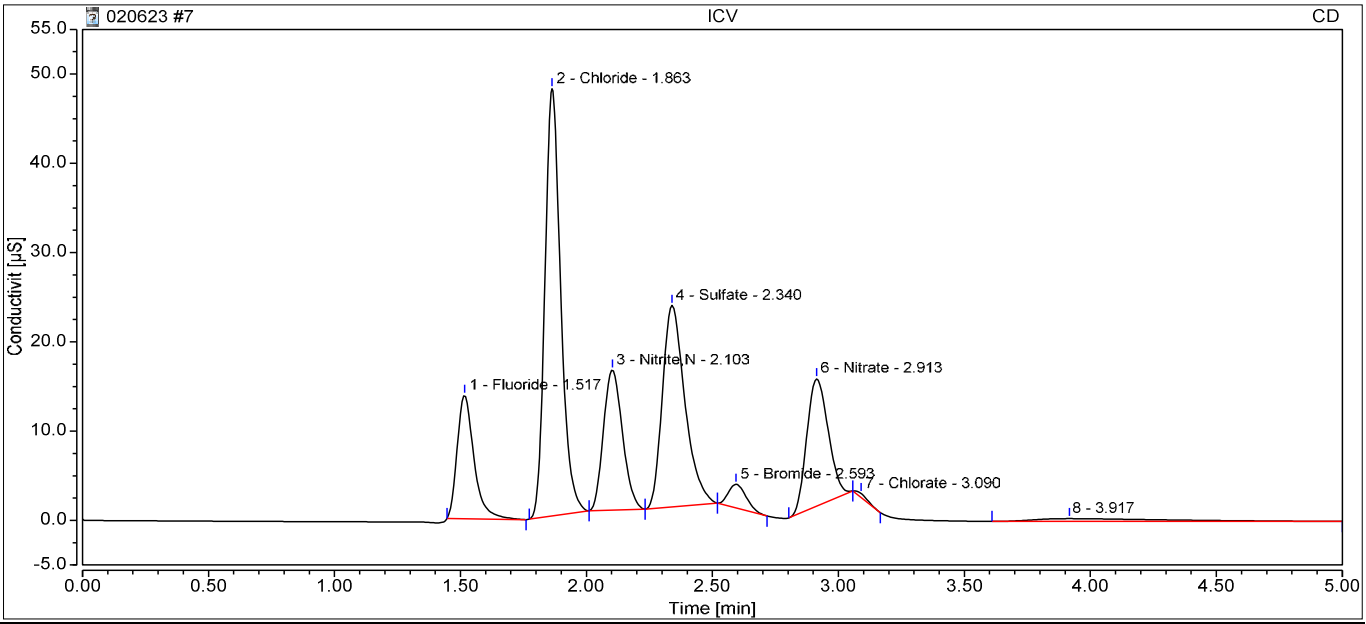

**Integration Results**

| No. | Retention min | Peak Name | Peak Type | Area µS*min | Amount ppm | Concentration ppm | Dilution |
|---|---|---|---|---|---|---|---|
| 1 | 1.52 | Fluoride | BMB | 5.004 | 19.2913 | 19.2913 | 1.0000 |
| 2 | 1.86 | Chloride | BMB | 17.110 | 99.7497 | 99.7497 | 1.0000 |
| 3 | 2.10 | Nitrite,N | BMB | 4.894 | 20.1587 | 20.1587 | 1.0000 |
| 4 | 2.30 | Sulfate | BMB | 11.131 | 98.9373 | 98.9373 | 1.0000 |
| 5 | 2.58 | Bromide | BMB | 1.187 | 20.5641 | 20.5641 | 1.0000 |
| 6 | 2.86 | Nitrate | BMB | 6.935 | 19.9496 | 19.9496 | 1.0000 |
| 7 | 3.06 | Chlorate | BMB | 0.069 | 20.0446 | 20.0446 | 1.0000 |
| 8 | 3.53 | Phosphate | BMB | 2.065 | 20.0000 | 20.0000 | 1.0000 |
| **Total:** | | | **0.000** | **48.395** | | **318.70** | |

7 ICV

| | | | |
|---|---|---|---|
| *Sample Name:* | **ICV** | *Injection Volume:* | **5.00** |
| *Vial Number:* | **BA7** | *Channel:* | **CD** |
| *Sample Type:* | **Unknown** | *Wavelength:* | **n.a.** |
| *Control Program:* | **Anions Program ISO37mM 150mm short 0.4 Constant current** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **Anions Processing Method ISO** | *Dilution Factor:* | **1.0000** |
| *Recording Time:* | **01/23/2023 15:11** | *Sample Weight:* | **1.0000** |

Run Time:



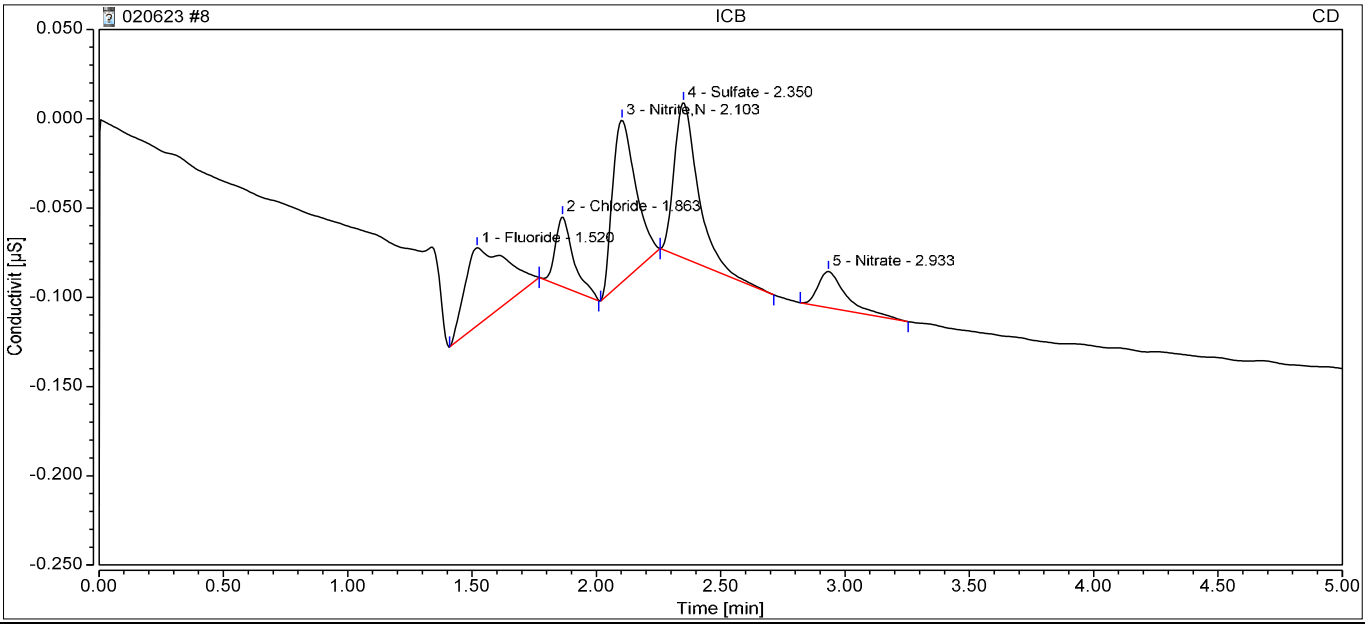

**Integration Results**

| No. | Retention min | Peak Name | Peak Type | Area µS*min | Amount ppm | Concentration ppm | Dilution |
|---|---|---|---|---|---|---|---|
| 1 | 1.52 | Fluoride | BMB | 1.076 | 4.1460 | 4.1460 | 1.0000 |
| 2 | 1.86 | Chloride | BMB | 3.476 | 20.2807 | 20.2807 | 1.0000 |
| 3 | 2.10 | Nitrite,N | BMB | 1.374 | 4.0608 | 4.0608 | 1.0000 |
| 4 | 2.34 | Sulfate | BMB | 2.342 | 20.8027 | 20.8027 | 1.0000 |
| 5 | 2.59 | Bromide | BMB | 0.218 | 3.8222 | 3.8222 | 1.0000 |
| 6 | 2.91 | Nitrate | BMB | 1.407 | 4.0267 | 4.0267 | 1.0000 |
| 7 | 3.09 | Chlorate | BMB | 0.023 | 4.2714 | 4.2714 | 1.0000 |
| n.a. | n.a. | Phosphate | n.a. | n.a. | n.a. | n.a. | 1.0000 |
| **Total:** | | | **0.000** | **9.916** | | **61.41** | |

*8 ICB*

| | | | |
|---|---|---|---|
| *Sample Name:* | **ICB** | *Injection Volume:* | **5.00** |
| *Vial Number:* | **BA8** | *Channel:* | **CD** |
| *Sample Type:* | **Unknown** | *Wavelength:* | **n.a.** |
| *Control Program:* | **Anions Program ISO37mM 150mm short 0.4 Constant current** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **Anions Processing Method ISO** | *Dilution Factor:* | **1.0000** |
| *Recording Time:* | **01/23/2023 15:17** | *Sample Weight:* | **1.0000** |

Run Time:



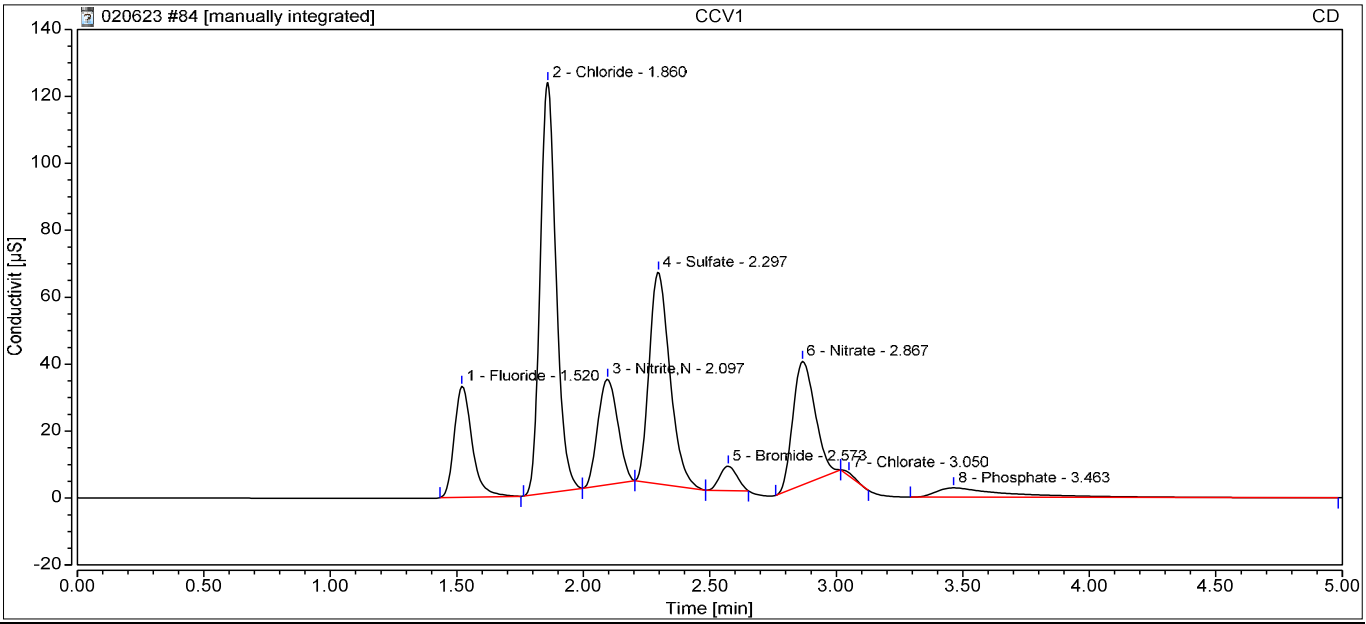

**Integration Results**

| No. | Retention min | Peak Name | Peak Type | Area µS*min | Amount ppm | Concentration ppm | Dilution |
|---|---|---|---|---|---|---|---|
| 1 | 1.52 | Fluoride | BMB | 0.008 | 0.0297 | 0.0297 | 1.0000 |
| 2 | 1.86 | Chloride | BMB | 0.003 | 0.0390 | 0.0390 | 1.0000 |
| 3 | 2.10 | Nitrite,N | BMB | 0.010 | 0.0268 | 0.0268 | 1.0000 |
| 4 | 2.35 | Sulfate | BMB | 0.010 | 0.0714 | 0.0714 | 1.0000 |
| n.a. | n.a. | Bromide | n.a. | n.a. | n.a. | n.a. | 1.0000 |
| 5 | 2.93 | Nitrate | BMB | 0.003 | n.a. | n.a. | 1.0000 |
| n.a. | n.a. | Chlorate | n.a. | n.a. | n.a. | n.a. | 1.0000 |
| n.a. | n.a. | Phosphate | n.a. | n.a. | n.a. | n.a. | 1.0000 |
| **Total:** | | | **0.000** | **0.034** | | **0.17** | |

*84 CCV1*

| | | | |
|---|---|---|---|
| *Sample Name:* | **CCV1** | *Injection Volume:* | **5.00** |
| *Vial Number:* | **R3** | *Channel:* | **CD** |
| *Sample Type:* | **Unknown** | *Wavelength:* | **n.a.** |
| *Control Program:* | **Anions Program ISO37mM 150mm short 0.4 Constant current** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **Anions Processing Method ISO** | *Dilution Factor:* | **1.0000** |
| *Recording Time:* | **02/07/2023 15:45** | *Sample Weight:* | **1.0000** |

Run Time:



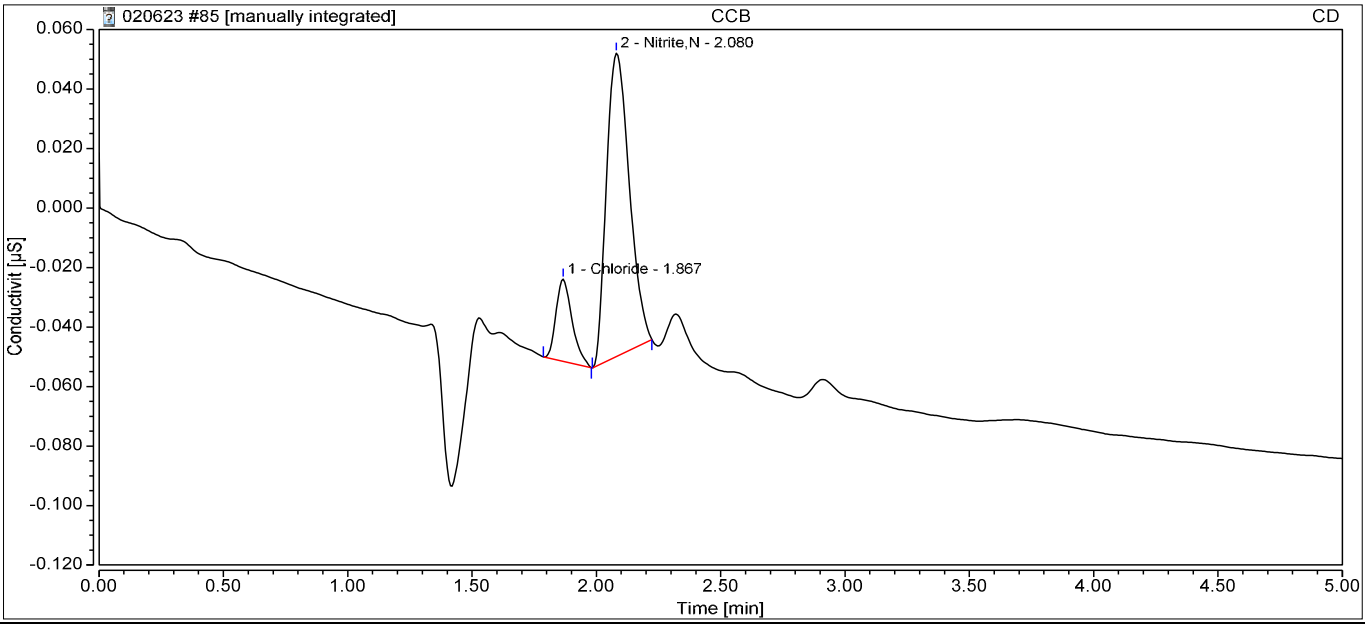

**Integration Results**

| No. | Retention min | Peak Name | Peak Type | Area µS*min | Amount ppm | Concentration ppm | Dilution |
|---|---|---|---|---|---|---|---|
| 1 | 1.52 | Fluoride | BMB | 2.710 | 10.4461 | 10.4461 | 1.0000 |
| 2 | 1.86 | Chloride | BMB | 8.941 | 52.1368 | 52.1368 | 1.0000 |
| 3 | 2.10 | Nitrite,N | BMb* | 2.869 | 9.3451 | 9.3451 | 1.0000 |
| 4 | 2.30 | Sulfate | bMb* | 5.998 | 53.3030 | 53.3030 | 1.0000 |
| 5 | 2.57 | Bromide | bMB* | 0.578 | 10.0338 | 10.0338 | 1.0000 |
| 6 | 2.87 | Nitrate | BMB | 3.757 | 10.7954 | 10.7954 | 1.0000 |
| 7 | 3.05 | Chlorate | BMB | 0.049 | 10.5560 | 10.5560 | 1.0000 |
| 8 | 3.46 | Phosphate | BMB | 0.929 | 11.1054 | 11.1054 | 1.0000 |
| **Total:** | | | **0.000** | **25.830** | | **167.72** | |

*85 CCB*

| | | | |
|---|---|---|---|
| *Sample Name:* | **CCB** | *Injection Volume:* | **5.00** |
| *Vial Number:* | **R7** | *Channel:* | **CD** |
| *Sample Type:* | **Unknown** | *Wavelength:* | **n.a.** |
| *Control Program:* | **Anions Program ISO37mM 150mm short 0.4 Constant current** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **Anions Processing Method ISO** | *Dilution Factor:* | **1.0000** |
| *Recording Time:* | **02/07/2023 15:51** | *Sample Weight:* | **1.0000** |

Run Time:



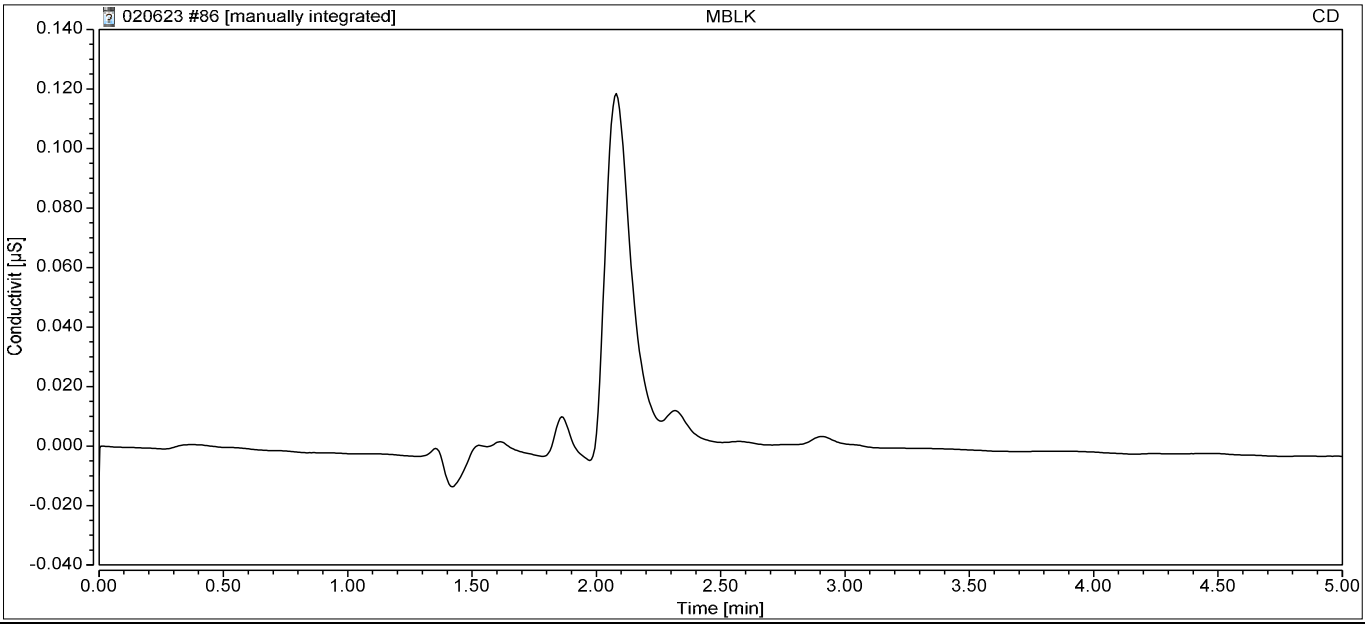

**Integration Results**

| No. | Retention min | Peak Name | Peak Type | Area µS*min | Amount ppm | Concentration ppm | Dilution |
|---|---|---|---|---|---|---|---|
| n.a. | n.a. | Fluoride | n.a. | n.a. | n.a. | n.a. | 1.0000 |
| 1 | 1.87 | Chloride | BMB | 0.002 | 0.0319 | 0.0319 | 1.0000 |
| 2 | 2.08 | Nitrite,N | BMB* | 0.011 | 0.0297 | 0.0297 | 1.0000 |
| n.a. | n.a. | Sulfate | n.a. | n.a. | n.a. | n.a. | 1.0000 |
| n.a. | n.a. | Bromide | n.a. | n.a. | n.a. | n.a. | 1.0000 |
| n.a. | n.a. | Nitrate | n.a. | n.a. | n.a. | n.a. | 1.0000 |
| n.a. | n.a. | Chlorate | n.a. | n.a. | n.a. | n.a. | 1.0000 |
| n.a. | n.a. | Phosphate | n.a. | n.a. | n.a. | n.a. | 1.0000 |
| **Total:** | | | **0.000** | **0.013** | | **0.06** | |

*86 MBLK*

| | | | |
|---|---|---|---|
| *Sample Name:* | **MBLK** | *Injection Volume:* | **5.00** |
| *Vial Number:* | **R5** | *Channel:* | **CD** |
| *Sample Type:* | **Unknown** | *Wavelength:* | **n.a.** |
| *Control Program:* | **Anions Program ISO37mM 150mm short 0.4 Constant current** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **Anions Processing Method ISO** | *Dilution Factor:* | **1.0000** |
| *Recording Time:* | **02/07/2023 16:08** | *Sample Weight:* | **1.0000** |

Run Time:

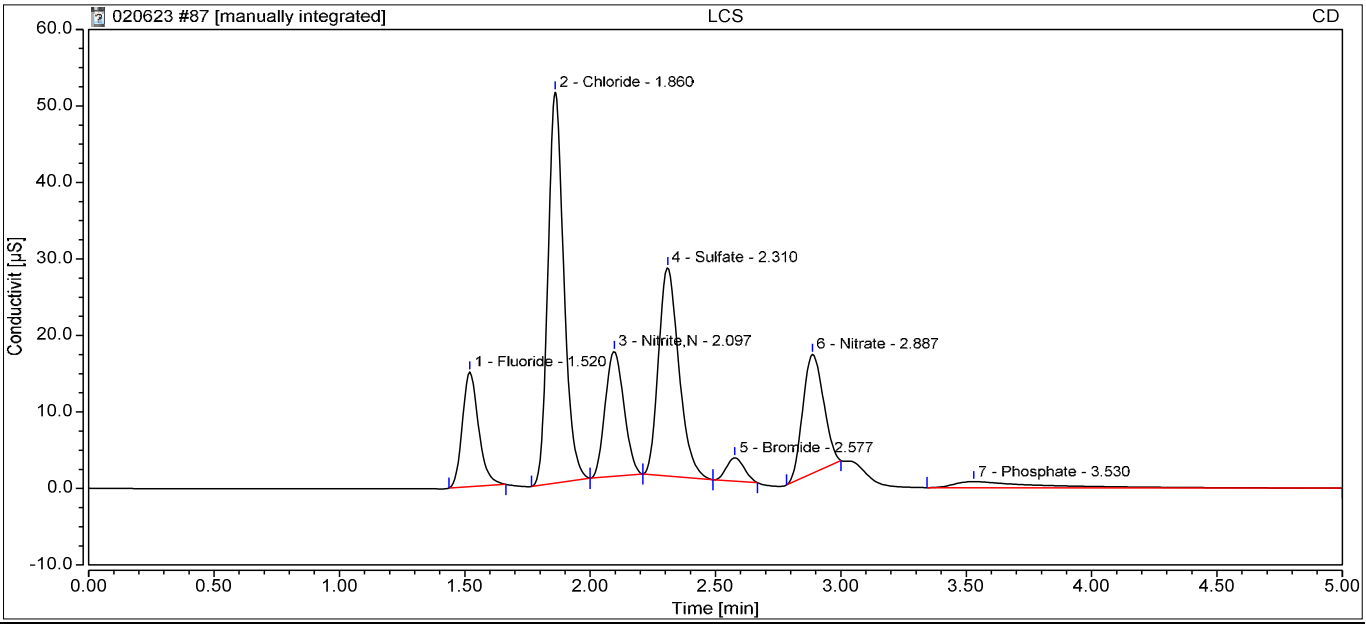



**Integration Results**

| No. | Retention min | Peak Name | Peak Type | Area µS*min | Amount ppm | Concentration ppm | Dilution |
|---|---|---|---|---|---|---|---|
| n.a. | n.a. | Fluoride | n.a. | n.a. | n.a. | n.a. | 1.0000 |
| n.a. | n.a. | Chloride | n.a. | n.a. | n.a. | n.a. | 1.0000 |
| n.a. | n.a. | Nitrite,N | n.a. | n.a. | n.a. | n.a. | 1.0000 |
| n.a. | n.a. | Sulfate | n.a. | n.a. | n.a. | n.a. | 1.0000 |
| n.a. | n.a. | Bromide | n.a. | n.a. | n.a. | n.a. | 1.0000 |
| n.a. | n.a. | Nitrate | n.a. | n.a. | n.a. | n.a. | 1.0000 |
| n.a. | n.a. | Chlorate | n.a. | n.a. | n.a. | n.a. | 1.0000 |
| n.a. | n.a. | Phosphate | n.a. | n.a. | n.a. | n.a. | 1.0000 |
| **Total:** | | | **0.000** | **0.000** | | **0.00** | |

| | | | |
|---|---|---|---|
| *87 LCS* | | | |
| *Sample Name:* | **LCS** | *Injection Volume:* | **5.00** |
| *Vial Number:* | **R1** | *Channel:* | **CD** |
| *Sample Type:* | **Unknown** | *Wavelength:* | **n.a.** |
| *Control Program:* | **Anions Program ISO37mM 150mm short 0.4 Constant current** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **Anions Processing Method ISO** | *Dilution Factor:* | **1.0000** |
| *Recording Time:* | **02/07/2023 16:20** | *Sample Weight:* | **1.0000** |

Run Time:



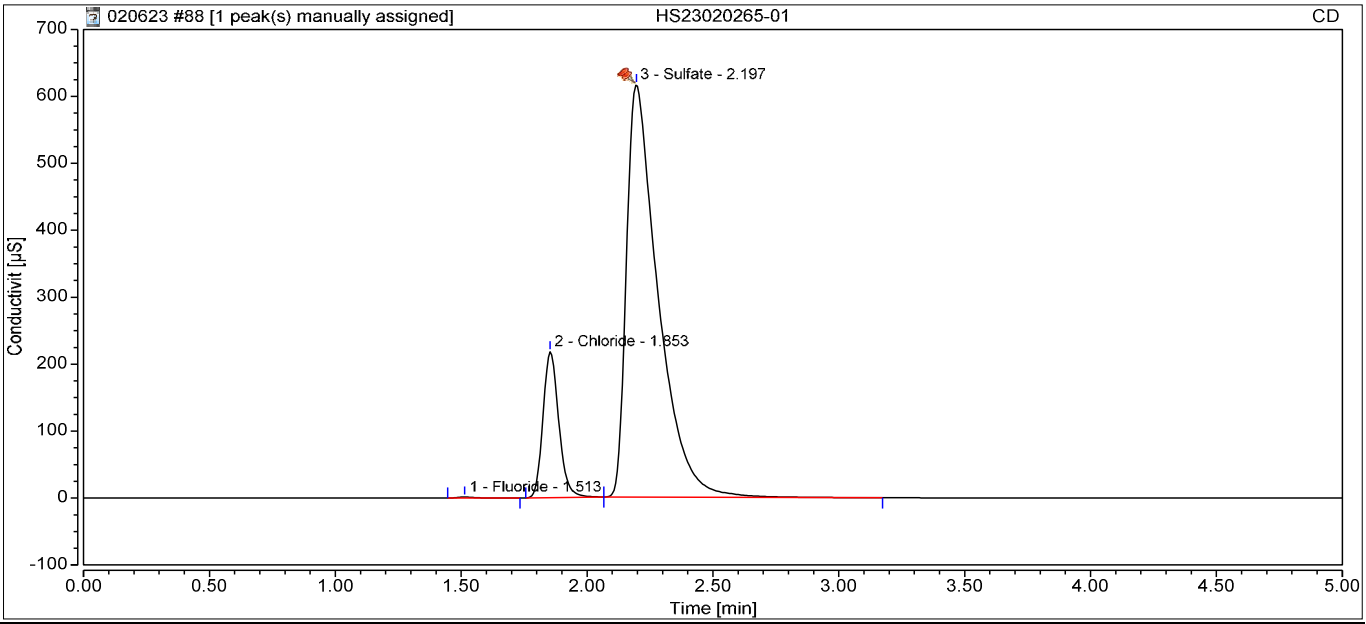

**Integration Results**

| No. | Retention min | Peak Name | Peak Type | Area µS*min | Amount ppm | Concentration ppm | Dilution |
|---|---|---|---|---|---|---|---|
| 1 | 1.52 | Fluoride | BMB* | 1.122 | 4.3263 | 4.3263 | 1.0000 |
| 2 | 1.86 | Chloride | BMb* | 3.753 | 21.8947 | 21.8947 | 1.0000 |
| 3 | 2.10 | Nitrite,N | bMb* | 1.415 | 4.1903 | 4.1903 | 1.0000 |
| 4 | 2.31 | Sulfate | bMb* | 2.571 | 22.8446 | 22.8446 | 1.0000 |
| 5 | 2.58 | Bromide | bMB* | 0.249 | 4.3549 | 4.3549 | 1.0000 |
| 6 | 2.89 | Nitrate | BMB* | 1.492 | 4.2716 | 4.2716 | 1.0000 |
| n.a. | n.a. | Chlorate | n.a. | n.a. | n.a. | n.a. | 1.0000 |
| 7 | 3.53 | Phosphate | BMB | 0.315 | 6.3016 | 6.3016 | 1.0000 |
| **Total:** | | | **0.000** | **10.918** | | **68.18** | |

*88 HS23020265-01*

| | | | |
|---|---|---|---|
| *Sample Name:* | **HS23020265-01** | *Injection Volume:* | **5.00** |
| *Vial Number:* | **BC1** | *Channel:* | **CD** |
| *Sample Type:* | **Unknown** | *Wavelength:* | **n.a.** |
| *Control Program:* | **Anions Program ISO37mM 150mm short 0.4 Constant current** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **Anions Processing Method ISO** | *Dilution Factor:* | **1.0000** |
| *Recording Time:* | **02/07/2023 16:26** | *Sample Weight:* | **1.0000** |

Run Time:



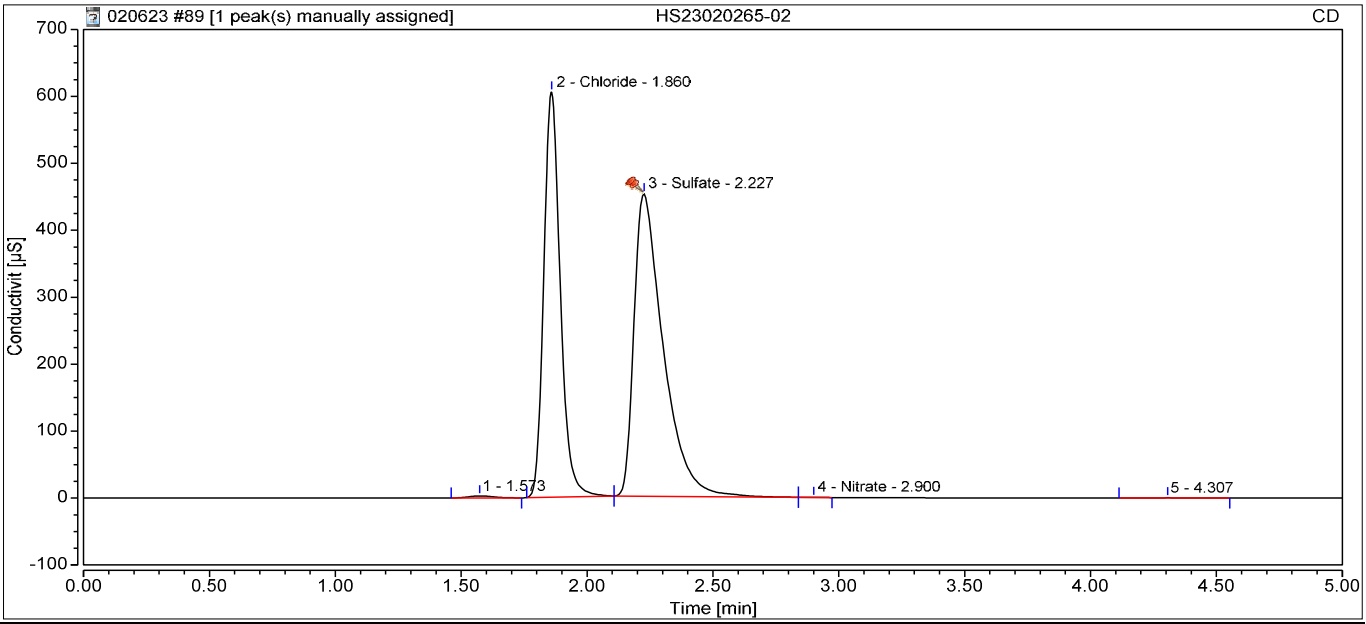

**Integration Results**

| No. | Retention min | Peak Name | Peak Type | Area µS*min | Amount ppm | Concentration ppm | Dilution |
|---|---|---|---|---|---|---|---|
| 1 | 1.51 | Fluoride | BMB | 0.122 | 0.4675 | 0.4675 | 1.0000 |
| 2 | 1.85 | Chloride | BMB | 15.854 | 92.4299 | 92.4299 | 1.0000 |
| n.a. | n.a. | Nitrite,N | n.a. | n.a. | n.a. | n.a. | 1.0000 |
| 3 | 2.20 | Sulfate | BMB^ | 89.408 | 794.8299 | 794.8299 | 1.0000 |
| n.a. | n.a. | Bromide | n.a. | n.a. | n.a. | n.a. | 1.0000 |
| n.a. | n.a. | Nitrate | n.a. | n.a. | n.a. | n.a. | 1.0000 |
| n.a. | n.a. | Chlorate | n.a. | n.a. | n.a. | n.a. | 1.0000 |
| n.a. | n.a. | Phosphate | n.a. | n.a. | n.a. | n.a. | 1.0000 |
| **Total:** | | | **0.000** | **105.384** | | **887.73** | |

*89 HS23020265-02*

| | | | |
|---|---|---|---|
| *Sample Name:* | **HS23020265-02** | *Injection Volume:* | **5.00** |
| *Vial Number:* | **BC2** | *Channel:* | **CD** |
| *Sample Type:* | **Unknown** | *Wavelength:* | **n.a.** |
| *Control Program:* | **Anions Program ISO37mM 150mm short 0.4 Constant current** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **Anions Processing Method ISO** | *Dilution Factor:* | **1.0000** |
| *Recording Time:* | **02/07/2023 16:31** | *Sample Weight:* | **1.0000** |

Run Time:



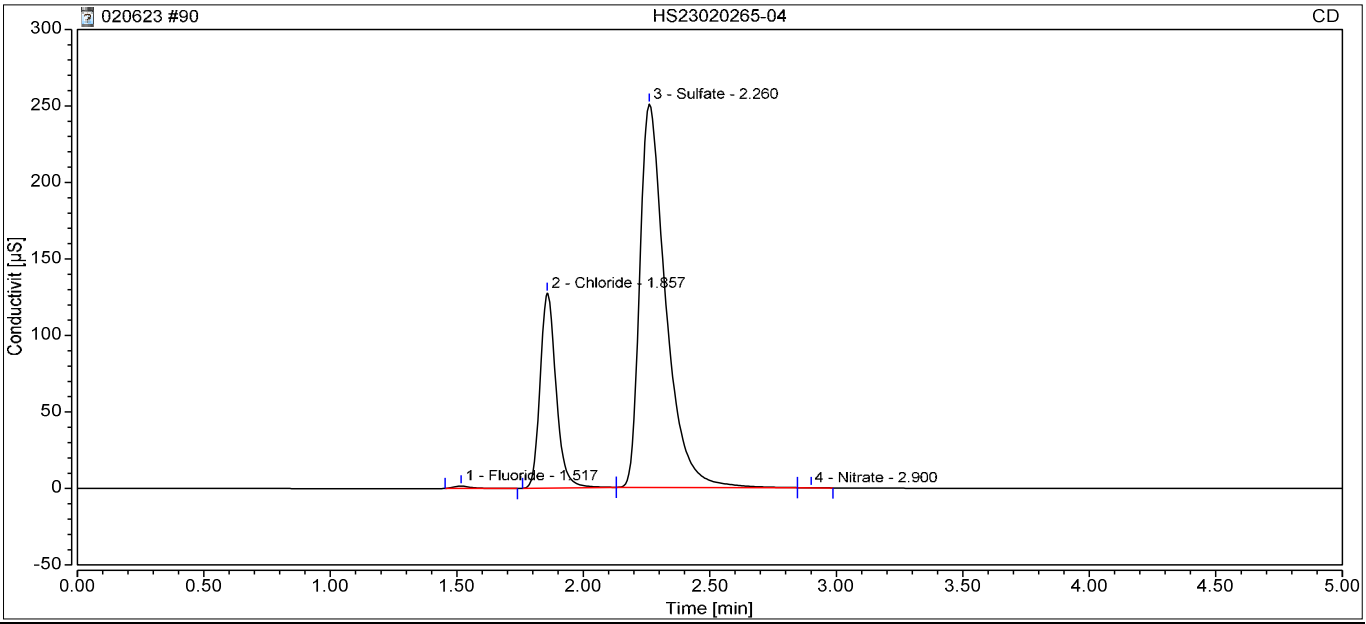

**Integration Results**

| No. | Retention min | Peak Name | Peak Type | Area µS*min | Amount ppm | Concentration ppm | Dilution |
|---|---|---|---|---|---|---|---|
| n.a. | n.a. | Fluoride | n.a. | n.a. | n.a. | n.a. | 1.0000 |
| 2 | 1.86 | Chloride | BMB | 45.872 | 267.3971 | 267.3971 | 1.0000 |
| n.a. | n.a. | Nitrite,N | n.a. | n.a. | n.a. | n.a. | 1.0000 |
| 3 | 2.23 | Sulfate | BMB^ | 60.562 | 538.3868 | 538.3868 | 1.0000 |
| n.a. | n.a. | Bromide | n.a. | n.a. | n.a. | n.a. | 1.0000 |
| 4 | 2.90 | Nitrate | BMB | 0.002 | n.a. | n.a. | 1.0000 |
| n.a. | n.a. | Chlorate | n.a. | n.a. | n.a. | n.a. | 1.0000 |
| n.a. | n.a. | Phosphate | n.a. | n.a. | n.a. | n.a. | 1.0000 |
| **Total:** | | | **0.000** | **106.437** | | **805.78** | |

*90 HS23020265-04*

| | | | |
|---|---|---|---|
| *Sample Name:* | **HS23020265-04** | *Injection Volume:* | **5.00** |
| *Vial Number:* | **BC3** | *Channel:* | **CD** |
| *Sample Type:* | **Unknown** | *Wavelength:* | **n.a.** |
| *Control Program:* | **Anions Program ISO37mM 150mm short 0.4 Constant current** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **Anions Processing Method ISO** | *Dilution Factor:* | **1.0000** |
| *Recording Time:* | **02/07/2023 16:37** | *Sample Weight:* | **1.0000** |

Run Time:

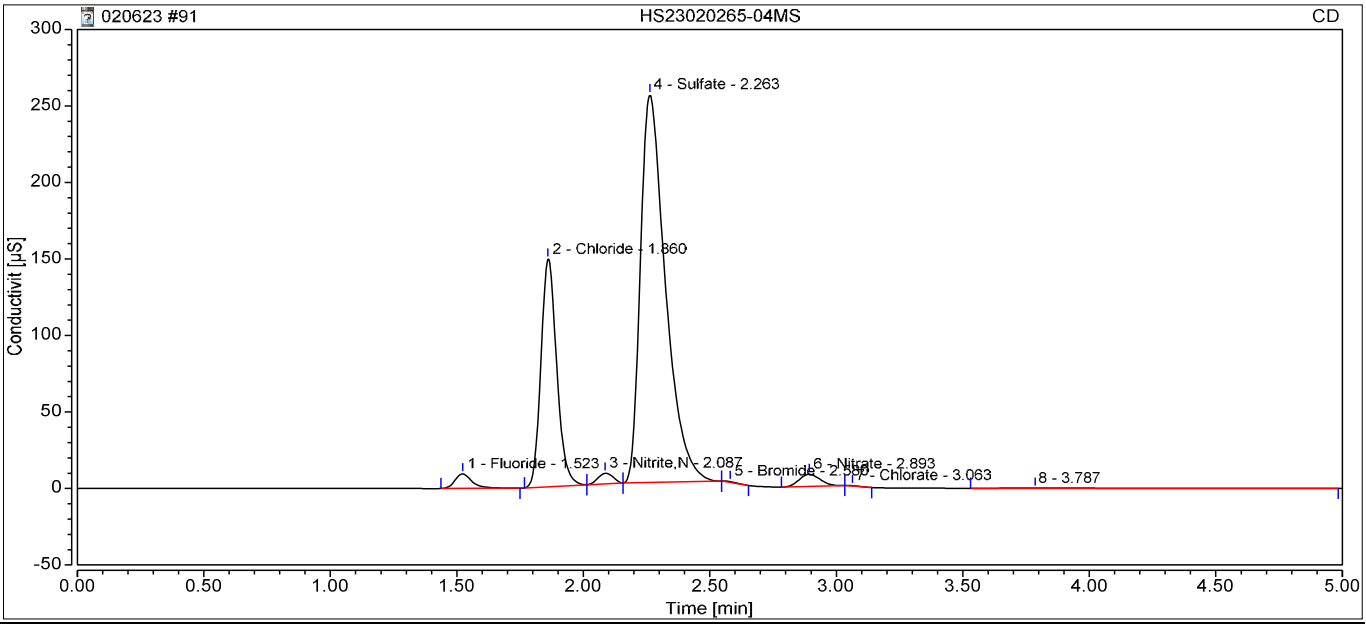



**Integration Results**

| No. | Retention min | Peak Name | Peak Type | Area µS*min | Amount ppm | Concentration ppm | Dilution |
|---|---|---|---|---|---|---|---|
| 1 | 1.52 | Fluoride | BMB | 0.122 | 0.4673 | 0.4673 | 1.0000 |
| 2 | 1.86 | Chloride | BMB | 9.326 | 54.3786 | 54.3786 | 1.0000 |
| n.a. | n.a. | Nitrite,N | n.a. | n.a. | n.a. | n.a. | 1.0000 |
| 3 | 2.26 | Sulfate | BMB | 29.671 | 263.7611 | 263.7611 | 1.0000 |
| n.a. | n.a. | Bromide | n.a. | n.a. | n.a. | n.a. | 1.0000 |
| 4 | 2.90 | Nitrate | BMB | 0.003 | n.a. | n.a. | 1.0000 |
| n.a. | n.a. | Chlorate | n.a. | n.a. | n.a. | n.a. | 1.0000 |
| n.a. | n.a. | Phosphate | n.a. | n.a. | n.a. | n.a. | 1.0000 |
| **Total:** | | | **0.000** | **39.122** | | **318.61** | |

| | | | |
|---|---|---|---|
| *91 HS23020265-04MS* | | | |
| *Sample Name:* | **HS23020265-04MS** | *Injection Volume:* | **5.00** |
| *Vial Number:* | **BC4** | *Channel:* | **CD** |
| *Sample Type:* | **Unknown** | *Wavelength:* | **n.a.** |
| *Control Program:* | **Anions Program ISO37mM 150mm short 0.4 Constant current** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **Anions Processing Method ISO** | *Dilution Factor:* | **1.0000** |
| *Recording Time:* | **02/07/2023 16:43** | *Sample Weight:* | **1.0000** |

Run Time:



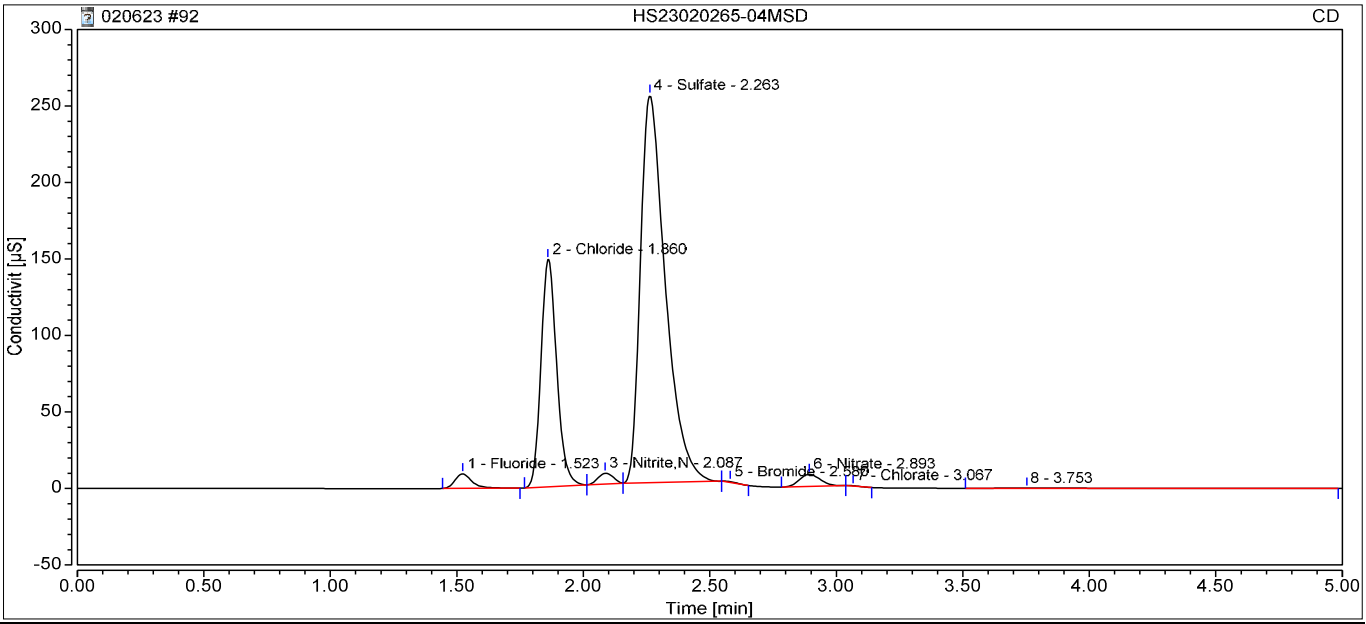

**Integration Results**

| No. | Retention min | Peak Name | Peak Type | Area µS*min | Amount ppm | Concentration ppm | Dilution |
|---|---|---|---|---|---|---|---|
| 1 | 1.52 | Fluoride | BMB | 0.749 | 2.8858 | 2.8858 | 1.0000 |
| 2 | 1.86 | Chloride | BMB | 10.748 | 62.6650 | 62.6650 | 1.0000 |
| 3 | 2.09 | Nitrite,N | BMB | 0.482 | 1.3592 | 1.3592 | 1.0000 |
| 4 | 2.26 | Sulfate | BMB | 29.023 | 257.9993 | 257.9993 | 1.0000 |
| 5 | 2.58 | Bromide | BMB | 0.032 | 0.6061 | 0.6061 | 1.0000 |
| 6 | 2.89 | Nitrate | BMB | 0.755 | 2.1470 | 2.1470 | 1.0000 |
| 7 | 3.06 | Chlorate | BMB | 0.011 | 1.9155 | 1.9155 | 1.0000 |
| n.a. | n.a. | Phosphate | n.a. | n.a. | n.a. | n.a. | 1.0000 |
| **Total:** | | | **0.000** | **41.799** | | **329.58** | |

*92 HS23020265-04MSD*

| | | | |
|---|---|---|---|
| *Sample Name:* | **HS23020265-04MSD** | *Injection Volume:* | **5.00** |
| *Vial Number:* | **BC5** | *Channel:* | **CD** |
| *Sample Type:* | **Unknown** | *Wavelength:* | **n.a.** |
| *Control Program:* | **Anions Program ISO37mM 150mm short 0.4 Constant current** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **Anions Processing Method ISO** | *Dilution Factor:* | **1.0000** |
| *Recording Time:* | **02/07/2023 16:49** | *Sample Weight:* | **1.0000** |

Run Time:



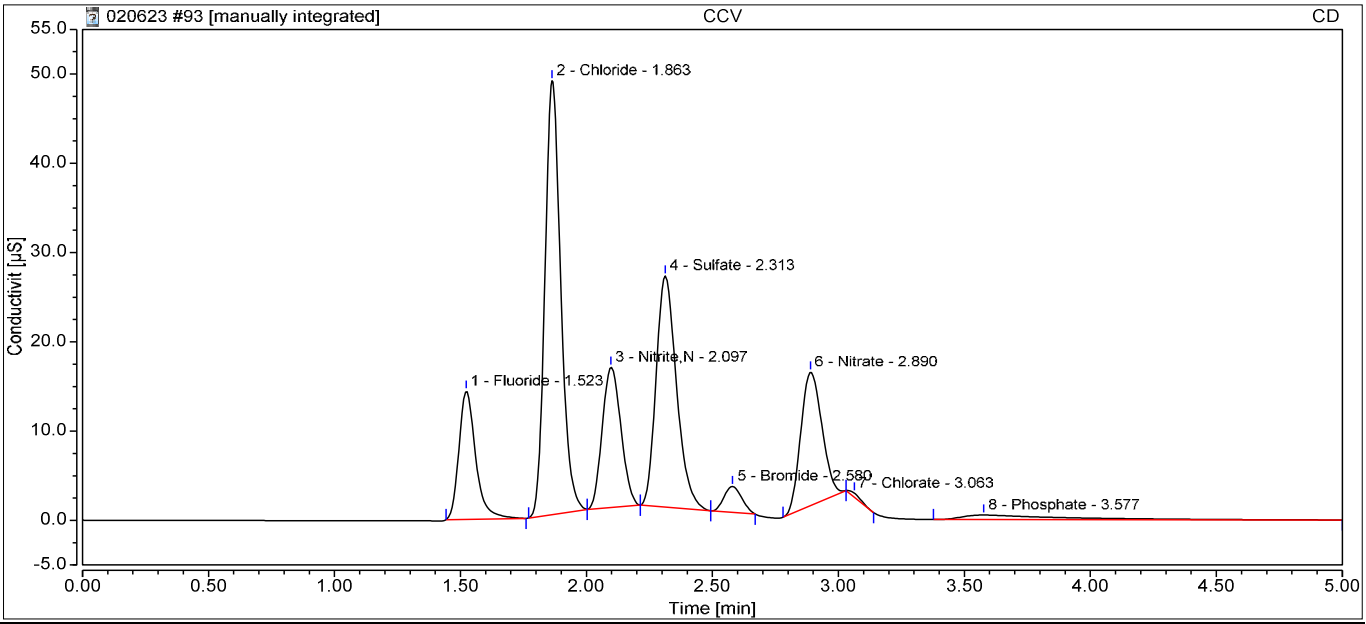

**Integration Results**

| No. | Retention min | Peak Name | Peak Type | Area µS*min | Amount ppm | Concentration ppm | Dilution |
|---|---|---|---|---|---|---|---|
| 1 | 1.52 | Fluoride | BMB | 0.743 | 2.8623 | 2.8623 | 1.0000 |
| 2 | 1.86 | Chloride | BMB | 10.707 | 62.4275 | 62.4275 | 1.0000 |
| 3 | 2.09 | Nitrite,N | BMB | 0.483 | 1.3622 | 1.3622 | 1.0000 |
| 4 | 2.26 | Sulfate | BMB | 28.912 | 257.0147 | 257.0147 | 1.0000 |
| 5 | 2.58 | Bromide | BMB | 0.032 | 0.6087 | 0.6087 | 1.0000 |
| 6 | 2.89 | Nitrate | BMB | 0.754 | 2.1454 | 2.1454 | 1.0000 |
| 7 | 3.07 | Chlorate | BMB | 0.009 | 1.5986 | 1.5986 | 1.0000 |
| n.a. | n.a. | Phosphate | n.a. | n.a. | n.a. | n.a. | 1.0000 |
| **Total:** | | | **0.000** | **41.640** | | **328.02** | |

*93 CCV*

| | | | |
|---|---|---|---|
| *Sample Name:* | **CCV** | *Injection Volume:* | **5.00** |
| *Vial Number:* | **R1** | *Channel:* | **CD** |
| *Sample Type:* | **Unknown** | *Wavelength:* | **n.a.** |
| *Control Program:* | **Anions Program ISO37mM 150mm short 0.4 Constant current** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **Anions Processing Method ISO** | *Dilution Factor:* | **1.0000** |
| *Recording Time:* | **02/07/2023 17:12** | *Sample Weight:* | **1.0000** |

Run Time:



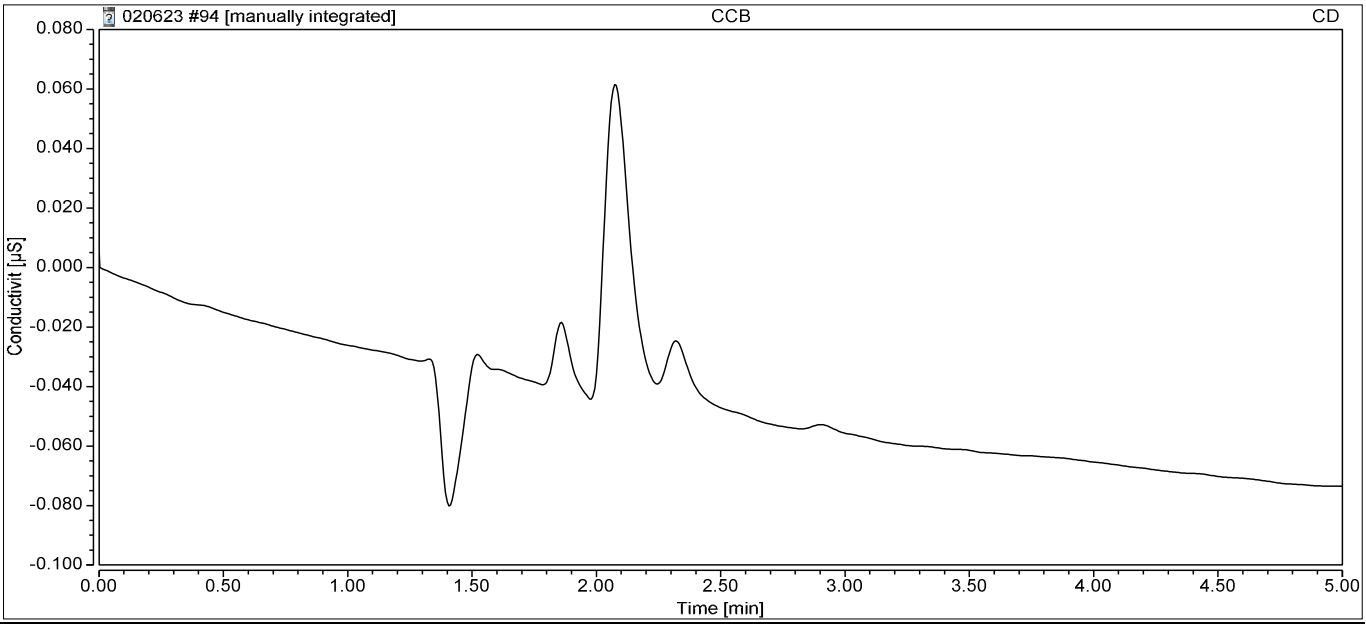

**Integration Results**

| No. | Retention min | Peak Name | Peak Type | Area µS*min | Amount ppm | Concentration ppm | Dilution |
|---|---|---|---|---|---|---|---|
| 1 | 1.52 | Fluoride | BMB | 1.108 | 4.2712 | 4.2712 | 1.0000 |
| 2 | 1.86 | Chloride | BMB | 3.536 | 20.6313 | 20.6313 | 1.0000 |
| 3 | 2.10 | Nitrite,N | BMB | 1.350 | 3.9832 | 3.9832 | 1.0000 |
| 4 | 2.31 | Sulfate | BMb* | 2.439 | 21.6669 | 21.6669 | 1.0000 |
| 5 | 2.58 | Bromide | bMB* | 0.238 | 4.1628 | 4.1628 | 1.0000 |
| 6 | 2.89 | Nitrate | BMB | 1.459 | 4.1742 | 4.1742 | 1.0000 |
| 7 | 3.06 | Chlorate | BMB | 0.024 | 4.4131 | 4.4131 | 1.0000 |
| 8 | 3.58 | Phosphate | BMB | 0.245 | 5.7570 | 5.7570 | 1.0000 |
| **Total:** | | | **0.000** | **10.399** | | **69.06** | |

*94 CCB*

| | | | |
|---|---|---|---|
| *Sample Name:* | **CCB** | *Injection Volume:* | **5.00** |
| *Vial Number:* | **R4** | *Channel:* | **CD** |
| *Sample Type:* | **Unknown** | *Wavelength:* | **n.a.** |
| *Control Program:* | **Anions Program ISO37mM 150mm short 0.4 Constant current** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **Anions Processing Method ISO** | *Dilution Factor:* | **1.0000** |
| *Recording Time:* | **02/07/2023 17:17** | *Sample Weight:* | **1.0000** |

Run Time:




**Integration Results**

| No. | Retention min | Peak Name | Peak Type | Area µS*min | Amount ppm | Concentration ppm | Dilution |
|---|---|---|---|---|---|---|---|
| n.a. | n.a. | Fluoride | n.a. | n.a. | n.a. | n.a. | 1.0000 |
| n.a. | n.a. | Chloride | n.a. | n.a. | n.a. | n.a. | 1.0000 |
| n.a. | n.a. | Nitrite,N | n.a. | n.a. | n.a. | n.a. | 1.0000 |
| n.a. | n.a. | Sulfate | n.a. | n.a. | n.a. | n.a. | 1.0000 |
| n.a. | n.a. | Bromide | n.a. | n.a. | n.a. | n.a. | 1.0000 |
| n.a. | n.a. | Nitrate | n.a. | n.a. | n.a. | n.a. | 1.0000 |
| n.a. | n.a. | Chlorate | n.a. | n.a. | n.a. | n.a. | 1.0000 |
| n.a. | n.a. | Phosphate | n.a. | n.a. | n.a. | n.a. | 1.0000 |
| **Total:** | | | **0.000** | **0.000** | | **0.00** | |

Sequence: 020823
Last Update Operator: alshs.nouser

| CD | Name | Comment | Type | Position | Dilution | Level | Instrument Method |
|---|---|---|---|---|---|---|---|
|  | STD1 | | Calibratic | BA1 | 1.00 | 1 | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | STD2 | | Calibratic | BA2 | 1.00 | 2 | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | STD3 | | Calibratic | BA3 | 1.00 | 3 | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | STD4 | | Calibratic | BA4 | 1.00 | 4 | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | STD5 | | Calibratic | BA5 | 1.00 | 5 | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | STD6 | | Calibratic | BA6 | 1.00 | 6 | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | ICV | | Unknown | BA7 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | ICB | | Unknown | BA8 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | CCV1 | | Unknown | R3 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | CCB | | Unknown | R7 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | MBLK | 9056-W | Unknown | R5 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | LCS | | Unknown | R2 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | HS23020265-01DF20 | | Unknown | RA5 | 20.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | HS23020265-02DF10 | | Unknown | RA6 | 10.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | HS23020265-04DF10 | | Unknown | RA7 | 10.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | HS23020265-04MSDF1( | | Unknown | RA8 | 10.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | HS23020265-04MSDDF | | Unknown | RB1 | 10.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | CCV | | Unknown | R1 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | CCB | | Unknown | R4 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | CCV1 | | Unknown | R3 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | CCB | | Unknown | R7 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | CCV | | Unknown | R1 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |
|  | CCB | | Unknown | R4 | 1.00 | | Anions Program ISO37mM 150mm short 0.4 Constant current |

Sequence: 020823
Last Update Operator: alshs.nouser

| Processing Method | CD | Name | me | Status | Inject Time |
|---|---|---|---|---|---|
| Anions Processing Method ISO |  | STD1 | 5.0 | Finished | 1/23/2023 2:36:57 PM -06:00 |
| Anions Processing Method ISO |  | STD2 | 5.0 | Finished | 1/23/2023 2:42:45 PM -06:00 |
| Anions Processing Method ISO |  | STD3 | 5.0 | Finished | 1/23/2023 2:48:34 PM -06:00 |
| Anions Processing Method ISO |  | STD4 | 5.0 | Finished | 1/23/2023 2:54:22 PM -06:00 |
| Anions Processing Method ISO |  | STD5 | 5.0 | Finished | 1/23/2023 3:00:10 PM -06:00 |
| Anions Processing Method ISO |  | STD6 | 5.0 | Finished | 1/23/2023 3:05:59 PM -06:00 |
| Anions Processing Method ISO |  | ICV | 5.0 | Finished | 1/23/2023 3:11:47 PM -06:00 |
| Anions Processing Method ISO |  | ICB | 5.0 | Finished | 1/23/2023 3:17:35 PM -06:00 |
| Anions Processing Method ISO |  | CCV1 | 5.0 | Finished | 2/8/2023 10:03:09 AM -06:00 |
| Anions Processing Method ISO |  | CCB | 5.0 | Finished | 2/8/2023 10:08:54 AM -06:00 |
| Anions Processing Method ISO |  | MBLK | 5.0 | Finished | 2/8/2023 10:20:26 AM -06:00 |
| Anions Processing Method ISO |  | LCS | 5.0 | Finished | 2/8/2023 10:26:12 AM -06:00 |
| Anions Processing Method ISO |  | HS23020265-01DF20 | 5.0 | Finished | 2/8/2023 10:37:44 AM -06:00 |
| Anions Processing Method ISO |  | HS23020265-02DF10 | 5.0 | Finished | 2/8/2023 10:43:29 AM -06:00 |
| Anions Processing Method ISO |  | HS23020265-04DF10 | 5.0 | Finished | 2/8/2023 10:49:15 AM -06:00 |
| Anions Processing Method ISO |  | HS23020265-04MSDF1( | 5.0 | Finished | 2/8/2023 10:55:01 AM -06:00 |
| Anions Processing Method ISO |  | HS23020265-04MSDDF | 5.0 | Finished | 2/8/2023 11:00:47 AM -06:00 |
| Anions Processing Method ISO |  | CCV | 5.0 | Finished | 2/8/2023 11:35:22 AM -06:00 |
| Anions Processing Method ISO |  | CCB | 5.0 | Finished | 2/8/2023 11:41:08 AM -06:00 |
| Anions Processing Method ISO |  | CCV1 | 5.0 | Finished | 2/8/2023 12:56:47 PM -06:00 |
| Anions Processing Method ISO |  | CCB | 5.0 | Finished | 2/8/2023 1:02:33 PM -06:00 |
| Anions Processing Method ISO |  | CCV | 5.0 | Finished | 2/8/2023 2:29:29 PM -06:00 |
| Anions Processing Method ISO |  | CCB | 5.0 | Finished | 2/8/2023 2:35:14 PM -06:00 |

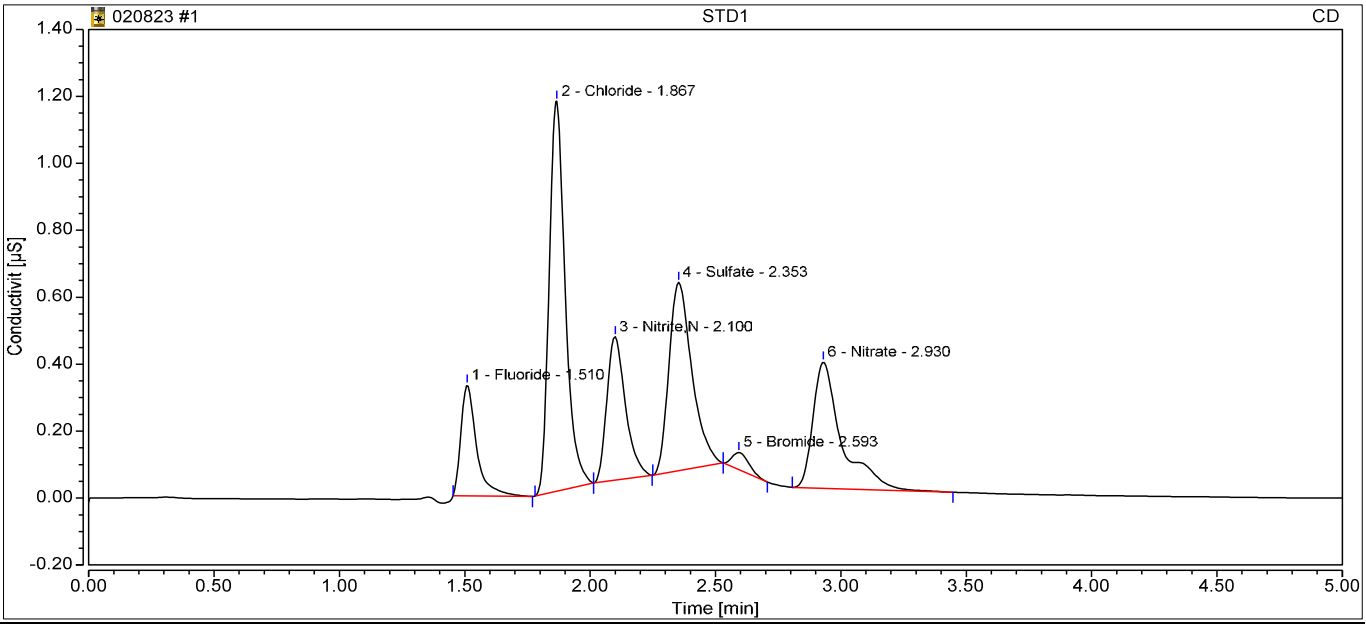
Sequence: 012723
Injection #6: STD6

Calibration

| Peak No. | Peak Name | Cal.Type | Eval.Type | Number of Points | Rel.Std.Dev. % | Coeff.of Determination | C0 (Offset) | C1 (Slope) | C2 (Curve) |
|---|---|---|---|---|---|---|---|---|---|
| ***1*** | ***Fluoride*** | ***Lin, WithOffset, 1/A*** | ***Area*** | ***6*** | ***18.2600*** | ***0.99823*** | ***0.0003*** | ***0.2594*** | ***0.0000*** |
| 2 | Chloride | Lin, WithOffset, 1/A | Area | 6 | 3.9326 | 0.99992 | -0.0034 | 0.1716 | 0.0000 |
| 3 | Nitrite,N | Quad, WithOffset, 1/A | Area | 6 | 6.5665 | 0.99976 | 0.0001 | 0.3625 | -0.0059 |
| 4 | Sulfate | Lin, WithOffset, 1/A | Area | 6 | 7.0089 | 0.99974 | 0.0018 | 0.1125 | 0.0000 |
| 5 | Bromide | Lin, WithOffset, 1/A | Area | 6 | 21.3247 | 0.99813 | -0.0031 | 0.0579 | 0.0000 |
| 6 | Nitrate | Lin, WithOffset, 1/A | Area | 6 | 8.6115 | 0.99956 | 0.0097 | 0.3471 | 0.0000 |
| 7 | Chlorate | Quad, WithOffset, 1/A | Area | 5 | 14.8871 | 0.99687 | -0.0004 | 0.0060 | -0.0001 |
| 8 | Phosphate | Lin, WithOffset, 1/A | Area | 2 | n.a. | 1.00000 | -0.4901 | 0.1278 | 0.0000 |
| **Maximum** | | | | | **21.3247** | 1.00000 | | | |
| **Minimum** | | | | | 3.9326 | **0.99687** | | | |

| | | | |
|---|---|---|---|
| *1 STD1* | | | |
| *Sample Name:* | **STD1** | *Injection Volume:* | **5.00** |
| *Vial Number:* | **BA1** | *Channel:* | **CD** |
| *Sample Type:* | **Calibration Standard** | *Wavelength:* | **n.a.** |
| *Control Program:* | **Anions Program ISO37mM 150mm short 0.4 Constant current** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **Anions Processing Method ISO** | *Dilution Factor:* | **1.0000** |
| *Recording Time:* | **01/23/2023 14:36** | *Sample Weight:* | **1.0000** |

Run Time:



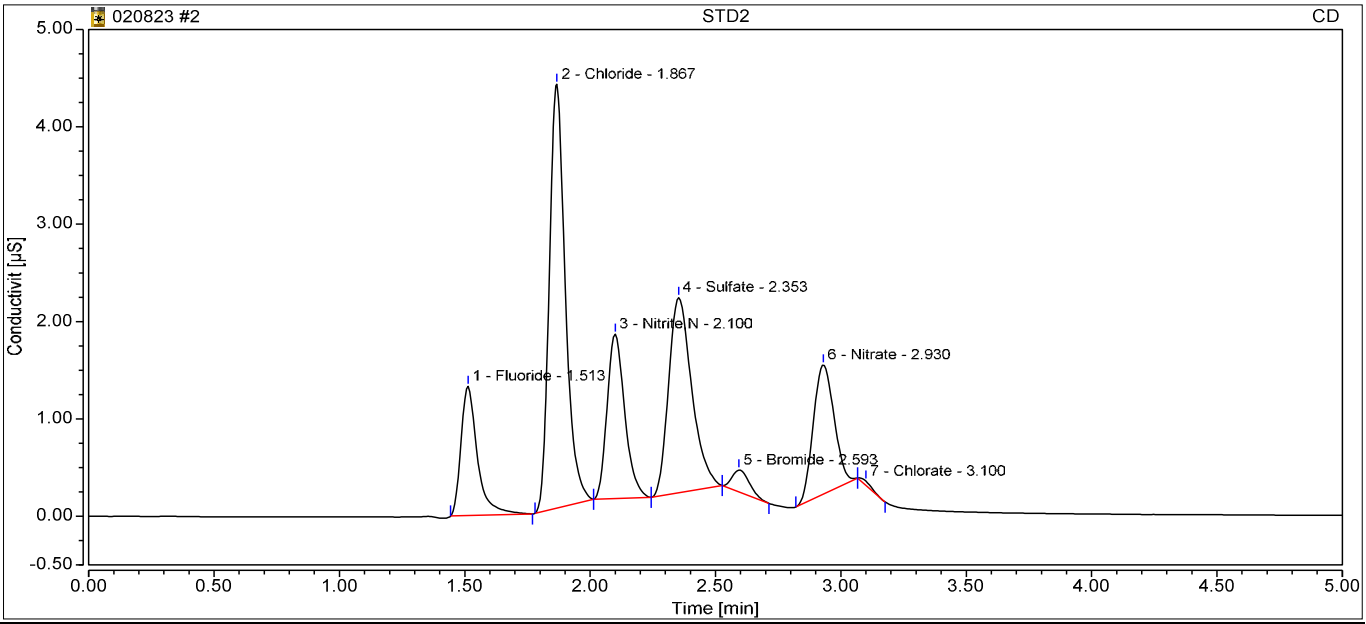

**Integration Results**

| No. | Retention min | Peak Name | Peak Type | Area µS*min | Amount ppm | Concentration ppm | Dilution |
|---|---|---|---|---|---|---|---|
| 1 | 1.51 | Fluoride | BMB | 0.024 | 0.0916 | 0.0916 | 1.0000 |
| 2 | 1.87 | Chloride | BMB | 0.087 | 0.5248 | 0.5248 | 1.0000 |
| 3 | 2.10 | Nitrite,N | BMB | 0.037 | 0.1020 | 0.1020 | 1.0000 |
| 4 | 2.35 | Sulfate | BMB | 0.060 | 0.5165 | 0.5165 | 1.0000 |
| 5 | 2.59 | Bromide | BMB | 0.004 | 0.1232 | 0.1232 | 1.0000 |
| 6 | 2.93 | Nitrate | BMB | 0.050 | 0.1161 | 0.1161 | 1.0000 |
| n.a. | n.a. | Chlorate | n.a. | n.a. | n.a. | n.a. | 1.0000 |
| n.a. | n.a. | Phosphate | n.a. | n.a. | n.a. | n.a. | 1.0000 |
| **Total:** | | | **0.000** | **0.262** | | **1.47** | |

*2 STD2*

| | | | |
|---|---|---|---|
| *Sample Name:* | **STD2** | *Injection Volume:* | **5.00** |
| *Vial Number:* | **BA2** | *Channel:* | **CD** |
| *Sample Type:* | **Calibration Standard** | *Wavelength:* | **n.a.** |
| *Control Program:* | **Anions Program ISO37mM 150mm short 0.4 Constant current** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **Anions Processing Method ISO** | *Dilution Factor:* | **1.0000** |
| *Recording Time:* | **01/23/2023 14:42** | *Sample Weight:* | **1.0000** |

Run Time:



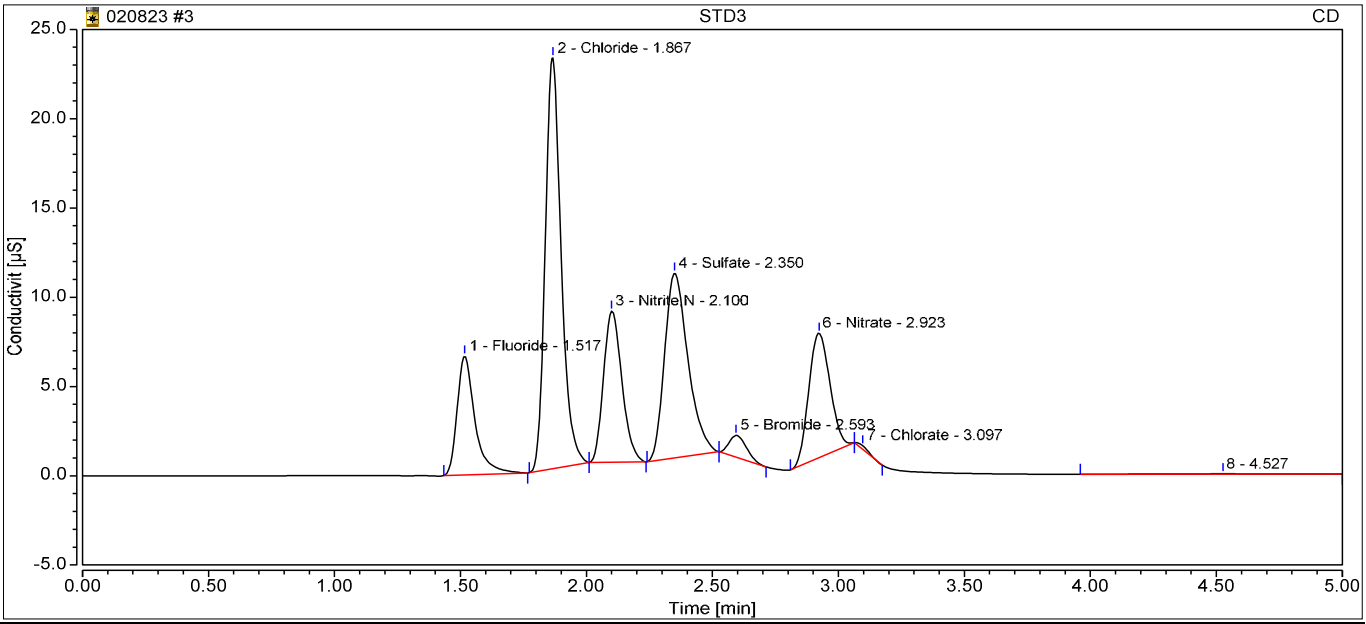

**Integration Results**

| No. | Retention min | Peak Name | Peak Type | Area µS*min | Amount ppm | Concentration ppm | Dilution |
|---|---|---|---|---|---|---|---|
| 1 | 1.51 | Fluoride | BMB | 0.101 | 0.3891 | 0.3891 | 1.0000 |
| 2 | 1.87 | Chloride | BMB | 0.323 | 1.9022 | 1.9022 | 1.0000 |
| 3 | 2.10 | Nitrite,N | BMB | 0.138 | 0.3825 | 0.3825 | 1.0000 |
| 4 | 2.35 | Sulfate | BMB | 0.215 | 1.8922 | 1.8922 | 1.0000 |
| 5 | 2.59 | Bromide | BMB | 0.018 | 0.3682 | 0.3682 | 1.0000 |
| 6 | 2.93 | Nitrate | BMB | 0.128 | 0.3409 | 0.3409 | 1.0000 |
| 7 | 3.10 | Chlorate | BMB | 0.002 | 0.4193 | 0.4193 | 1.0000 |
| n.a. | n.a. | Phosphate | n.a. | n.a. | n.a. | n.a. | 1.0000 |
| **Total:** | | | **0.000** | **0.925** | | **5.69** | |

*3 STD3*

| | | | |
|---|---|---|---|
| *Sample Name:* | **STD3** | *Injection Volume:* | **5.00** |
| *Vial Number:* | **BA3** | *Channel:* | **CD** |
| *Sample Type:* | **Calibration Standard** | *Wavelength:* | **n.a.** |
| *Control Program:* | **Anions Program ISO37mM 150mm short 0.4 Constant current** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **Anions Processing Method ISO** | *Dilution Factor:* | **1.0000** |
| *Recording Time:* | **01/23/2023 14:48** | *Sample Weight:* | **1.0000** |

Run Time:



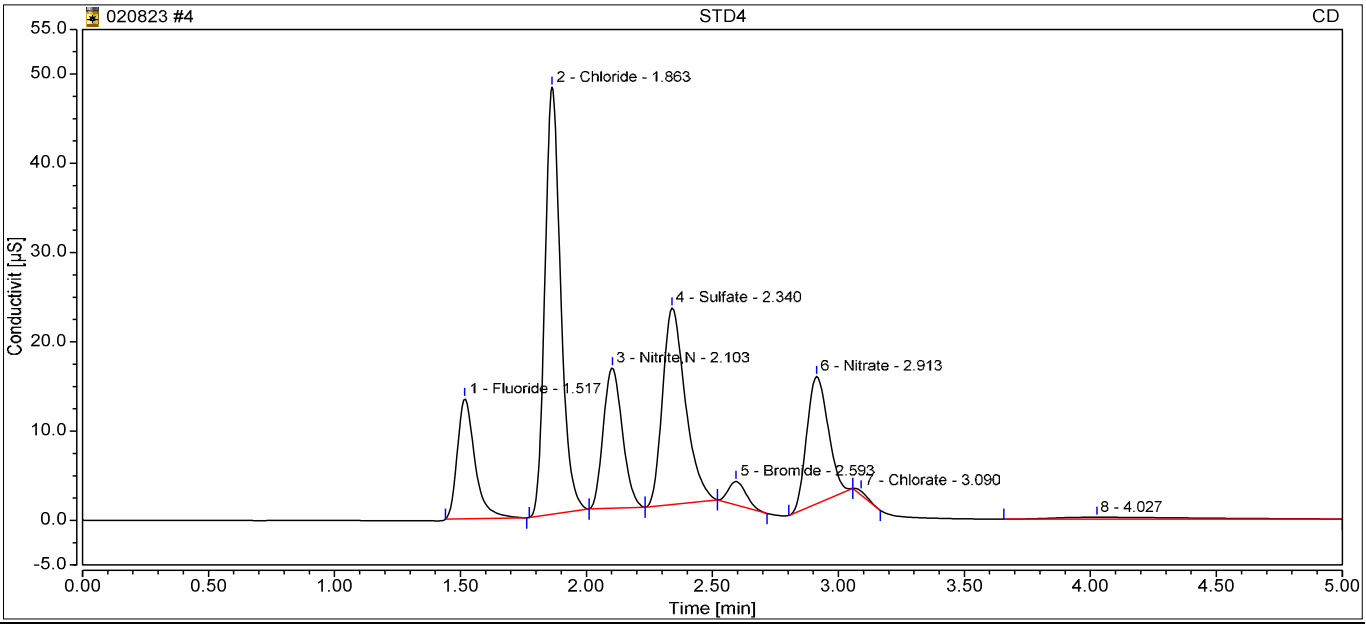

**Integration Results**

| No. | Retention min | Peak Name | Peak Type | Area µS*min | Amount ppm | Concentration ppm | Dilution |
|---|---|---|---|---|---|---|---|
| 1 | 1.52 | Fluoride | BMB | 0.545 | 2.1003 | 2.1003 | 1.0000 |
| 2 | 1.87 | Chloride | BMB | 1.685 | 9.8413 | 9.8413 | 1.0000 |
| 3 | 2.10 | Nitrite,N | BMB | 0.715 | 2.0394 | 2.0394 | 1.0000 |
| 4 | 2.35 | Sulfate | BMB | 1.114 | 9.8924 | 9.8924 | 1.0000 |
| 5 | 2.59 | Bromide | BMB | 0.099 | 1.7671 | 1.7671 | 1.0000 |
| 6 | 2.92 | Nitrate | BMB | 0.683 | 1.9402 | 1.9402 | 1.0000 |
| 7 | 3.10 | Chlorate | BMB | 0.010 | 1.7695 | 1.7695 | 1.0000 |
| n.a. | n.a. | Phosphate | n.a. | n.a. | n.a. | n.a. | 1.0000 |
| **Total:** | | | **0.000** | **4.851** | | **29.35** | |

*4 STD4*

| | | | |
|---|---|---|---|
| *Sample Name:* | **STD4** | *Injection Volume:* | **5.00** |
| *Vial Number:* | **BA4** | *Channel:* | **CD** |
| *Sample Type:* | **Calibration Standard** | *Wavelength:* | **n.a.** |
| *Control Program:* | **Anions Program ISO37mM 150mm short 0.4 Constant current** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **Anions Processing Method ISO** | *Dilution Factor:* | **1.0000** |
| *Recording Time:* | **01/23/2023 14:54** | *Sample Weight:* | **1.0000** |

Run Time:



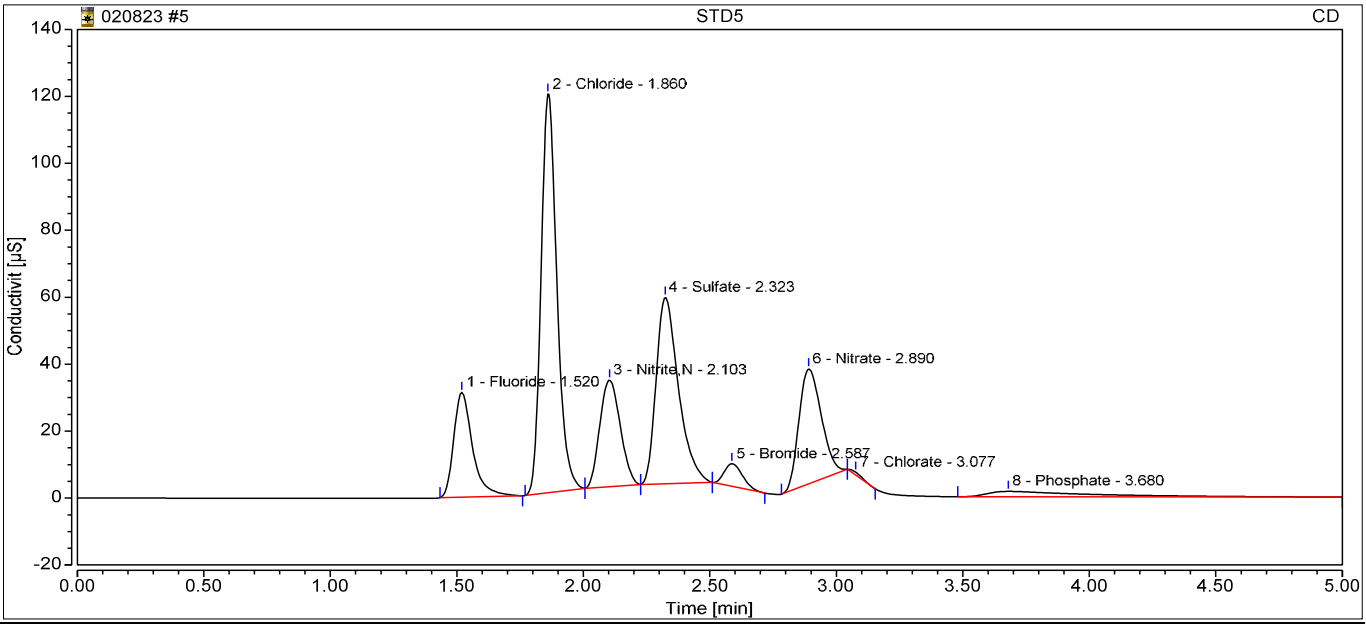

**Integration Results**

| No. | Retention min | Peak Name | Peak Type | Area µS*min | Amount ppm | Concentration ppm | Dilution |
|---|---|---|---|---|---|---|---|
| 1 | 1.52 | Fluoride | BMB | 1.096 | 4.2257 | 4.2257 | 1.0000 |
| 2 | 1.86 | Chloride | BMB | 3.473 | 20.2647 | 20.2647 | 1.0000 |
| 3 | 2.10 | Nitrite,N | BMB | 1.379 | 4.0759 | 4.0759 | 1.0000 |
| 4 | 2.34 | Sulfate | BMB | 2.316 | 20.5697 | 20.5697 | 1.0000 |
| 5 | 2.59 | Bromide | BMB | 0.216 | 3.7890 | 3.7890 | 1.0000 |
| 6 | 2.91 | Nitrate | BMB | 1.408 | 4.0269 | 4.0269 | 1.0000 |
| 7 | 3.09 | Chlorate | BMB | 0.023 | 4.3199 | 4.3199 | 1.0000 |
| n.a. | n.a. | Phosphate | n.a. | n.a. | n.a. | n.a. | 1.0000 |
| **Total:** | | | **0.000** | **9.911** | | **61.27** | |

*5 STD5*

| | | | |
|---|---|---|---|
| *Sample Name:* | **STD5** | *Injection Volume:* | **5.00** |
| *Vial Number:* | **BA5** | *Channel:* | **CD** |
| *Sample Type:* | **Calibration Standard** | *Wavelength:* | **n.a.** |
| *Control Program:* | **Anions Program ISO37mM 150mm short 0.4 Constant current** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **Anions Processing Method ISO** | *Dilution Factor:* | **1.0000** |
| *Recording Time:* | **01/23/2023 15:00** | *Sample Weight:* | **1.0000** |

Run Time:



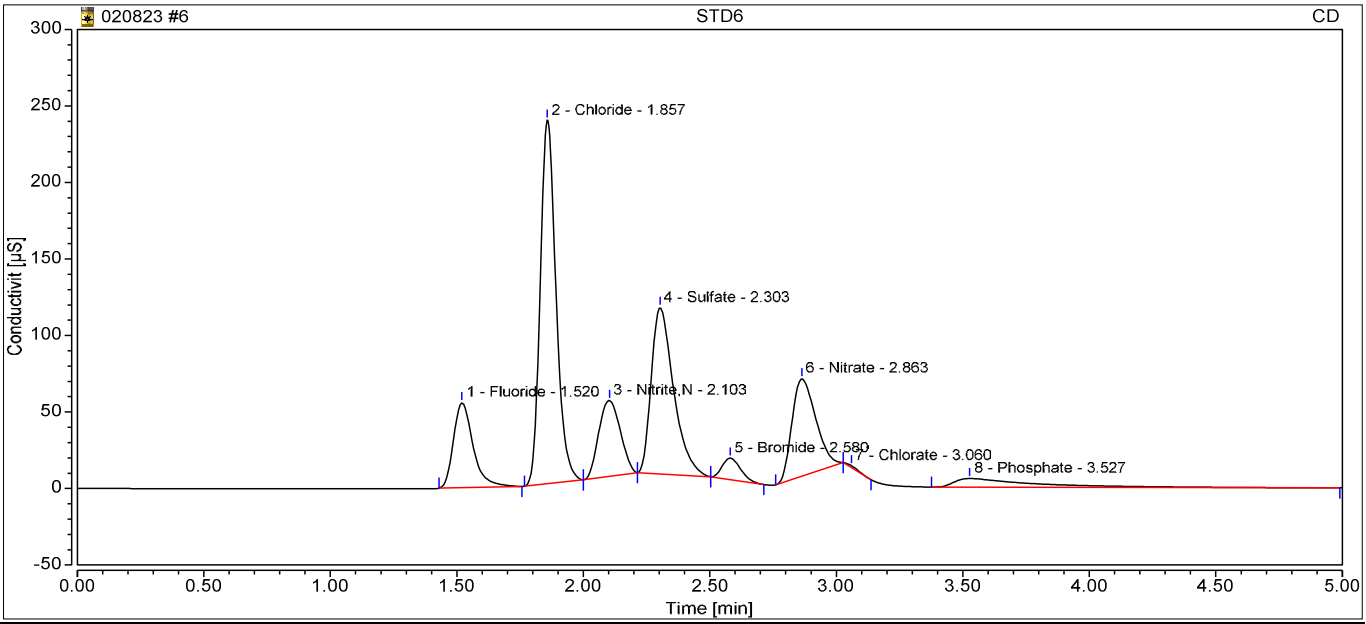

**Integration Results**

| No. | Retention min | Peak Name | Peak Type | Area µS*min | Amount ppm | Concentration ppm | Dilution |
|---|---|---|---|---|---|---|---|
| 1 | 1.52 | Fluoride | BMB | 2.698 | 10.4020 | 10.4020 | 1.0000 |
| 2 | 1.86 | Chloride | BMB | 8.612 | 50.2171 | 50.2171 | 1.0000 |
| 3 | 2.10 | Nitrite,N | BMB | 2.980 | 9.7904 | 9.7904 | 1.0000 |
| 4 | 2.32 | Sulfate | BMB | 5.704 | 50.6918 | 50.6918 | 1.0000 |
| 5 | 2.59 | Bromide | BMB | 0.569 | 9.8884 | 9.8884 | 1.0000 |
| 6 | 2.89 | Nitrate | BMB | 3.525 | 10.1264 | 10.1264 | 1.0000 |
| 7 | 3.08 | Chlorate | BMB | 0.047 | 9.8667 | 9.8667 | 1.0000 |
| 8 | 3.68 | Phosphate | BMB | 0.787 | 10.0000 | 10.0000 | 1.0000 |
| **Total:** | | | **0.000** | **24.922** | | **160.98** | |

*6 STD6*

| | | | |
|---|---|---|---|
| *Sample Name:* | **STD6** | *Injection Volume:* | **5.00** |
| *Vial Number:* | **BA6** | *Channel:* | **CD** |
| *Sample Type:* | **Calibration Standard** | *Wavelength:* | **n.a.** |
| *Control Program:* | **Anions Program ISO37mM 150mm short 0.4 Constant current** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **Anions Processing Method ISO** | *Dilution Factor:* | **1.0000** |
| *Recording Time:* | **01/23/2023 15:05** | *Sample Weight:* | **1.0000** |

Run Time:



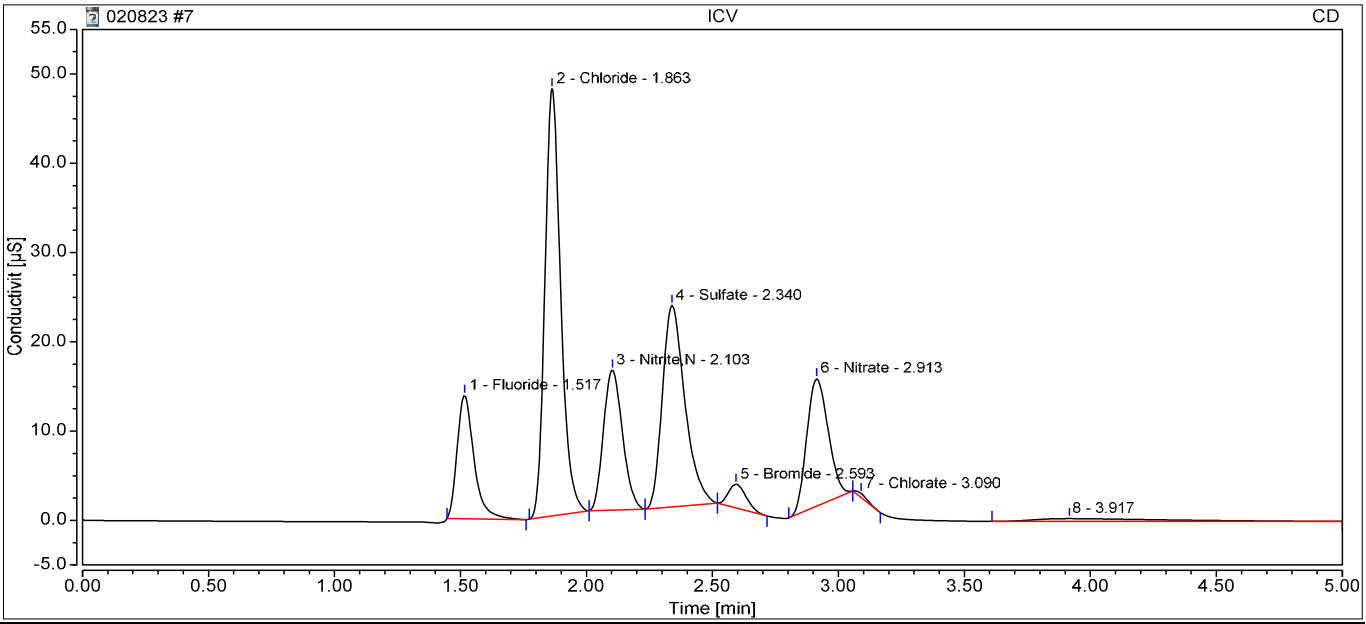

**Integration Results**

| No. | Retention min | Peak Name | Peak Type | Area µS*min | Amount ppm | Concentration ppm | Dilution |
|---|---|---|---|---|---|---|---|
| 1 | 1.52 | Fluoride | BMB | 5.004 | 19.2913 | 19.2913 | 1.0000 |
| 2 | 1.86 | Chloride | BMB | 17.110 | 99.7497 | 99.7497 | 1.0000 |
| 3 | 2.10 | Nitrite,N | BMB | 4.894 | 20.1587 | 20.1587 | 1.0000 |
| 4 | 2.30 | Sulfate | BMB | 11.131 | 98.9373 | 98.9373 | 1.0000 |
| 5 | 2.58 | Bromide | BMB | 1.187 | 20.5641 | 20.5641 | 1.0000 |
| 6 | 2.86 | Nitrate | BMB | 6.935 | 19.9496 | 19.9496 | 1.0000 |
| 7 | 3.06 | Chlorate | BMB | 0.069 | 20.0446 | 20.0446 | 1.0000 |
| 8 | 3.53 | Phosphate | BMB | 2.065 | 20.0000 | 20.0000 | 1.0000 |
| **Total:** | | | **0.000** | **48.395** | | **318.70** | |

7 ICV

| | | | |
|---|---|---|---|
| *Sample Name:* | **ICV** | *Injection Volume:* | **5.00** |
| *Vial Number:* | **BA7** | *Channel:* | **CD** |
| *Sample Type:* | **Unknown** | *Wavelength:* | **n.a.** |
| *Control Program:* | **Anions Program ISO37mM 150mm short 0.4 Constant current** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **Anions Processing Method ISO** | *Dilution Factor:* | **1.0000** |
| *Recording Time:* | **01/23/2023 15:11** | *Sample Weight:* | **1.0000** |

Run Time:



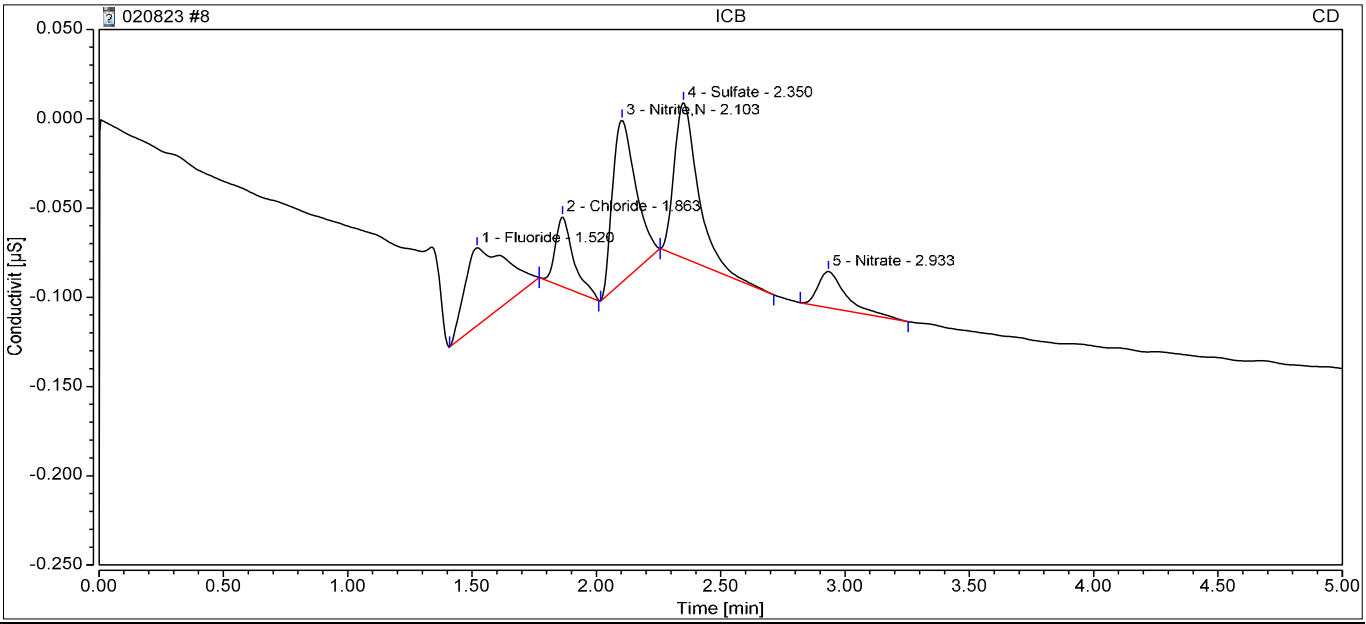

**Integration Results**

| No. | Retention min | Peak Name | Peak Type | Area µS*min | Amount ppm | Concentration ppm | Dilution |
|---|---|---|---|---|---|---|---|
| 1 | 1.52 | Fluoride | BMB | 1.076 | 4.1460 | 4.1460 | 1.0000 |
| 2 | 1.86 | Chloride | BMB | 3.476 | 20.2807 | 20.2807 | 1.0000 |
| 3 | 2.10 | Nitrite,N | BMB | 1.374 | 4.0608 | 4.0608 | 1.0000 |
| 4 | 2.34 | Sulfate | BMB | 2.342 | 20.8027 | 20.8027 | 1.0000 |
| 5 | 2.59 | Bromide | BMB | 0.218 | 3.8222 | 3.8222 | 1.0000 |
| 6 | 2.91 | Nitrate | BMB | 1.407 | 4.0267 | 4.0267 | 1.0000 |
| 7 | 3.09 | Chlorate | BMB | 0.023 | 4.2714 | 4.2714 | 1.0000 |
| n.a. | n.a. | Phosphate | n.a. | n.a. | n.a. | n.a. | 1.0000 |
| **Total:** | | | **0.000** | **9.916** | | **61.41** | |

*8 ICB*

| | | | |
|---|---|---|---|
| *Sample Name:* | **ICB** | *Injection Volume:* | **5.00** |
| *Vial Number:* | **BA8** | *Channel:* | **CD** |
| *Sample Type:* | **Unknown** | *Wavelength:* | **n.a.** |
| *Control Program:* | **Anions Program ISO37mM 150mm short 0.4 Constant current** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **Anions Processing Method ISO** | *Dilution Factor:* | **1.0000** |
| *Recording Time:* | **01/23/2023 15:17** | *Sample Weight:* | **1.0000** |

Run Time:

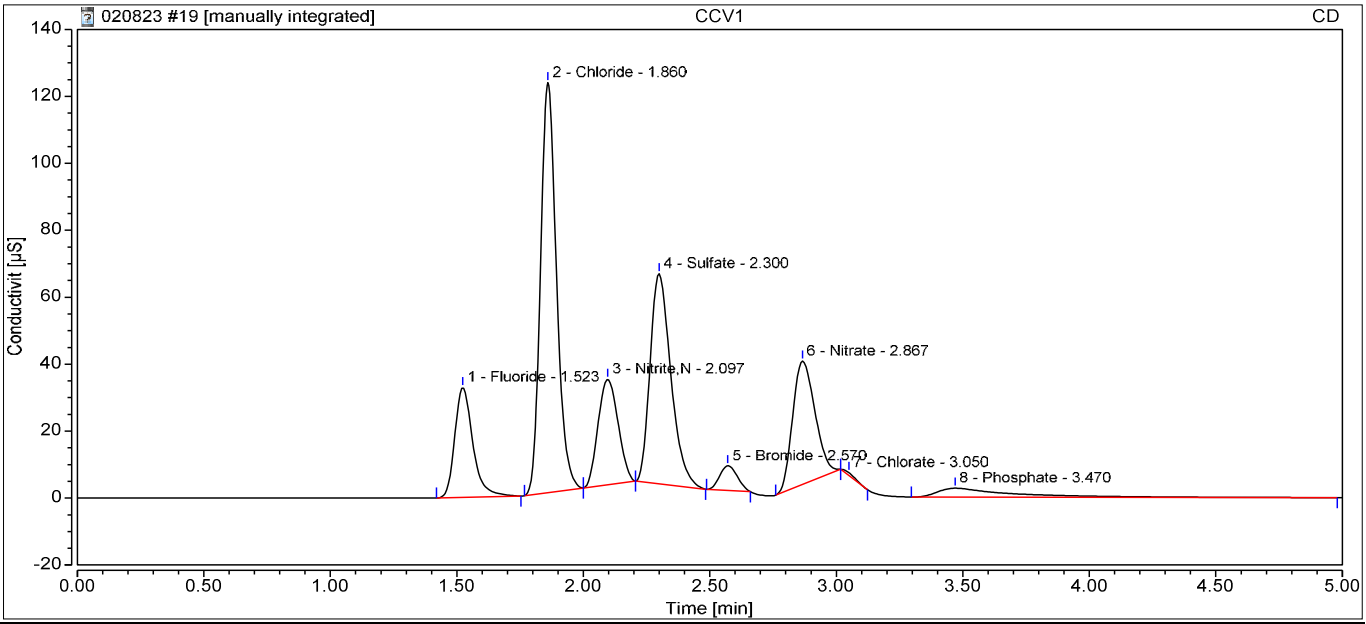



**Integration Results**

| No. | Retention min | Peak Name | Peak Type | Area µS*min | Amount ppm | Concentration ppm | Dilution |
|---|---|---|---|---|---|---|---|
| 1 | 1.52 | Fluoride | BMB | 0.008 | 0.0297 | 0.0297 | 1.0000 |
| 2 | 1.86 | Chloride | BMB | 0.003 | 0.0390 | 0.0390 | 1.0000 |
| 3 | 2.10 | Nitrite,N | BMB | 0.010 | 0.0268 | 0.0268 | 1.0000 |
| 4 | 2.35 | Sulfate | BMB | 0.010 | 0.0714 | 0.0714 | 1.0000 |
| n.a. | n.a. | Bromide | n.a. | n.a. | n.a. | n.a. | 1.0000 |
| 5 | 2.93 | Nitrate | BMB | 0.003 | n.a. | n.a. | 1.0000 |
| n.a. | n.a. | Chlorate | n.a. | n.a. | n.a. | n.a. | 1.0000 |
| n.a. | n.a. | Phosphate | n.a. | n.a. | n.a. | n.a. | 1.0000 |
| **Total:** | | | **0.000** | **0.034** | | **0.17** | |

| | | | |
|---|---|---|---|
| *19 CCV1* | | | |
| *Sample Name:* | **CCV1** | *Injection Volume:* | **5.00** |
| *Vial Number:* | **R3** | *Channel:* | **CD** |
| *Sample Type:* | **Unknown** | *Wavelength:* | **n.a.** |
| *Control Program:* | **Anions Program ISO37mM 150mm short 0.4 Constant current** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **Anions Processing Method ISO** | *Dilution Factor:* | **1.0000** |
| *Recording Time:* | **02/08/2023 10:03** | *Sample Weight:* | **1.0000** |

Run Time:



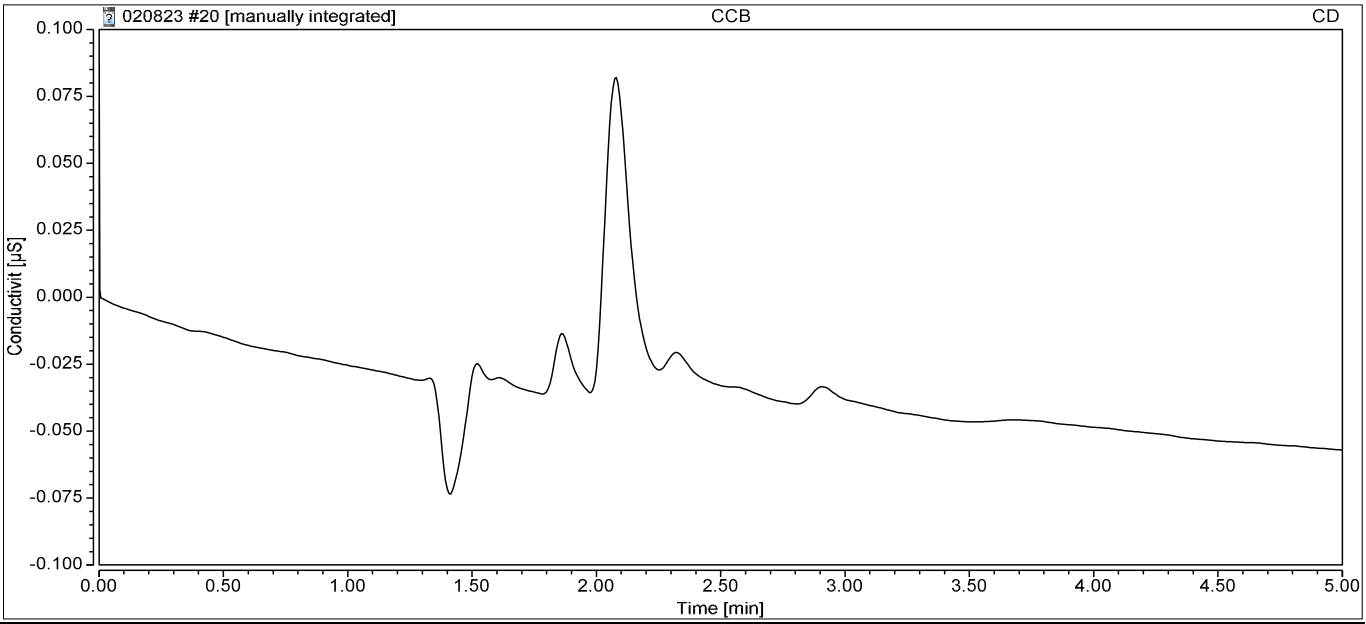

**Integration Results**

| No. | Retention min | Peak Name | Peak Type | Area µS*min | Amount ppm | Concentration ppm | Dilution |
|---|---|---|---|---|---|---|---|
| 1 | 1.52 | Fluoride | BMB | 2.727 | 10.5131 | 10.5131 | 1.0000 |
| 2 | 1.86 | Chloride | BMB | 8.954 | 52.2122 | 52.2122 | 1.0000 |
| 3 | 2.10 | Nitrite,N | BMB | 2.885 | 9.4089 | 9.4089 | 1.0000 |
| 4 | 2.30 | Sulfate | BMB | 5.980 | 53.1488 | 53.1488 | 1.0000 |
| 5 | 2.57 | Bromide | BMB* | 0.599 | 10.3924 | 10.3924 | 1.0000 |
| 6 | 2.87 | Nitrate | BMB | 3.760 | 10.8054 | 10.8054 | 1.0000 |
| 7 | 3.05 | Chlorate | BMB | 0.047 | 9.9411 | 9.9411 | 1.0000 |
| 8 | 3.47 | Phosphate | BMB | 0.881 | 10.7318 | 10.7318 | 1.0000 |
| **Total:** | | | **0.000** | **25.833** | | **167.15** | |

*20 CCB*

| | | | |
|---|---|---|---|
| *Sample Name:* | **CCB** | *Injection Volume:* | **5.00** |
| *Vial Number:* | **R7** | *Channel:* | **CD** |
| *Sample Type:* | **Unknown** | *Wavelength:* | **n.a.** |
| *Control Program:* | **Anions Program ISO37mM 150mm short 0.4 Constant current** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **Anions Processing Method ISO** | *Dilution Factor:* | **1.0000** |
| *Recording Time:* | **02/08/2023 10:08** | *Sample Weight:* | **1.0000** |

Run Time:



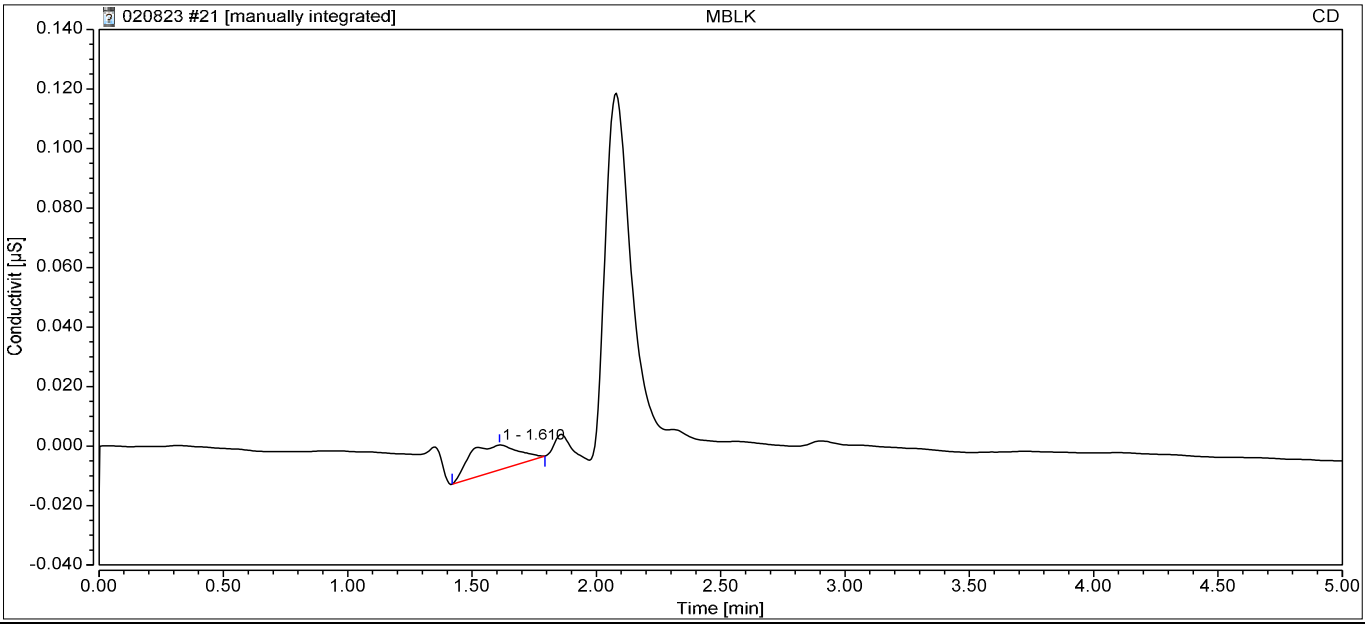

**Integration Results**

| No. | Retention min | Peak Name | Peak Type | Area µS*min | Amount ppm | Concentration ppm | Dilution |
|---|---|---|---|---|---|---|---|
| n.a. | n.a. | Fluoride | n.a. | n.a. | n.a. | n.a. | 1.0000 |
| n.a. | n.a. | Chloride | n.a. | n.a. | n.a. | n.a. | 1.0000 |
| n.a. | n.a. | Nitrite,N | n.a. | n.a. | n.a. | n.a. | 1.0000 |
| n.a. | n.a. | Sulfate | n.a. | n.a. | n.a. | n.a. | 1.0000 |
| n.a. | n.a. | Bromide | n.a. | n.a. | n.a. | n.a. | 1.0000 |
| n.a. | n.a. | Nitrate | n.a. | n.a. | n.a. | n.a. | 1.0000 |
| n.a. | n.a. | Chlorate | n.a. | n.a. | n.a. | n.a. | 1.0000 |
| n.a. | n.a. | Phosphate | n.a. | n.a. | n.a. | n.a. | 1.0000 |
| **Total:** | | | **0.000** | **0.000** | | **0.00** | |

*21 MBLK*

| | | | |
|---|---|---|---|
| *Sample Name:* | **MBLK** | *Injection Volume:* | **5.00** |
| *Vial Number:* | **R5** | *Channel:* | **CD** |
| *Sample Type:* | **Unknown** | *Wavelength:* | **n.a.** |
| *Control Program:* | **Anions Program ISO37mM 150mm short 0.4 Constant current** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **Anions Processing Method ISO** | *Dilution Factor:* | **1.0000** |
| *Recording Time:* | **02/08/2023 10:20** | *Sample Weight:* | **1.0000** |

Run Time:



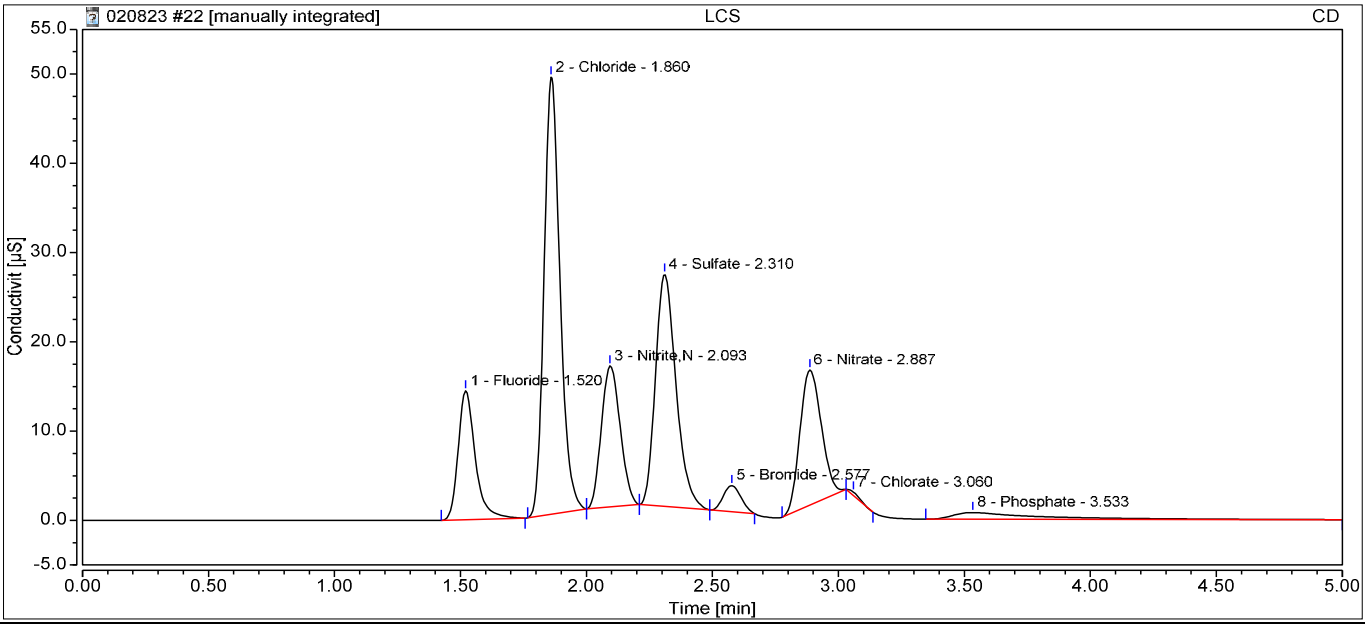

**Integration Results**

| No. | Retention min | Peak Name | Peak Type | Area µS*min | Amount ppm | Concentration ppm | Dilution |
|---|---|---|---|---|---|---|---|
| n.a. | n.a. | Fluoride | n.a. | n.a. | n.a. | n.a. | 1.0000 |
| n.a. | n.a. | Chloride | n.a. | n.a. | n.a. | n.a. | 1.0000 |
| n.a. | n.a. | Nitrite,N | n.a. | n.a. | n.a. | n.a. | 1.0000 |
| n.a. | n.a. | Sulfate | n.a. | n.a. | n.a. | n.a. | 1.0000 |
| n.a. | n.a. | Bromide | n.a. | n.a. | n.a. | n.a. | 1.0000 |
| n.a. | n.a. | Nitrate | n.a. | n.a. | n.a. | n.a. | 1.0000 |
| n.a. | n.a. | Chlorate | n.a. | n.a. | n.a. | n.a. | 1.0000 |
| n.a. | n.a. | Phosphate | n.a. | n.a. | n.a. | n.a. | 1.0000 |
| **Total:** | | | **0.000** | **0.000** | | **0.00** | |

22 LCS

| | | | |
|---|---|---|---|
| *Sample Name:* | **LCS** | *Injection Volume:* | **5.00** |
| *Vial Number:* | **R2** | *Channel:* | **CD** |
| *Sample Type:* | **Unknown** | *Wavelength:* | **n.a.** |
| *Control Program:* | **Anions Program ISO37mM 150mm short 0.4 Constant current** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **Anions Processing Method ISO** | *Dilution Factor:* | **1.0000** |
| *Recording Time:* | **02/08/2023 10:26** | *Sample Weight:* | **1.0000** |

Run Time:



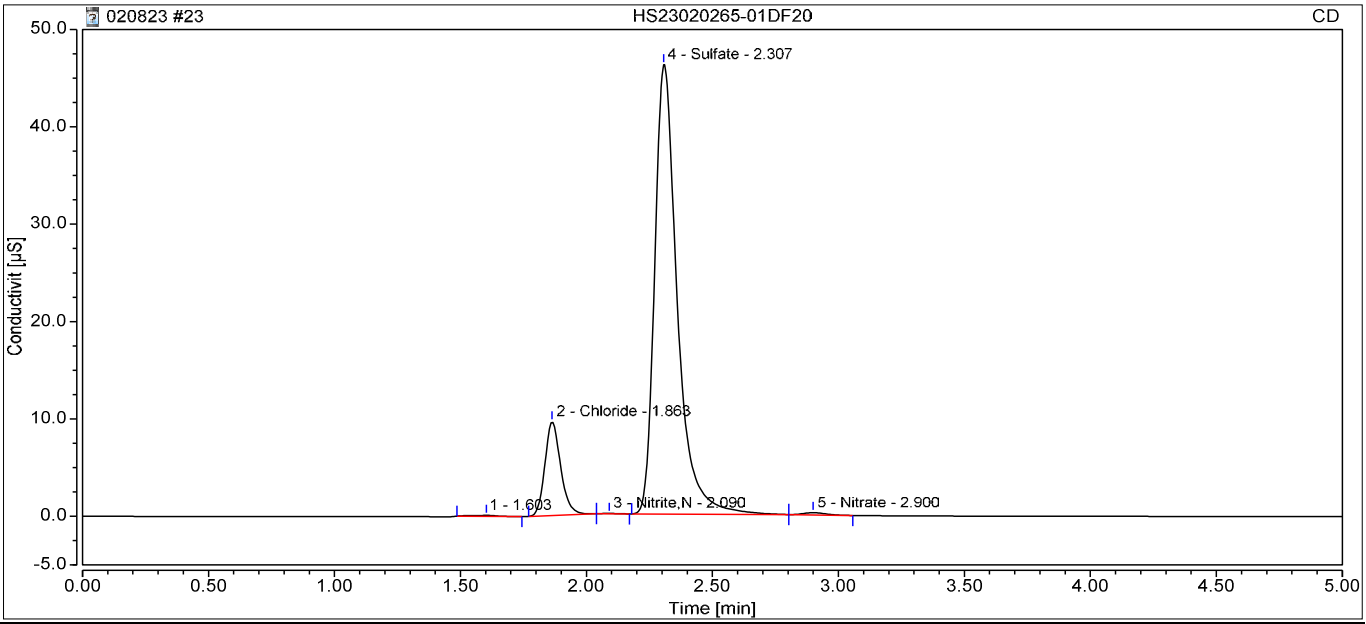

**Integration Results**

| No. | Retention min | Peak Name | Peak Type | Area µS*min | Amount ppm | Concentration ppm | Dilution |
|---|---|---|---|---|---|---|---|
| 1 | 1.52 | Fluoride | BMB | 1.139 | 4.3890 | 4.3890 | 1.0000 |
| 2 | 1.86 | Chloride | BMB | 3.587 | 20.9280 | 20.9280 | 1.0000 |
| 3 | 2.09 | Nitrite,N | BMB | 1.366 | 4.0350 | 4.0350 | 1.0000 |
| 4 | 2.31 | Sulfate | BMb* | 2.460 | 21.8515 | 21.8515 | 1.0000 |
| 5 | 2.58 | Bromide | bMB* | 0.238 | 4.1592 | 4.1592 | 1.0000 |
| 6 | 2.89 | Nitrate | BMB | 1.485 | 4.2497 | 4.2497 | 1.0000 |
| 7 | 3.06 | Chlorate | BMB | 0.019 | 3.5013 | 3.5013 | 1.0000 |
| 8 | 3.53 | Phosphate | BMB | 0.298 | 6.1682 | 6.1682 | 1.0000 |
| **Total:** | | | **0.000** | **10.591** | | **69.28** | |

*23 HS23020265-01DF20*

| | | | |
|---|---|---|---|
| *Sample Name:* | **HS23020265-01DF20** | *Injection Volume:* | **5.00** |
| *Vial Number:* | **RA5** | *Channel:* | **CD** |
| *Sample Type:* | **Unknown** | *Wavelength:* | **n.a.** |
| *Control Program:* | **Anions Program ISO37mM 150mm short 0.4 Constant current** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **Anions Processing Method ISO** | *Dilution Factor:* | **20.0000** |
| *Recording Time:* | **02/08/2023 10:37** | *Sample Weight:* | **1.0000** |

Run Time:



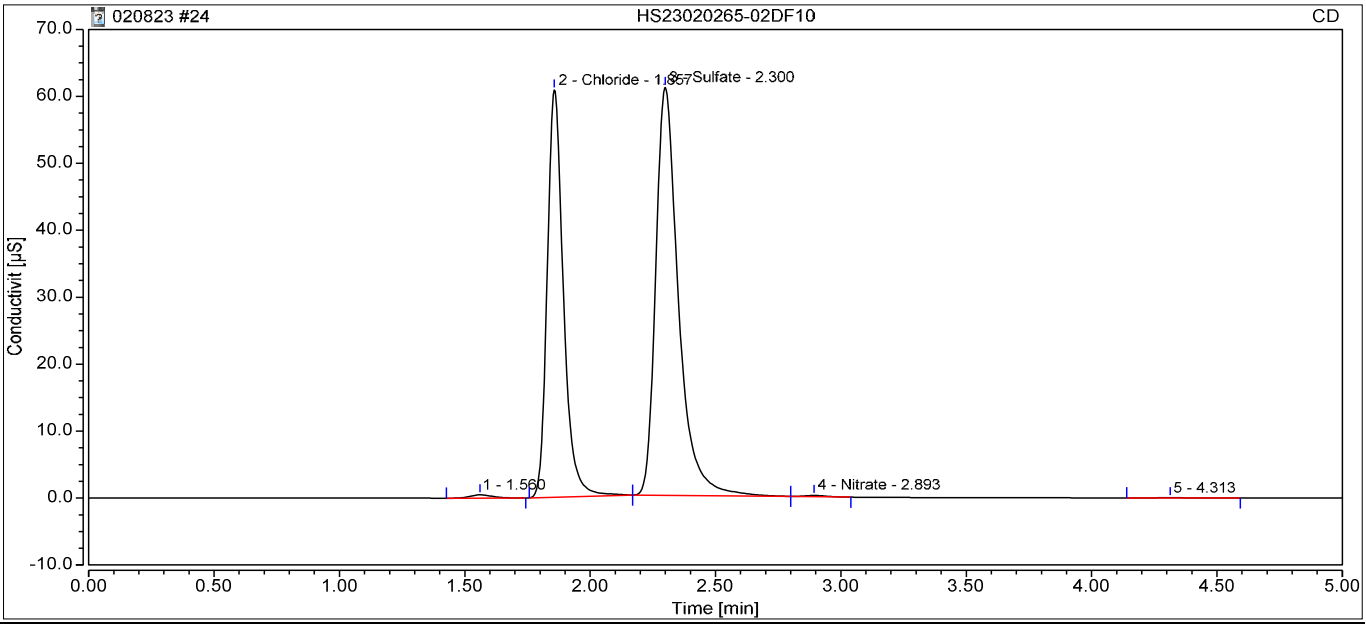

**Integration Results**

| No. | Retention min | Peak Name | Peak Type | Area µS*min | Amount ppm | Concentration ppm | Dilution |
|---|---|---|---|---|---|---|---|
| n.a. | n.a. | Fluoride | n.a. | n.a. | n.a. | n.a. | 20.0000 |
| 2 | 1.86 | Chloride | BMB | 0.696 | 4.0767 | 81.5349 | 20.0000 |
| 3 | 2.09 | Nitrite,N | BMB | 0.002 | 0.0055 | 0.1105 | 20.0000 |
| 4 | 2.31 | Sulfate | BMB | 4.789 | 42.5629 | 851.2581 | 20.0000 |
| n.a. | n.a. | Bromide | n.a. | n.a. | n.a. | n.a. | 20.0000 |
| 5 | 2.90 | Nitrate | BMB | 0.022 | 0.0364 | 0.7276 | 20.0000 |
| n.a. | n.a. | Chlorate | n.a. | n.a. | n.a. | n.a. | 20.0000 |
| n.a. | n.a. | Phosphate | n.a. | n.a. | n.a. | n.a. | 20.0000 |
| **Total:** | | | **0.000** | **5.510** | | **933.63** | |

*24 HS23020265-02DF10*

| | | | |
|---|---|---|---|
| *Sample Name:* | **HS23020265-02DF10** | *Injection Volume:* | **5.00** |
| *Vial Number:* | **RA6** | *Channel:* | **CD** |
| *Sample Type:* | **Unknown** | *Wavelength:* | **n.a.** |
| *Control Program:* | **Anions Program ISO37mM 150mm short 0.4 Constant current** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **Anions Processing Method ISO** | *Dilution Factor:* | **10.0000** |
| *Recording Time:* | **02/08/2023 10:43** | *Sample Weight:* | **1.0000** |

Run Time:



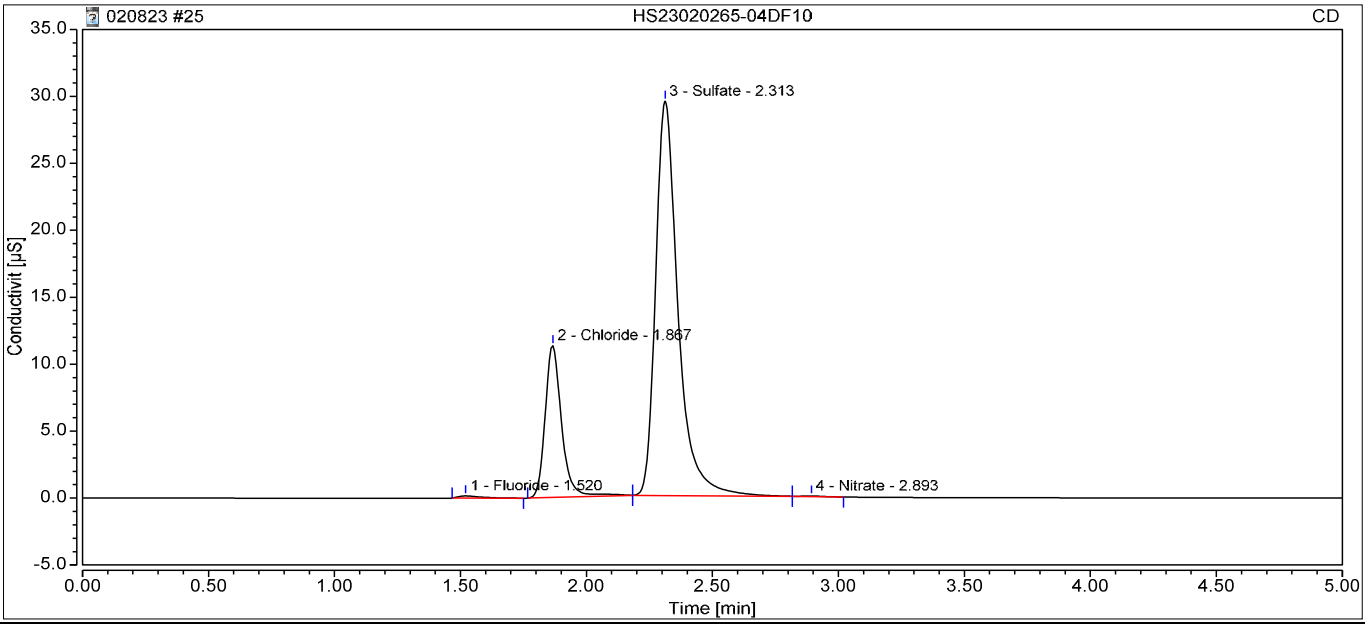

**Integration Results**

| No. | Retention min | Peak Name | Peak Type | Area µS*min | Amount ppm | Concentration ppm | Dilution |
|---|---|---|---|---|---|---|---|
| n.a. | n.a. | Fluoride | n.a. | n.a. | n.a. | n.a. | 10.0000 |
| 2 | 1.86 | Chloride | BMB | 4.565 | 26.6286 | 266.2858 | 10.0000 |
| n.a. | n.a. | Nitrite,N | n.a. | n.a. | n.a. | n.a. | 10.0000 |
| 3 | 2.30 | Sulfate | BMB | 6.397 | 56.8568 | 568.5680 | 10.0000 |
| n.a. | n.a. | Bromide | n.a. | n.a. | n.a. | n.a. | 10.0000 |
| 4 | 2.89 | Nitrate | BMB | 0.017 | 0.0205 | 0.2046 | 10.0000 |
| n.a. | n.a. | Chlorate | n.a. | n.a. | n.a. | n.a. | 10.0000 |
| n.a. | n.a. | Phosphate | n.a. | n.a. | n.a. | n.a. | 10.0000 |
| **Total:** | | | **0.000** | **10.979** | | **835.06** | |

*25 HS23020265-04DF10*

| | | | |
|---|---|---|---|
| *Sample Name:* | **HS23020265-04DF10** | *Injection Volume:* | **5.00** |
| *Vial Number:* | **RA7** | *Channel:* | **CD** |
| *Sample Type:* | **Unknown** | *Wavelength:* | **n.a.** |
| *Control Program:* | **Anions Program ISO37mM 150mm short 0.4 Constant current** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **Anions Processing Method ISO** | *Dilution Factor:* | **10.0000** |
| *Recording Time:* | **02/08/2023 10:49** | *Sample Weight:* | **1.0000** |

Run Time:



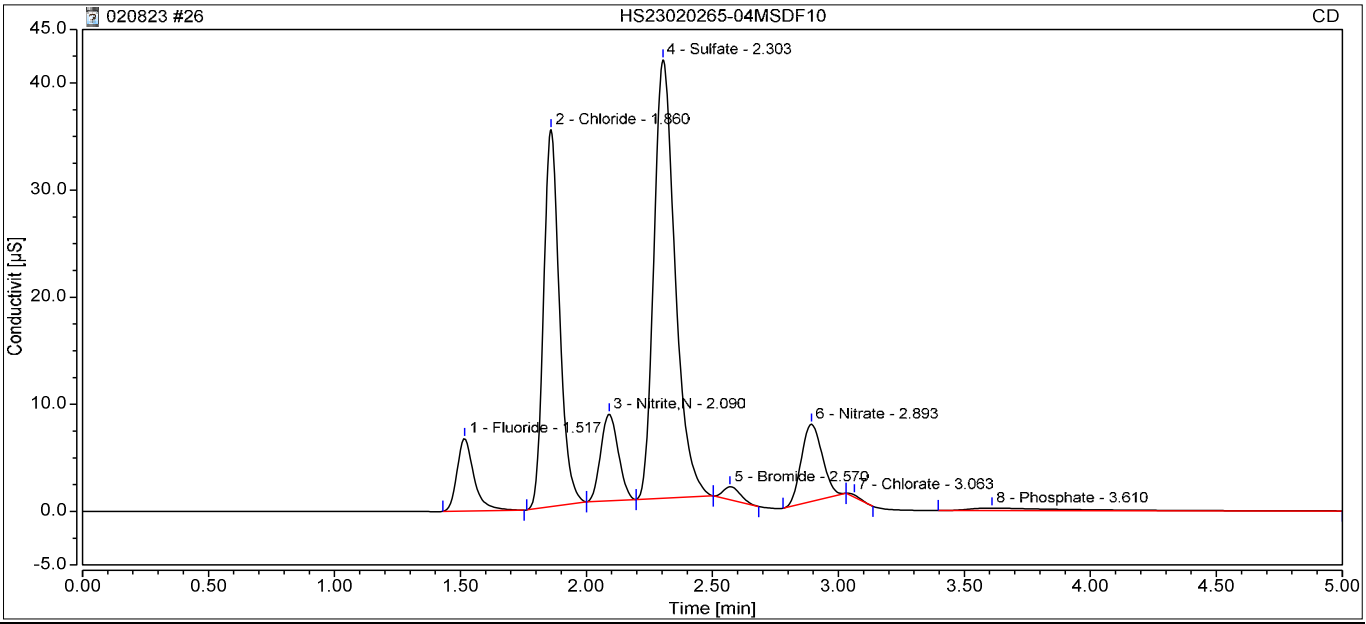

**Integration Results**

| No. | Retention min | Peak Name | Peak Type | Area µS*min | Amount ppm | Concentration ppm | Dilution |
|---|---|---|---|---|---|---|---|
| 1 | 1.52 | Fluoride | BMB | 0.016 | 0.0592 | 0.5924 | 10.0000 |
| 2 | 1.87 | Chloride | BMB | 0.860 | 5.0300 | 50.3004 | 10.0000 |
| n.a. | n.a. | Nitrite,N | n.a. | n.a. | n.a. | n.a. | 10.0000 |
| 3 | 2.31 | Sulfate | BMB | 3.034 | 26.9548 | 269.5482 | 10.0000 |
| n.a. | n.a. | Bromide | n.a. | n.a. | n.a. | n.a. | 10.0000 |
| 4 | 2.89 | Nitrate | BMB | 0.004 | n.a. | n.a. | 10.0000 |
| n.a. | n.a. | Chlorate | n.a. | n.a. | n.a. | n.a. | 10.0000 |
| n.a. | n.a. | Phosphate | n.a. | n.a. | n.a. | n.a. | 10.0000 |
| **Total:** | | | **0.000** | **3.913** | | **320.44** | |

*26 HS23020265-04MSDF10*

| | | | |
|---|---|---|---|
| *Sample Name:* | **HS23020265-04MSDF10** | *Injection Volume:* | **5.00** |
| *Vial Number:* | **RA8** | *Channel:* | **CD** |
| *Sample Type:* | **Unknown** | *Wavelength:* | **n.a.** |
| *Control Program:* | **Anions Program ISO37mM 150mm short 0.4 Constant current** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **Anions Processing Method ISO** | *Dilution Factor:* | **10.0000** |
| *Recording Time:* | **02/08/2023 10:55** | *Sample Weight:* | **1.0000** |

Run Time:



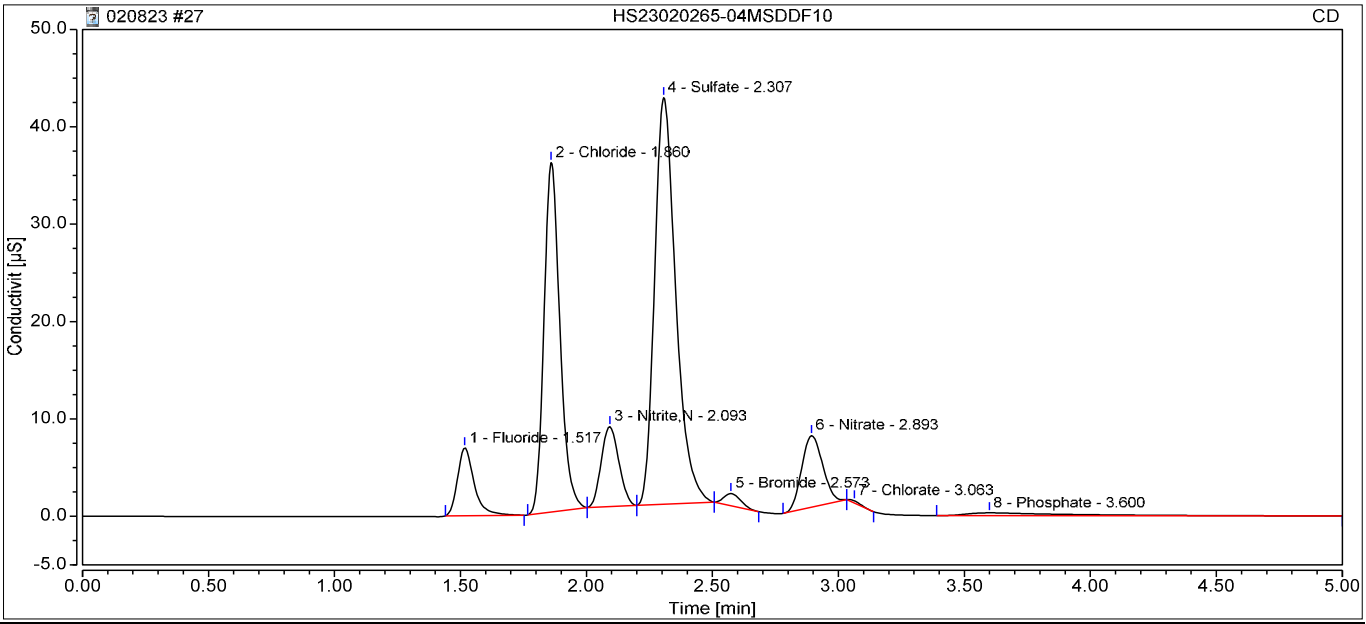

**Integration Results**

| No. | Retention min | Peak Name | Peak Type | Area µS*min | Amount ppm | Concentration ppm | Dilution |
|---|---|---|---|---|---|---|---|
| 1 | 1.52 | Fluoride | BMB | 0.529 | 2.0394 | 20.3937 | 10.0000 |
| 2 | 1.86 | Chloride | BMB | 2.578 | 15.0478 | 150.4780 | 10.0000 |
| 3 | 2.09 | Nitrite,N | BMB | 0.653 | 1.8574 | 18.5736 | 10.0000 |
| 4 | 2.30 | Sulfate | BMB | 4.011 | 35.6437 | 356.4367 | 10.0000 |
| 5 | 2.57 | Bromide | BMB | 0.096 | 1.7127 | 17.1275 | 10.0000 |
| 6 | 2.89 | Nitrate | BMB | 0.699 | 1.9855 | 19.8554 | 10.0000 |
| 7 | 3.06 | Chlorate | BMB | 0.011 | 1.9839 | 19.8389 | 10.0000 |
| 8 | 3.61 | Phosphate | BMB | 0.115 | 4.7386 | 47.3858 | 10.0000 |
| **Total:** | | | **0.000** | **8.693** | | **650.09** | |

27 *HS23020265-04MSDDF10*

| | | | |
|---|---|---|---|
| *Sample Name:* | **HS23020265-04MSDDF10** | *Injection Volume:* | **5.00** |
| *Vial Number:* | **RB1** | *Channel:* | **CD** |
| *Sample Type:* | **Unknown** | *Wavelength:* | **n.a.** |
| *Control Program:* | **Anions Program ISO37mM 150mm short 0.4 Constant current** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **Anions Processing Method ISO** | *Dilution Factor:* | **10.0000** |
| *Recording Time:* | **02/08/2023 11:00** | *Sample Weight:* | **1.0000** |

Run Time:



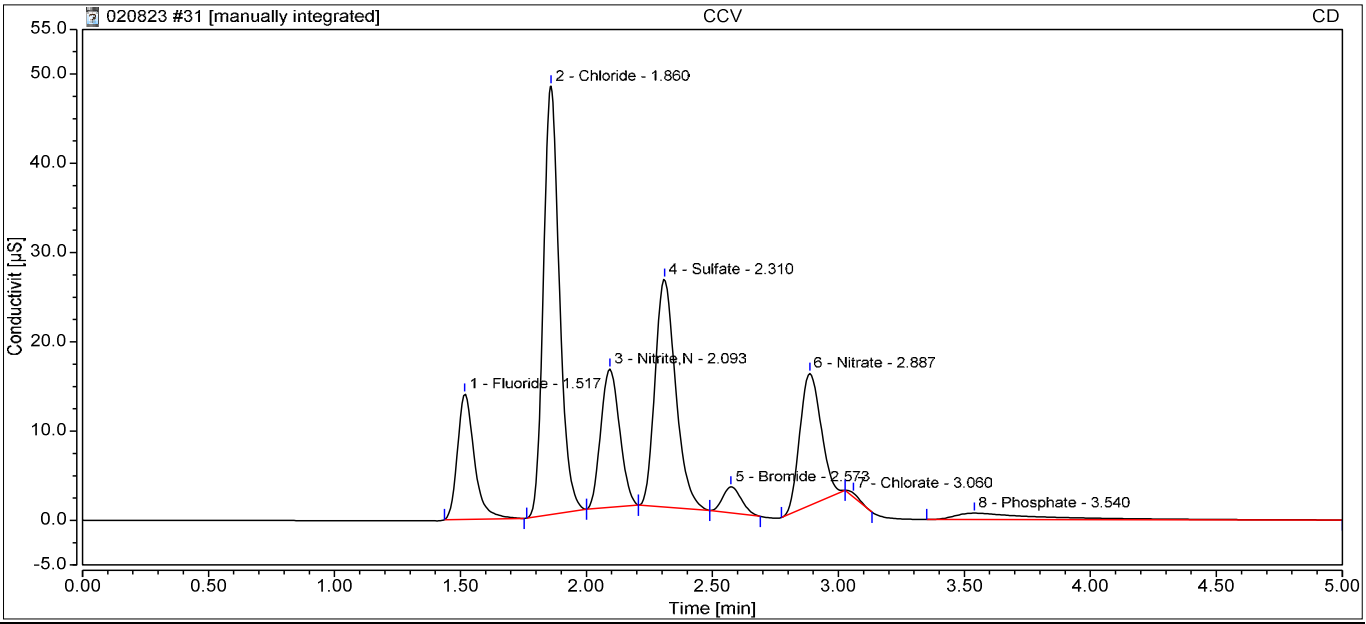

**Integration Results**

| No. | Retention min | Peak Name | Peak Type | Area µS*min | Amount ppm | Concentration ppm | Dilution |
|---|---|---|---|---|---|---|---|
| 1 | 1.52 | Fluoride | BMB | 0.534 | 2.0588 | 20.5876 | 10.0000 |
| 2 | 1.86 | Chloride | BMB | 2.626 | 15.3279 | 153.2794 | 10.0000 |
| 3 | 2.09 | Nitrite,N | BMB | 0.664 | 1.8915 | 18.9149 | 10.0000 |
| 4 | 2.31 | Sulfate | BMB | 4.081 | 36.2634 | 362.6339 | 10.0000 |
| 5 | 2.57 | Bromide | BMB | 0.098 | 1.7378 | 17.3777 | 10.0000 |
| 6 | 2.89 | Nitrate | BMB | 0.710 | 2.0165 | 20.1646 | 10.0000 |
| 7 | 3.06 | Chlorate | BMB | 0.010 | 1.7887 | 17.8867 | 10.0000 |
| 8 | 3.60 | Phosphate | BMB | 0.138 | 4.9138 | 49.1383 | 10.0000 |
| **Total:** | | | **0.000** | **8.861** | | **659.98** | |

*31 CCV*

| | | | |
|---|---|---|---|
| *Sample Name:* | **CCV** | *Injection Volume:* | **5.00** |
| *Vial Number:* | **R1** | *Channel:* | **CD** |
| *Sample Type:* | **Unknown** | *Wavelength:* | **n.a.** |
| *Control Program:* | **Anions Program ISO37mM 150mm short 0.4 Constant current** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **Anions Processing Method ISO** | *Dilution Factor:* | **1.0000** |
| *Recording Time:* | **02/08/2023 11:35** | *Sample Weight:* | **1.0000** |

Run Time:



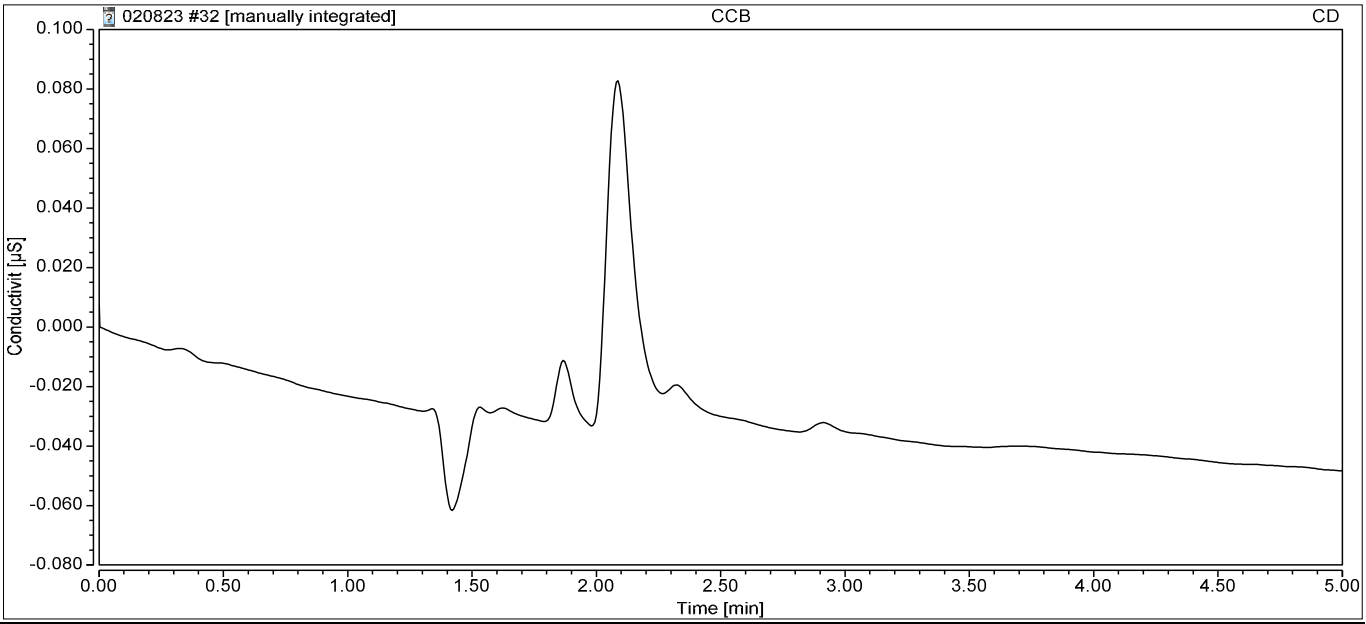

**Integration Results**

| No. | Retention min | Peak Name | Peak Type | Area µS*min | Amount ppm | Concentration ppm | Dilution |
|---|---|---|---|---|---|---|---|
| 1 | 1.52 | Fluoride | BMB | 1.092 | 4.2073 | 4.2073 | 1.0000 |
| 2 | 1.86 | Chloride | BMB | 3.528 | 20.5819 | 20.5819 | 1.0000 |
| 3 | 2.09 | Nitrite,N | BMB | 1.341 | 3.9566 | 3.9566 | 1.0000 |
| 4 | 2.31 | Sulfate | BMb* | 2.424 | 21.5310 | 21.5310 | 1.0000 |
| 5 | 2.57 | Bromide | bMB* | 0.250 | 4.3739 | 4.3739 | 1.0000 |
| 6 | 2.89 | Nitrate | BMB | 1.452 | 4.1543 | 4.1543 | 1.0000 |
| 7 | 3.06 | Chlorate | BMB | 0.022 | 4.1062 | 4.1062 | 1.0000 |
| 8 | 3.54 | Phosphate | BMB | 0.298 | 6.1682 | 6.1682 | 1.0000 |
| **Total:** | | | **0.000** | **10.406** | | **69.08** | |

*32 CCB*

| | | | |
|---|---|---|---|
| *Sample Name:* | **CCB** | *Injection Volume:* | **5.00** |
| *Vial Number:* | **R4** | *Channel:* | **CD** |
| *Sample Type:* | **Unknown** | *Wavelength:* | **n.a.** |
| *Control Program:* | **Anions Program ISO37mM 150mm short 0.4 Constant current** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **Anions Processing Method ISO** | *Dilution Factor:* | **1.0000** |
| *Recording Time:* | **02/08/2023 11:41** | *Sample Weight:* | **1.0000** |

Run Time:



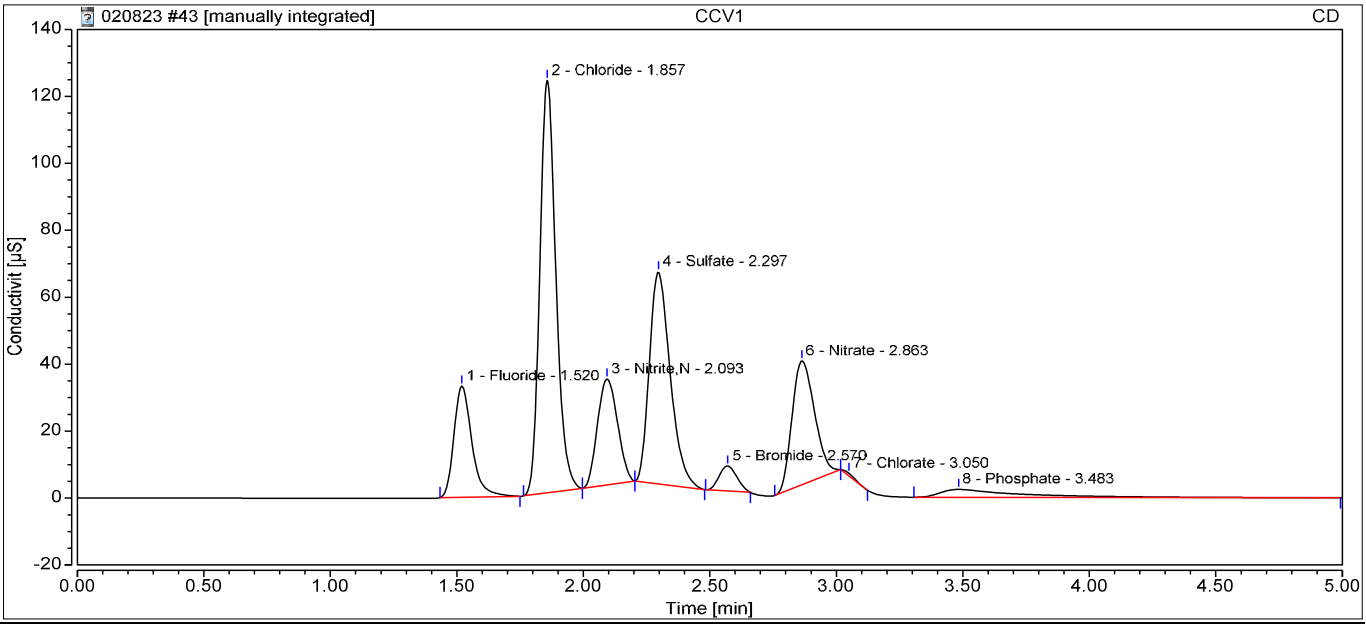

**Integration Results**

| No. | Retention min | Peak Name | Peak Type | Area µS*min | Amount ppm | Concentration ppm | Dilution |
|---|---|---|---|---|---|---|---|
| n.a. | n.a. | Fluoride | n.a. | n.a. | n.a. | n.a. | 1.0000 |
| n.a. | n.a. | Chloride | n.a. | n.a. | n.a. | n.a. | 1.0000 |
| n.a. | n.a. | Nitrite,N | n.a. | n.a. | n.a. | n.a. | 1.0000 |
| n.a. | n.a. | Sulfate | n.a. | n.a. | n.a. | n.a. | 1.0000 |
| n.a. | n.a. | Bromide | n.a. | n.a. | n.a. | n.a. | 1.0000 |
| n.a. | n.a. | Nitrate | n.a. | n.a. | n.a. | n.a. | 1.0000 |
| n.a. | n.a. | Chlorate | n.a. | n.a. | n.a. | n.a. | 1.0000 |
| n.a. | n.a. | Phosphate | n.a. | n.a. | n.a. | n.a. | 1.0000 |
| **Total:** | | | **0.000** | **0.000** | | **0.00** | |

*43 CCV1*

| | | | |
|---|---|---|---|
| *Sample Name:* | **CCV1** | *Injection Volume:* | **5.00** |
| *Vial Number:* | **R3** | *Channel:* | **CD** |
| *Sample Type:* | **Unknown** | *Wavelength:* | **n.a.** |
| *Control Program:* | **Anions Program ISO37mM 150mm short 0.4 Constant current** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **Anions Processing Method ISO** | *Dilution Factor:* | **1.0000** |
| *Recording Time:* | **02/08/2023 12:56** | *Sample Weight:* | **1.0000** |

Run Time:



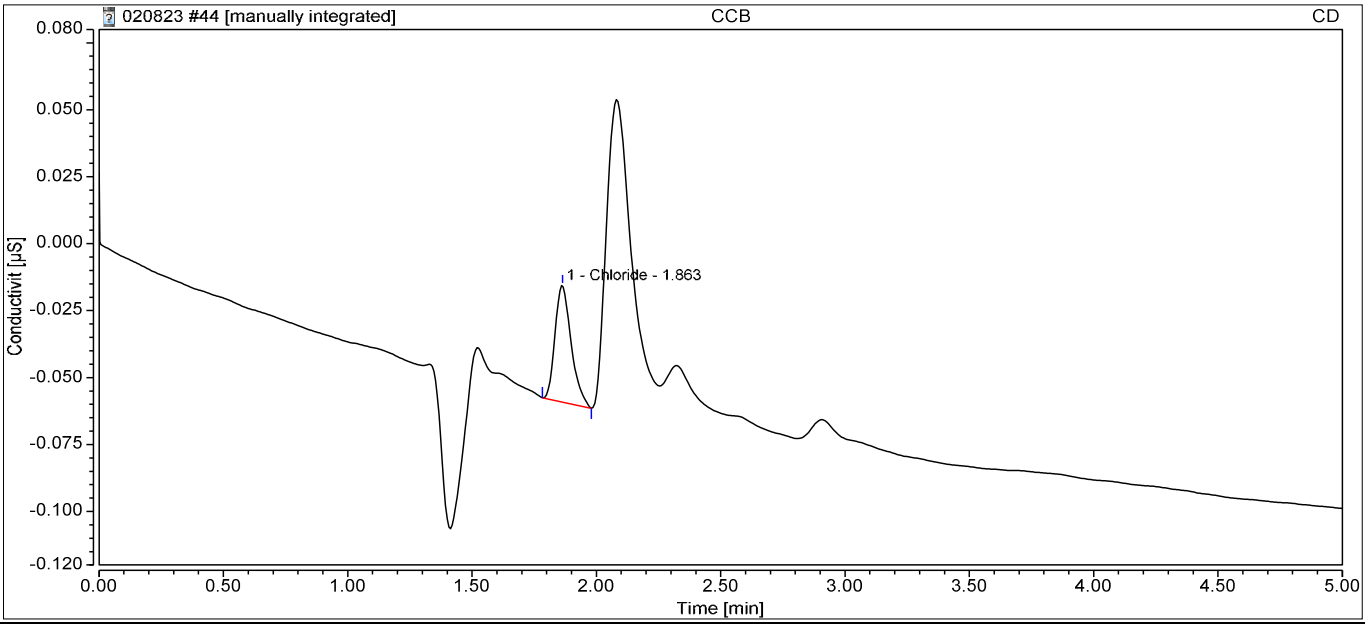

**Integration Results**

| No. | Retention min | Peak Name | Peak Type | Area µS*min | Amount ppm | Concentration ppm | Dilution |
|---|---|---|---|---|---|---|---|
| 1 | 1.52 | Fluoride | BMB | 2.728 | 10.5161 | 10.5161 | 1.0000 |
| 2 | 1.86 | Chloride | BMB | 9.031 | 52.6573 | 52.6573 | 1.0000 |
| 3 | 2.09 | Nitrite,N | BMB | 2.900 | 9.4702 | 9.4702 | 1.0000 |
| 4 | 2.30 | Sulfate | BMB | 6.048 | 53.7517 | 53.7517 | 1.0000 |
| 5 | 2.57 | Bromide | BMB* | 0.610 | 10.5976 | 10.5976 | 1.0000 |
| 6 | 2.86 | Nitrate | BMB | 3.801 | 10.9227 | 10.9227 | 1.0000 |
| 7 | 3.05 | Chlorate | BMB | 0.039 | 7.8842 | 7.8842 | 1.0000 |
| 8 | 3.48 | Phosphate | BMB | 0.871 | 10.6532 | 10.6532 | 1.0000 |
| **Total:** | | | **0.000** | **26.028** | | **166.45** | |

*44 CCB*

| | | | |
|---|---|---|---|
| *Sample Name:* | **CCB** | *Injection Volume:* | **5.00** |
| *Vial Number:* | **R7** | *Channel:* | **CD** |
| *Sample Type:* | **Unknown** | *Wavelength:* | **n.a.** |
| *Control Program:* | **Anions Program ISO37mM 150mm short 0.4 Constant current** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **Anions Processing Method ISO** | *Dilution Factor:* | **1.0000** |
| *Recording Time:* | **02/08/2023 13:02** | *Sample Weight:* | **1.0000** |

Run Time:



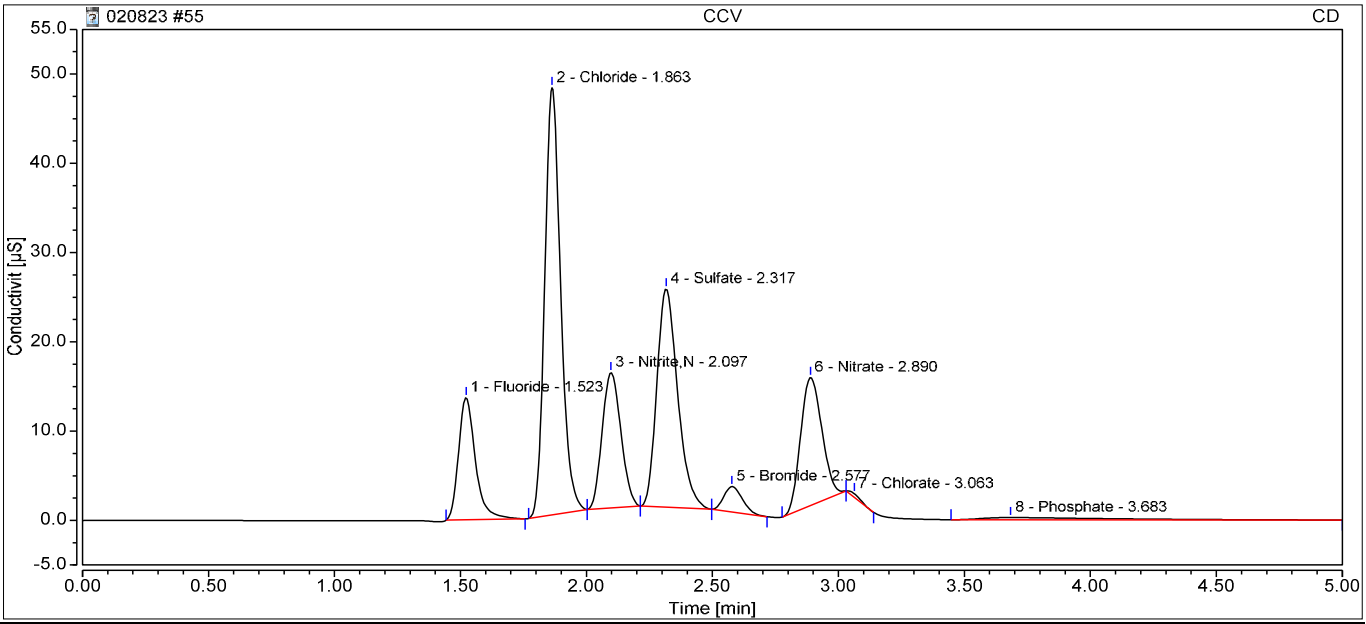

**Integration Results**

| No. | Retention min | Peak Name | Peak Type | Area µS*min | Amount ppm | Concentration ppm | Dilution |
|---|---|---|---|---|---|---|---|
| n.a. | n.a. | Fluoride | n.a. | n.a. | n.a. | n.a. | 1.0000 |
| 1 | 1.86 | Chloride | BMB | 0.003 | 0.0389 | 0.0389 | 1.0000 |
| n.a. | n.a. | Nitrite,N | n.a. | n.a. | n.a. | n.a. | 1.0000 |
| n.a. | n.a. | Sulfate | n.a. | n.a. | n.a. | n.a. | 1.0000 |
| n.a. | n.a. | Bromide | n.a. | n.a. | n.a. | n.a. | 1.0000 |
| n.a. | n.a. | Nitrate | n.a. | n.a. | n.a. | n.a. | 1.0000 |
| n.a. | n.a. | Chlorate | n.a. | n.a. | n.a. | n.a. | 1.0000 |
| n.a. | n.a. | Phosphate | n.a. | n.a. | n.a. | n.a. | 1.0000 |
| **Total:** | | | **0.000** | **0.003** | | **0.04** | |

*55 CCV*

| | | | |
|---|---|---|---|
| *Sample Name:* | **CCV** | *Injection Volume:* | **5.00** |
| *Vial Number:* | **R1** | *Channel:* | **CD** |
| *Sample Type:* | **Unknown** | *Wavelength:* | **n.a.** |
| *Control Program:* | **Anions Program ISO37mM 150mm short 0.4 Constant current** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **Anions Processing Method ISO** | *Dilution Factor:* | **1.0000** |
| *Recording Time:* | **02/08/2023 14:29** | *Sample Weight:* | **1.0000** |

Run Time:



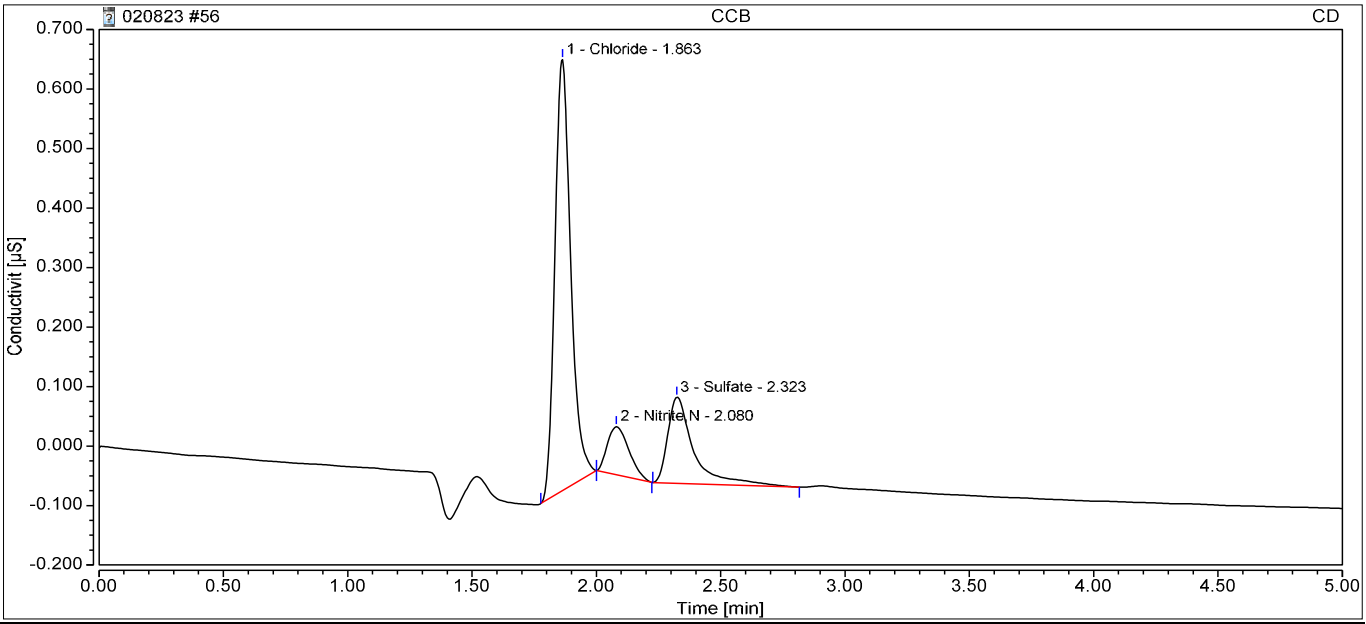

**Integration Results**

| No. | Retention min | Peak Name | Peak Type | Area µS*min | Amount ppm | Concentration ppm | Dilution |
|---|---|---|---|---|---|---|---|
| 1 | 1.52 | Fluoride | BMB | 1.064 | 4.1026 | 4.1026 | 1.0000 |
| 2 | 1.86 | Chloride | BMB | 3.496 | 20.3946 | 20.3946 | 1.0000 |
| 3 | 2.10 | Nitrite,N | BMB | 1.305 | 3.8410 | 3.8410 | 1.0000 |
| 4 | 2.32 | Sulfate | BMB | 2.342 | 20.8085 | 20.8085 | 1.0000 |
| 5 | 2.58 | Bromide | BMB | 0.244 | 4.2705 | 4.2705 | 1.0000 |
| 6 | 2.89 | Nitrate | BMB | 1.401 | 4.0069 | 4.0069 | 1.0000 |
| 7 | 3.06 | Chlorate | BMB | 0.021 | 3.8733 | 3.8733 | 1.0000 |
| 8 | 3.68 | Phosphate | BMB | 0.147 | 4.9880 | 4.9880 | 1.0000 |
| **Total:** | | | **0.000** | **10.020** | | **66.29** | |

*56 CCB*

| | | | |
|---|---|---|---|
| *Sample Name:* | **CCB** | *Injection Volume:* | **5.00** |
| *Vial Number:* | **R4** | *Channel:* | **CD** |
| *Sample Type:* | **Unknown** | *Wavelength:* | **n.a.** |
| *Control Program:* | **Anions Program ISO37mM 150mm short 0.4 Constant current** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **Anions Processing Method ISO** | *Dilution Factor:* | **1.0000** |
| *Recording Time:* | **02/08/2023 14:35** | *Sample Weight:* | **1.0000** |

Run Time:




**Integration Results**

| No. | Retention min | Peak Name | Peak Type | Area µS*min | Amount ppm | Concentration ppm | Dilution |
|---|---|---|---|---|---|---|---|
| n.a. | n.a. | Fluoride | n.a. | n.a. | n.a. | n.a. | 1.0000 |
| 1 | 1.86 | Chloride | BMB | 0.053 | 0.3310 | 0.3310 | 1.0000 |
| 2 | 2.08 | Nitrite,N | BMB | 0.008 | 0.0222 | 0.0222 | 1.0000 |
| 3 | 2.32 | Sulfate | BMB | 0.017 | 0.1394 | 0.1394 | 1.0000 |
| n.a. | n.a. | Bromide | n.a. | n.a. | n.a. | n.a. | 1.0000 |
| n.a. | n.a. | Nitrate | n.a. | n.a. | n.a. | n.a. | 1.0000 |
| n.a. | n.a. | Chlorate | n.a. | n.a. | n.a. | n.a. | 1.0000 |
| n.a. | n.a. | Phosphate | n.a. | n.a. | n.a. | n.a. | 1.0000 |
| **Total:** | | | **0.000** | **0.079** | | **0.49** | |

# HS23020265 Eurofin Lab J114929-1 Std_Tal_L4 Rev(1) Final Report

ALS WO# HS23020265

eurofins | Environment Testing

# ANALYTICAL REPORT

## PREPARED FOR

Attn: Dane Wacasey
ALS Group USA, Corp
10450 Stancliff Rd.
Suite 210
Houston TX 77099

Generated 2/15/2023 5:39 PM Revision 1

## JOB DESCRIPTION

HS23020265

## JOB NUMBER

410-114929-1

Eurofins Lancaster Laboratories Environment Testing, LLC
2425 New Holland Pike
Lancaster PA 17601

See page two for job notes and contact information.



my EOL

# Eurofins Lancaster Laboratories Environment Testing, LLC

## Job Notes

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

## Authorization



Generated
2/15/2023 5:39 PM
Revision 1

Authorized for release by
Amek Carter, Project Manager
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717 556-7262

# Eurofins Lancaster Laboratories Environment Testing, LLC

## Compliance Statement

Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.
· QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
· Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
· Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

This report shall not be reproduced except in full, without the written approval of the laboratory.

WARRANTY AND LIMITS OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. The foregoing express warranty is exclusive and is given in lieu of all other warranties, expressed or implied, except as otherwise agreed. We disclaim any other warranties, expressed or implied, including a warranty of fitness for particular purpose and warranty of merchantability. In no event shall Eurofins Lancaster Laboratories Environmental, LLC be liable for indirect, special, consequential, or incidental damages including, but not limited to, damages for loss of profit or goodwill regardless of (A) the negligence (either sole or concurrent) of Eurofins Lancaster Laboratories Environmental and (B) whether Eurofins Lancaster Laboratories Environmental has been informed of the possibility of such damages. We accept no legal responsibility for the purposes for which the client uses the test results. Except as otherwise agreed, no purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.



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# Definitions/Glossary

Client: ALS Group USA, Corp
Job ID: 410-114929-1
Project/Site: HS23020265

## Qualifiers

### GC VOA

| Qualifier | Qualifier Description |
|---|---|
| J1 | Estimated: The quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria. |
| M | Manual integrated compound. |
| U | Undetected at the Limit of Detection. |

## Glossary

| Abbreviation | These commonly used abbreviations may or may not be present in this report. |
|---|---|
| ¤ | Listed under the "D" column to designate that the result is reported on a dry weight basis |
| %R | Percent Recovery |
| CFL | Contains Free Liquid |
| CFU | Colony Forming Unit |
| CNF | Contains No Free Liquid |
| DER | Duplicate Error Ratio (normalized absolute difference) |
| Dil Fac | Dilution Factor |
| DL | Detection Limit (DoD/DOE) |
| DL, RA, RE, IN | Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample |
| DLC | Decision Level Concentration (Radiochemistry) |
| EDL | Estimated Detection Limit (Dioxin) |
| LOD | Limit of Detection (DoD/DOE) |
| LOQ | Limit of Quantitation (DoD/DOE) |
| MCL | EPA recommended "Maximum Contaminant Level" |
| MDA | Minimum Detectable Activity (Radiochemistry) |
| MDC | Minimum Detectable Concentration (Radiochemistry) |
| MDL | Method Detection Limit |
| ML | Minimum Level (Dioxin) |
| MPN | Most Probable Number |
| MQL | Method Quantitation Limit |
| NC | Not Calculated |
| ND | Not Detected at the reporting limit (or MDL or EDL if shown) |
| NEG | Negative / Absent |
| POS | Positive / Present |
| PQL | Practical Quantitation Limit |
| PRES | Presumptive |
| QC | Quality Control |
| RER | Relative Error Ratio (Radiochemistry) |
| RL | Reporting Limit or Requested Limit (Radiochemistry) |
| RPD | Relative Percent Difference, a measure of the relative difference between two points |
| TEF | Toxicity Equivalent Factor (Dioxin) |
| TEQ | Toxicity Equivalent Quotient (Dioxin) |
| TNTC | Too Numerous To Count |

**Job Narrative**
**410-114929-1**

REVISION

The report being provided is a revision of the original report sent on 2/10/2023. The report (revision 1) is being revised due to Data missing from Level 4 Data Package..

Report revision history

**Receipt**
The samples were received on 2/9/2023 10:25 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 2.7°C

**GC VOA**
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

# Detection Summary

Client: ALS Group USA, Corp
Project/Site: HS23020265

Job ID: 410-114929-1

## Client Sample ID: HS23020265-01 — Lab Sample ID: 410-114929-1

| Analyte | Result | Qualifier | LOQ | LOD | DL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|---|
| Carbon dioxide | 46000 | | 12000 | | 2600 | ug/L | 1 | | RSK-175 | Total/NA |

## Client Sample ID: HS23020265-02 — Lab Sample ID: 410-114929-2

No Detections.

## Client Sample ID: HS23020265-04 — Lab Sample ID: 410-114929-3

| Analyte | Result | Qualifier | LOQ | LOD | DL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|---|
| Carbon dioxide | 90000 | J1 | 12000 | | 2600 | ug/L | 1 | | RSK-175 | Total/NA |

This Detection Summary does not include radiochemical test results.

# Client Sample Results

Client: ALS Group USA, Corp
Project/Site: HS23020265

Job ID: 410-114929-1

## Client Sample ID: HS23020265-01
**Lab Sample ID: 410-114929-1**

**Date Collected: 02/06/23 07:35**
**Matrix: Water**
**Date Received: 02/09/23 10:25**

### Method: RSK-175 - Dissolved Gases (GC)

| Analyte | Result | Qualifier | LOQ | LOD | DL | Unit | D | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Carbon dioxide** | **46000** | | 12000 | | 2600 | ug/L | | 02/10/23 09:41 | 1 |

## Client Sample ID: HS23020265-02
**Lab Sample ID: 410-114929-2**

**Date Collected: 02/06/23 08:20**
**Matrix: Water**
**Date Received: 02/09/23 10:25**

### Method: RSK-175 - Dissolved Gases (GC)

| Analyte | Result | Qualifier | LOQ | LOD | DL | Unit | D | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Carbon dioxide | 2600 | U | 12000 | | 2600 | ug/L | | 02/10/23 09:48 | 1 |

## Client Sample ID: HS23020265-04
**Lab Sample ID: 410-114929-3**

**Date Collected: 02/06/23 10:00**
**Matrix: Water**
**Date Received: 02/09/23 10:25**

### Method: RSK-175 - Dissolved Gases (GC)

| Analyte | Result | Qualifier | LOQ | LOD | DL | Unit | D | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Carbon dioxide** | **90000** | **J1** | 12000 | | 2600 | ug/L | | 02/10/23 09:56 | 1 |

# Default Detection Limits

Client: ALS Group USA, Corp
Project/Site: HS23020265

Job ID: 410-114929-1

## Method: RSK-175 - Dissolved Gases (GC)

### Prep: RSK-175

| Analyte | LOQ | DL | Units |
|---|---|---|---|
| Carbon dioxide | 12000 | 2600 | ug/L |

# QC Sample Results

Client: ALS Group USA, Corp
Project/Site: HS23020265

Job ID: 410-114929-1

## Method: RSK-175 - Dissolved Gases (GC)

**Lab Sample ID: MB 410-343431/1-A**
**Matrix: Water**
**Analysis Batch: 343395**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 343431**

| Analyte | MB Result | MB Qualifier | LOQ | LOD | DL | Unit | D | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Carbon dioxide | 2600 | U | 12000 | | 2600 | ug/L | | 02/10/23 09:12 | 1 |

**Lab Sample ID: LCS 410-343431/2-A**
**Matrix: Water**
**Analysis Batch: 343395**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 343431**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Carbon dioxide | | | 35800 | 33700 | | ug/L | | 94 | 80 - 122 | | |

**Lab Sample ID: 410-114929-3 MS**
**Matrix: Water**
**Analysis Batch: 343395**

**Client Sample ID: HS23020265-04**
**Prep Type: Total/NA**
**Prep Batch: 343431**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Carbon dioxide | 90000 | J1 | 35800 | 151000 | M J1 | ug/L | | 168 | 80 - 122 | | |

**Lab Sample ID: 410-114929-3 MSD**
**Matrix: Water**
**Analysis Batch: 343395**

**Client Sample ID: HS23020265-04**
**Prep Type: Total/NA**
**Prep Batch: 343431**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Carbon dioxide | 90000 | J1 | 35800 | 210000 | M J1 | ug/L | | 334 | 80 - 122 | 33 | 30 |

# QC Association Summary

Client: ALS Group USA, Corp
Project/Site: HS23020265

Job ID: 410-114929-1

## GC VOA

### Analysis Batch: 343395

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 410-114929-1 | HS23020265-01 | Total/NA | Water | RSK-175 | 343431 |
| 410-114929-2 | HS23020265-02 | Total/NA | Water | RSK-175 | 343431 |
| 410-114929-3 | HS23020265-04 | Total/NA | Water | RSK-175 | 343431 |
| MB 410-343431/1-A | Method Blank | Total/NA | Water | RSK-175 | 343431 |
| LCS 410-343431/2-A | Lab Control Sample | Total/NA | Water | RSK-175 | 343431 |
| 410-114929-3 MS | HS23020265-04 | Total/NA | Water | RSK-175 | 343431 |
| 410-114929-3 MSD | HS23020265-04 | Total/NA | Water | RSK-175 | 343431 |

### Prep Batch: 343431

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 410-114929-1 | HS23020265-01 | Total/NA | Water | RSK-175 | |
| 410-114929-2 | HS23020265-02 | Total/NA | Water | RSK-175 | |
| 410-114929-3 | HS23020265-04 | Total/NA | Water | RSK-175 | |
| MB 410-343431/1-A | Method Blank | Total/NA | Water | RSK-175 | |
| LCS 410-343431/2-A | Lab Control Sample | Total/NA | Water | RSK-175 | |
| 410-114929-3 MS | HS23020265-04 | Total/NA | Water | RSK-175 | |
| 410-114929-3 MSD | HS23020265-04 | Total/NA | Water | RSK-175 | |

# Lab Chronicle

Client: ALS Group USA, Corp
Project/Site: HS23020265

Job ID: 410-114929-1

## Client Sample ID: HS23020265-01
**Date Collected: 02/06/23 07:35**
**Date Received: 02/09/23 10:25**

## Lab Sample ID: 410-114929-1
**Matrix: Water**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab | Prepared or Analyzed |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | RSK-175 | | | 343431 | WN7O | ELLE | 02/10/23 08:21 |
| Total/NA | Analysis | RSK-175 | | 1 | 343395 | WN7O | ELLE | 02/10/23 09:41 |

## Client Sample ID: HS23020265-02
**Date Collected: 02/06/23 08:20**
**Date Received: 02/09/23 10:25**

## Lab Sample ID: 410-114929-2
**Matrix: Water**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab | Prepared or Analyzed |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | RSK-175 | | | 343431 | WN7O | ELLE | 02/10/23 08:21 |
| Total/NA | Analysis | RSK-175 | | 1 | 343395 | WN7O | ELLE | 02/10/23 09:48 |

## Client Sample ID: HS23020265-04
**Date Collected: 02/06/23 10:00**
**Date Received: 02/09/23 10:25**

## Lab Sample ID: 410-114929-3
**Matrix: Water**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab | Prepared or Analyzed |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | RSK-175 | | | 343431 | WN7O | ELLE | 02/10/23 08:21 |
| Total/NA | Analysis | RSK-175 | | 1 | 343395 | WN7O | ELLE | 02/10/23 09:56 |

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

# Accreditation/Certification Summary

Client: ALS Group USA, Corp
Job ID: 410-114929-1
Project/Site: HS23020265

## Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

The accreditations/certifications listed below are applicable to this report.

| Authority | Program | Identification Number | Expiration Date |
|---|---|---|---|
| A2LA | Dept. of Defense ELAP | 0001.01 | 11-30-24 |

# Method Summary

Client: ALS Group USA, Corp
Project/Site: HS23020265

Job ID: 410-114929-1

| Method | Method Description | Protocol | Laboratory |
|---|---|---|---|
| RSK-175 | Dissolved Gases (GC) | RSK | ELLE |
| RSK-175 | Dissolved Gases Prep | RSK | ELLE |

**Protocol References:**

RSK = Sample Prep And Calculations For Dissolved Gas Analysis In Water Samples Using A GC Headspace Equilibration Technique, RSKSOP-175, Rev. 0, 8/11/94, USEPA Research Lab

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

# Sample Summary

Client: ALS Group USA, Corp
Project/Site: HS23020265

Job ID: 410-114929-1

| Lab Sample ID | Client Sample ID | Matrix | Collected | Received |
|---|---|---|---|---|
| 410-114929-1 | HS23020265-01 | Water | 02/06/23 07:35 | 02/09/23 10:25 |
| 410-114929-2 | HS23020265-02 | Water | 02/06/23 08:20 | 02/09/23 10:25 |
| 410-114929-3 | HS23020265-04 | Water | 02/06/23 10:00 | 02/09/23 10:25 |

# GC VOA MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins Lancaster Laborator  Job No.: 410-114929-1

SDG No.:

Instrument ID: 19506-B  Analysis Batch Number: 331616

Lab Sample ID: IC 410-331616/6  Client Sample ID:

Date Analyzed: 12/30/22 17:05  Lab File ID: 312022_12_30B.0006.d  GC Column: HP Plot  ID: 0.53(mm)

| COMPOUND NAME | RETENTION TIME | MANUAL INTEGRATION | | |
|---|---|---|---|---|
| | | REASON | ANALYST | DATE |
| Carbon dioxide | 1.94 | Peak assignment corrected | WN7O | 12/30/22 17:19 |

# GC VOA MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins Lancaster Laborator  Job No.: 410-114929-1

SDG No.:

Instrument ID: 19506-B  Analysis Batch Number: 343395

Lab Sample ID: 410-114929-3 MS  Client Sample ID: HS23020265-04 MS

Date Analyzed: 02/10/23 10:04  Lab File ID: 312023_02_10BB.0012.d  GC Column: HP Plot  ID: 0.53(mm)

| COMPOUND NAME | RETENTION TIME | MANUAL INTEGRATION | | |
|---|---|---|---|---|
| | | REASON | ANALYST | DATE |
| Carbon dioxide | 2.04 | Peak assignment corrected | WN7O | 02/10/23 13:02 |

Lab Sample ID: 410-114929-3 MSD  Client Sample ID: HS23020265-04 MSD

Date Analyzed: 02/10/23 10:12  Lab File ID: 312023_02_10BB.0013.d  GC Column: HP Plot  ID: 0.53(mm)

| COMPOUND NAME | RETENTION TIME | MANUAL INTEGRATION | | |
|---|---|---|---|---|
| | | REASON | ANALYST | DATE |
| Carbon dioxide | 2.03 | Peak assignment corrected | WN7O | 02/10/23 13:02 |

# REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-114929-1

SDG No.:

| Reagent ID | Exp Date | Prep Date | Dilutant Used | Reagent Final Volume | Parent Reagent | | Analyte | Concentration |
|---|---|---|---|---|---|---|---|---|
| | | | | | Reagent ID | Volume Added | | |
| **EPH_CO2ICV_00002** | 09/29/23 | 09/29/22 | DI Water, Lot In House | 1 mL | EPH_CO2XX_00002 | 0.0018 g | Carbon dioxide | 547000 ppb |
| .EPH_CO2XX_00002 | 09/29/23 | Air Products, Lot A214157 | | | (Purchased Reagent) | | Carbon dioxide | 30.3889 % |
| **EPH_CO2MS_00004** | 07/16/23 | 07/18/22 | DI Water, Lot In House | 1 g | EPH_CO2CRV_00002 | 0.0018 g | Carbon dioxide | 1791000 ppb |
| .EPH_CO2CRV_00002 | 07/16/23 | Praxair, Lot 4-11-18 | | | (Purchased Reagent) | | Carbon dioxide | 99.5 % |

# Method RSK-175 CO2 DOD

## Dissolved Gases (GC) by Method RSK_175_CO2 DOD

FORM III
GC VOA LAB CONTROL SAMPLE RECOVERY

Lab Name: Eurofins Lancaster Laboratories Environment Testing, LLC  Job No.: 410-114929-1

SDG No.:

Matrix: Water  Level: Low  Lab File ID: 312023_02_10BB.0007.d

Lab ID: LCS 410-343431/2-A  Client ID:

| COMPOUND | SPIKE ADDED (ug/L) | LCS CONCENTRATION (ug/L) | LCS % REC | QC LIMITS REC | # |
|---|---|---|---|---|---|
| Carbon dioxide | 35800 | 33700 | 94 | 80-122 | |

# Column to be used to flag recovery and RPD values

FORM III RSK-175

FORM III
GC VOA MATRIX SPIKE RECOVERY

Lab Name: Eurofins Lancaster Laboratories Environment Testing, LLC  Job No.: 410-114929-1

SDG No.:

Matrix: Water  Level: Low  Lab File ID: 312023_02_10BB.0012.d

Lab ID: 410-114929-3 MS  Client ID: HS23020265-04 MS

| COMPOUND | SPIKE ADDED (ug/L) | SAMPLE CONCENTRATION (ug/L) | MS CONCENTRATION (ug/L) | MS % REC | QC LIMITS REC | # |
|---|---|---|---|---|---|---|
| Carbon dioxide | 35800 | 90000 | 151000 | 168 | 80-122 | M J1 |

# Column to be used to flag recovery and RPD values

FORM III RSK-175

FORM III
GC VOA MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: Eurofins Lancaster Laboratories Environment Testing, LLC  Job No.: 410-114929-1

SDG No.:

Matrix: Water  Level: Low  Lab File ID: 312023_02_10BB.0013.d

Lab ID: 410-114929-3 MSD  Client ID: HS23020265-04 MSD

| COMPOUND | SPIKE ADDED (ug/L) | MSD CONCENTRATION (ug/L) | MSD % REC | % RPD | QC LIMITS RPD | QC LIMITS REC | # |
|---|---|---|---|---|---|---|---|
| Carbon dioxide | 35800 | 210000 | 334 | 33 | 30 | 80-122 | M J1 |

# Column to be used to flag recovery and RPD values

FORM III RSK-175

FORM IV
GC VOA METHOD BLANK SUMMARY

Lab Name: Eurofins Lancaster Laboratories Environment Testing, LLC  Job No.: 410-114929-1

SDG No.:

Lab File ID: 312023_02_10BB.0006.d  Lab Sample ID: MB 410-343431/1-A

Matrix: Water  Heated Purge:(Y/N) N

Instrument ID: 19506-B  Date Analyzed: 02/10/2023 09:12

GC Column: HP Plot  ID: 0.53(mm)

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

| CLIENT SAMPLE ID | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED |
|---|---|---|---|
| | LCS 410-343431/2-A | 312023_02_10BB.0007.d | 02/10/2023 09:21 |
| HS23020265-01 | 410-114929-1 | 312023_02_10BB.0009.d | 02/10/2023 09:41 |
| HS23020265-02 | 410-114929-2 | 312023_02_10BB.0010.d | 02/10/2023 09:48 |
| HS23020265-04 | 410-114929-3 | 312023_02_10BB.0011.d | 02/10/2023 09:56 |
| HS23020265-04 MS | 410-114929-3 MS | 312023_02_10BB.0012.d | 02/10/2023 10:04 |
| HS23020265-04 MSD | 410-114929-3 MSD | 312023_02_10BB.0013.d | 02/10/2023 10:12 |

FORM I
GC VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Lancaster Laboratories Environment Testing, LLC
Job No.: 410-114929-1

SDG No.:

Client Sample ID: HS23020265-01
Lab Sample ID: 410-114929-1

Matrix: Water
Lab File ID: 312023_02_10BB.0009.d

Analysis Method: RSK-175
Date Collected: 02/06/2023 07:35

Sample wt/vol: 5(mL)
Date Analyzed: 02/10/2023 09:41

Soil Aliquot Vol:
Dilution Factor: 1

Soil Extract Vol.:
GC Column: HP Plot ID: 0.53(mm)

Purge Volume:
Heated Purge: (Y/N) N pH: 7.0

% Moisture: % Solids:
Level: (low/med) Low

Analysis Batch No.: 343395
Units: ug/L

| CAS NO. | COMPOUND NAME | RESULT | Q | LOQ | DL |
|---|---|---|---|---|---|
| 124-38-9 | Carbon dioxide | 46000 | | 12000 | 2600 |

Report Date: 10-Feb-2023 13:02:46

Eurofins Lancaster Laboratories Environment Testing, LLC
Target Compound Quantitation Report

| | | | | | |
|---|---|---|---|---|---|
| Data File: | \\chromfs\Lancaster\ChromData\19506-B\20230210-76805.b\312023_02_10BB.0009.d | | | | |
| Lims ID: | 410-114929-A-1-A | | | | |
| Client ID: | HS23020265-01 | | | | |
| Sample Type: | Client | | | | |
| Inject. Date: | 10-Feb-2023 09:41:00 | ALS Bottle#: | 0 | Worklist Smp#: | 9 |
| Injection Vol: | 1.0 uL | Dil. Factor: | 1.0000 | | |
| Sample Info: | | | | | |
| Misc. Info.: | 410-0076805-009 | | | | |
| Operator ID: | | Instrument ID: | 19506-B | | |
| Method: | \\chromfs\Lancaster\ChromData\19506-B\20230210-76805.b\RSK_CO2_19506B.m | | | | |
| Limit Group: | GCV - RSK175 CO2 | | | | |
| Last Update: | 10-Feb-2023 13:02:46 | Calib Date: | 30-Dec-2022 17:05:00 | | |
| Integrator: | Genie | | | | |
| Quant Method: | External Standard | Quant By: | Initial Calibration | | |
| Last ICal File: | \\chromfs\Lancaster\ChromData\19506-B\20221230-74294.b\312022_12_30B.0006.d | | | | |
| Column 1 : | HP Plot ( 0.00 mm) | | Det: 0FIDA | | |
| Process Host: | CTX1629 | | | | |

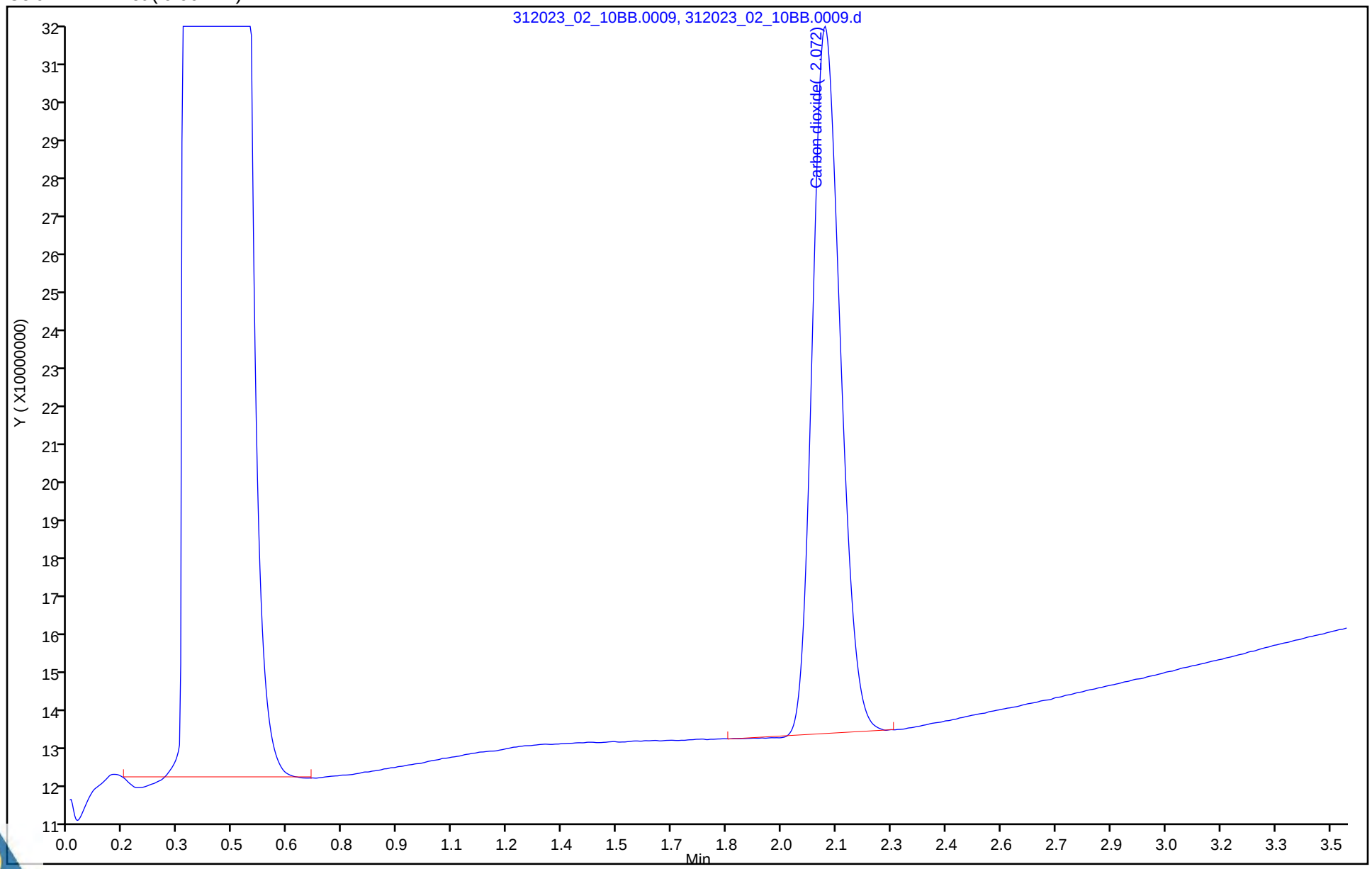
| Compound | RT (min.) | Exp RT (min.) | Dlt RT (min.) | Response | OnCol Amt ug/l | Flags |
|---|---|---|---|---|---|---|
| 1 Carbon dioxide | 2.072 | 2.076 | -0.004 | 180958763 | 45691 | H |

Report Date: 10-Feb-2023 13:02:46 Chrom Revision: 2.3 01-Feb-2023 13:23:06

Eurofins Lancaster Laboratories Environment Testing, LLC

| | | | | | |
|---|---|---|---|---|---|
| Data File: | \\chromfs\Lancaster\ChromData\19506-B\20230210-76805.b\312023_02_10BB.0009.d | | | | |
| Injection Date: | 10-Feb-2023 09:41:00 | Instrument ID: | 19506-B | Operator ID: | |
| Lims ID: | 410-114929-A-1-A | Lab Sample ID: | 410-114929-1 | Worklist Smp#: | 9 |
| Client ID: | HS23020265-01 | | | | |
| Injection Vol: | 1.0 uL | Dil. Factor: | 1.0000 | ALS Bottle#: | 0 |
| Method: | RSK_CO2_19506B | Limit Group: | GCV - RSK175 CO2 | | |

Column: HP Plot ( 0.00 mm)



FORM I
GC VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Lancaster Laboratories Environment Testing, LLC  Job No.: 410-114929-1

SDG No.:

Client Sample ID: HS23020265-02  Lab Sample ID: 410-114929-2

Matrix: Water  Lab File ID: 312023_02_10BB.0010.d

Analysis Method: RSK-175  Date Collected: 02/06/2023 08:20

Sample wt/vol: 5(mL)  Date Analyzed: 02/10/2023 09:48

Soil Aliquot Vol:  Dilution Factor: 1

Soil Extract Vol.:  GC Column: HP Plot  ID: 0.53(mm)

Purge Volume:  Heated Purge: (Y/N) N  pH: 10.0

% Moisture:  % Solids:  Level: (low/med) Low

Analysis Batch No.: 343395  Units: ug/L

| CAS NO. | COMPOUND NAME | RESULT | Q | LOQ | DL |
|---|---|---|---|---|---|
| 124-38-9 | Carbon dioxide | 2600 | U | 12000 | 2600 |

Report Date: 10-Feb-2023 13:02:47

Eurofins Lancaster Laboratories Environment Testing, LLC
Target Compound Quantitation Report

| | | | | | |
|---|---|---|---|---|---|
| Data File: | \\chromfs\Lancaster\ChromData\19506-B\20230210-76805.b\312023_02_10BB.0010.d | | | | |
| Lims ID: | 410-114929-A-2-A | | | | |
| Client ID: | HS23020265-02 | | | | |
| Sample Type: | Client | | | | |
| Inject. Date: | 10-Feb-2023 09:48:00 | ALS Bottle#: | 0 | Worklist Smp#: | 10 |
| Injection Vol: | 1.0 uL | Dil. Factor: | 1.0000 | | |
| Sample Info: | | | | | |
| Misc. Info.: | 410-0076805-010 | | | | |
| Operator ID: | | Instrument ID: | 19506-B | | |
| Method: | \\chromfs\Lancaster\ChromData\19506-B\20230210-76805.b\RSK_CO2_19506B.m | | | | |
| Limit Group: | GCV - RSK175 CO2 | | | | |
| Last Update: | 10-Feb-2023 13:02:46 | Calib Date: | 30-Dec-2022 17:05:00 | | |
| Integrator: | Genie | | | | |
| Quant Method: | External Standard | Quant By: | Initial Calibration | | |
| Last ICal File: | \\chromfs\Lancaster\ChromData\19506-B\20221230-74294.b\312022_12_30B.0006.d | | | | |
| Column 1 : | HP Plot ( 0.00 mm) | | Det: 0FIDA | | |
| Process Host: | CTX1629 | | | | |

| Compound | RT (min.) | Exp RT (min.) | Dlt RT (min.) | Response | OnCol Amt ug/l | Flags |
|---|---|---|---|---|---|---|
| 1 Carbon dioxide | | 2.076 | | | ND | |

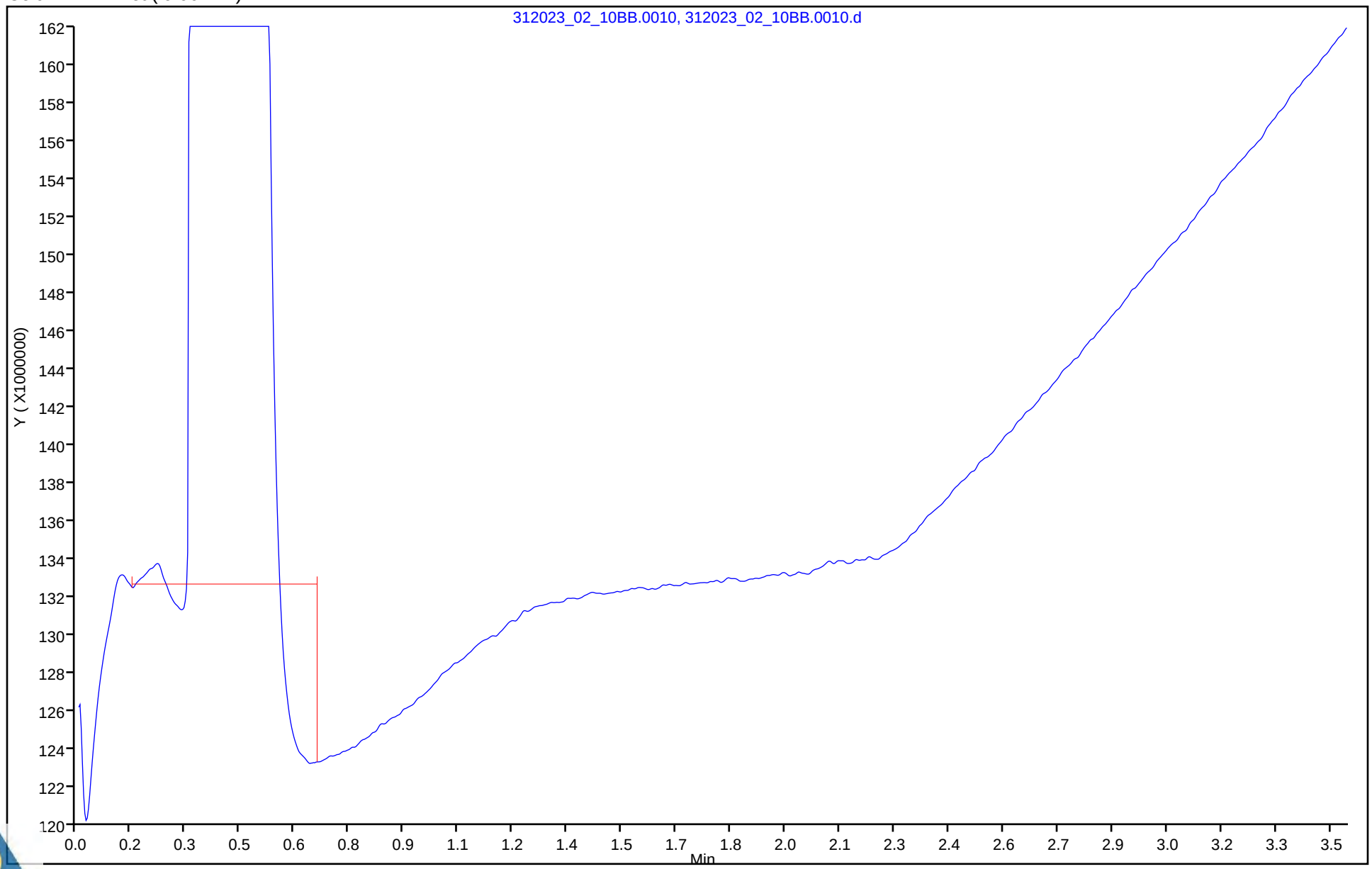
Report Date: 10-Feb-2023 13:02:47 Chrom Revision: 2.3 01-Feb-2023 13:23:06

Eurofins Lancaster Laboratories Environment Testing, LLC

Data File: \\chromfs\Lancaster\ChromData\19506-B\20230210-76805.b\312023_02_10BB.0010.d

| | | | | | |
|---|---|---|---|---|---|
| Injection Date: | 10-Feb-2023 09:48:00 | Instrument ID: | 19506-B | Operator ID: | |
| Lims ID: | 410-114929-A-2-A | Lab Sample ID: | 410-114929-2 | Worklist Smp#: | 10 |
| Client ID: | HS23020265-02 | | | | |
| Injection Vol: | 1.0 uL | Dil. Factor: | 1.0000 | ALS Bottle#: | 0 |
| Method: | RSK_CO2_19506B | Limit Group: | GCV - RSK175 CO2 | | |

Column: HP Plot ( 0.00 mm)



FORM I
GC VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Lancaster Laboratories Environment Testing, LLC  Job No.: 410-114929-1

SDG No.:

Client Sample ID: HS23020265-04  Lab Sample ID: 410-114929-3

Matrix: Water  Lab File ID: 312023_02_10BB.0011.d

Analysis Method: RSK-175  Date Collected: 02/06/2023 10:00

Sample wt/vol: 5(mL)  Date Analyzed: 02/10/2023 09:56

Soil Aliquot Vol:  Dilution Factor: 1

Soil Extract Vol.:  GC Column: HP Plot  ID: 0.53(mm)

Purge Volume:  Heated Purge: (Y/N) N  pH: 6.0

% Moisture:  % Solids:  Level: (low/med) Low

Analysis Batch No.: 343395  Units: ug/L

| CAS NO. | COMPOUND NAME | RESULT | Q | LOQ | DL |
|---|---|---|---|---|---|
| 124-38-9 | Carbon dioxide | 90000 | J1 | 12000 | 2600 |

Report Date: 10-Feb-2023 13:02:47

Eurofins Lancaster Laboratories Environment Testing, LLC
Target Compound Quantitation Report

| | | | | | |
|---|---|---|---|---|---|
| Data File: | \\chromfs\Lancaster\ChromData\19506-B\20230210-76805.b\312023_02_10BB.0011.d | | | | |
| Lims ID: | 410-114929-A-3-A | | | | |
| Client ID: | HS23020265-04 | | | | |
| Sample Type: | Client | | | | |
| Inject. Date: | 10-Feb-2023 09:56:00 | ALS Bottle#: | 0 | Worklist Smp#: | 11 |
| Injection Vol: | 1.0 uL | Dil. Factor: | 1.0000 | | |
| Sample Info: | | | | | |
| Misc. Info.: | 410-0076805-011 | | | | |
| Operator ID: | | Instrument ID: | 19506-B | | |
| Method: | \\chromfs\Lancaster\ChromData\19506-B\20230210-76805.b\RSK_CO2_19506B.m | | | | |
| Limit Group: | GCV - RSK175 CO2 | | | | |
| Last Update: | 10-Feb-2023 13:02:46 | Calib Date: | 30-Dec-2022 17:05:00 | | |
| Integrator: | Genie | | | | |
| Quant Method: | External Standard | Quant By: | Initial Calibration | | |
| Last ICal File: | \\chromfs\Lancaster\ChromData\19506-B\20221230-74294.b\312022_12_30B.0006.d | | | | |
| Column 1 : | HP Plot ( 0.00 mm) | | Det: 0FIDA | | |
| Process Host: | CTX1629 | | | | |

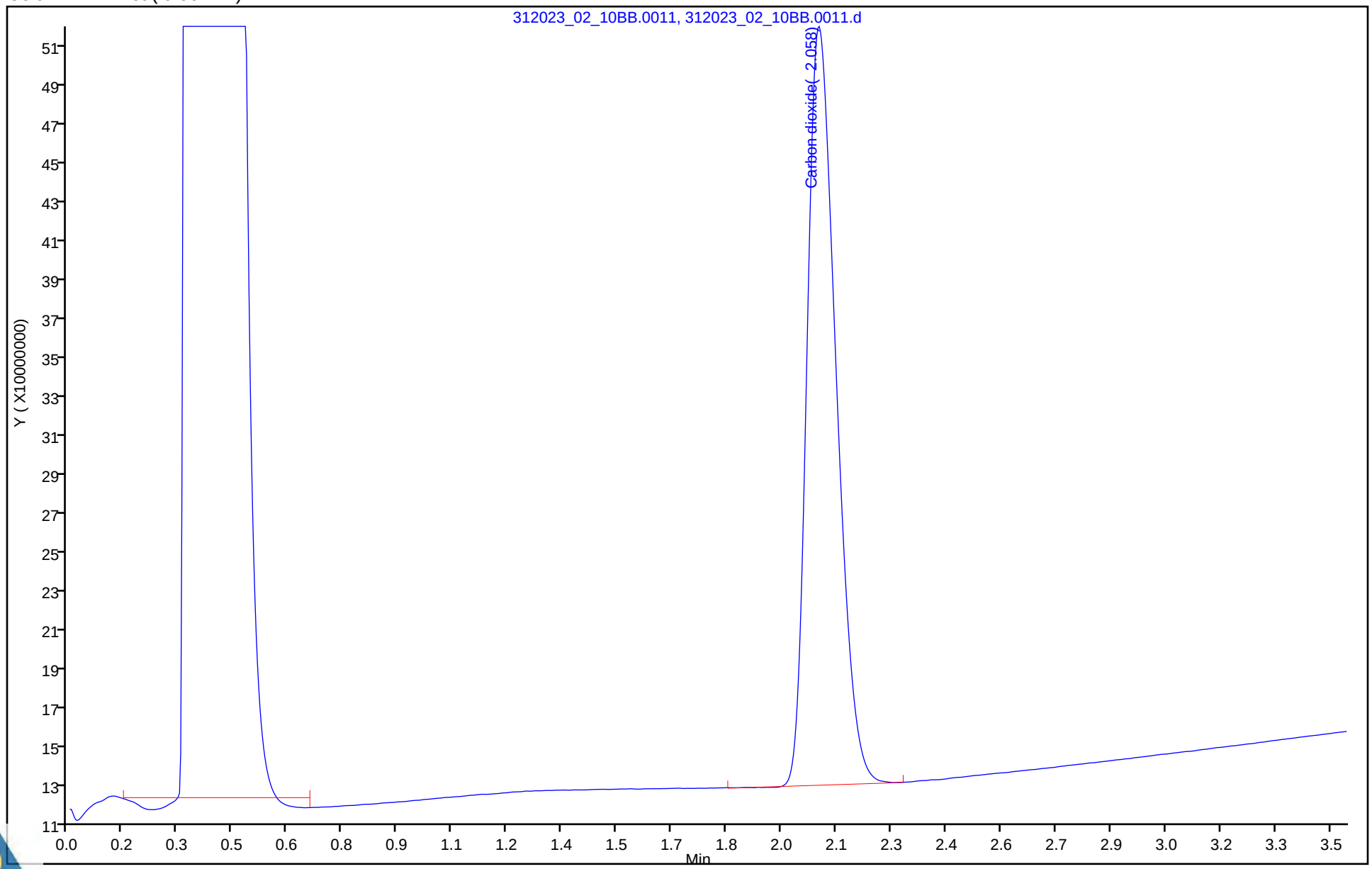
| Compound | RT (min.) | Exp RT (min.) | Dlt RT (min.) | Response | OnCol Amt ug/l | Flags |
|---|---|---|---|---|---|---|
| 1 Carbon dioxide | 2.058 | 2.076 | -0.018 | 357339069 | 90226 | H |

Report Date: 10-Feb-2023 13:02:47 Chrom Revision: 2.3 01-Feb-2023 13:23:06

Eurofins Lancaster Laboratories Environment Testing, LLC

| | | | | | |
|---|---|---|---|---|---|
| Data File: | \\chromfs\Lancaster\ChromData\19506-B\20230210-76805.b\312023_02_10BB.0011.d | | | | |
| Injection Date: | 10-Feb-2023 09:56:00 | Instrument ID: | 19506-B | Operator ID: | |
| Lims ID: | 410-114929-A-3-A | Lab Sample ID: | 410-114929-3 | Worklist Smp#: | 11 |
| Client ID: | HS23020265-04 | | | | |
| Injection Vol: | 1.0 uL | Dil. Factor: | 1.0000 | ALS Bottle#: | 0 |
| Method: | RSK_CO2_19506B | Limit Group: | GCV - RSK175 CO2 | | |

Column: HP Plot ( 0.00 mm)



FORM VI
GC VOA BY EXTERNAL STANDARD - INITIAL CALIBRATION DATA
RETENTION TIME SUMMARY

Lab Name: Eurofins Lancaster Laboratories Env  Job No.: 410-114929-1  Analy Batch No.: 331616

SDG No.:

Instrument ID: 19506-B  GC Column: HP Plot  ID: 0.53(mm)  Heated Purge: (Y/N) N

Calibration Start Date: 12/30/2022 16:32  Calibration End Date: 12/30/2022 17:13  Calibration ID: 45608

Calibration Files

| LEVEL: | LAB SAMPLE ID: | LAB FILE ID: |
|---|---|---|
| Level 1 | IC 410-331616/2 | 312022_12_30B.0002.d |
| Level 2 | IC 410-331616/3 | 312022_12_30B.0003.d |
| Level 3 | ICRT 410-331616/4 | 312022_12_30B.0004.d |
| Level 4 | IC 410-331616/5 | 312022_12_30B.0005.d |
| Level 5 | IC 410-331616/6 | 312022_12_30B.0006.d |

| ANALYTE | LVL 1 | LVL 2 | LVL 3 | LVL 4 | LVL 5 | | | | | | RT WINDOW | AVG RT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Carbon dioxide | 1.980 | 1.977 | 1.973 | 1.960 | 1.943 | | | | | | 1.943 - 2.003 | 1.967 |

FORM VI
GC VOA BY EXTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins Lancaster Laboratories Environment Testing, LLC  Job No.: 410-114929-1  Analy Batch No.: 331616

SDG No.:

Instrument ID: 19506-B  GC Column: HP Plot  ID: 0.53(mm)  Heated Purge: (Y/N) N

Calibration Start Date: 12/30/2022 16:32  Calibration End Date: 12/30/2022 17:13  Calibration ID: 45608

Calibration Files

| LEVEL: | LAB SAMPLE ID: | LAB FILE ID: |
|---|---|---|
| Level 1 | IC 410-331616/2 | 312022_12_30B.0002.d |
| Level 2 | IC 410-331616/3 | 312022_12_30B.0003.d |
| Level 3 | ICRT 410-331616/4 | 312022_12_30B.0004.d |
| Level 4 | IC 410-331616/5 | 312022_12_30B.0005.d |
| Level 5 | IC 410-331616/6 | 312022_12_30B.0006.d |

| ANALYTE | CF | | | | CURVE TYPE | COEFFICIENT | | | # | MIN CF | %RSD /RSE | # | MAX %RSD /RSE | R^2 OR COD | # | MIN R^2 OR COD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | LVL 1 LVL 5 | LVL 2 | LVL 3 | LVL 4 | | B | M1 | M2 | | | | | | | | |
| Carbon dioxide | 4382.9 3543.4 | 4049.0 | 3981.6 | 3845.7 | Ave | | 3960.50209 | | | | 7.7 | | 20.0 | | | |

Note: The M1 coefficient is the same as Ave CF for an Ave curve type. RSD is calculated for Ave curve types. RSE is used for all other types.

# FORM VI
## GC VOA BY EXTERNAL STANDARD - INITIAL CALIBRATION DATA
## RESPONSE AND CONCENTRATION

Lab Name: Eurofins Lancaster Laboratories Env  Job No.: 410-114929-1  Analy Batch No.: 331616

SDG No.:

Instrument ID: 19506-B  GC Column: HP Plot  ID: 0.53(mm)  Heated Purge: (Y/N) N

Calibration Start Date: 12/30/2022 16:32  Calibration End Date: 12/30/2022 17:13  Calibration ID: 45608

Calibration Files

| LEVEL: | LAB SAMPLE ID: | LAB FILE ID: |
|---|---|---|
| Level 1 | IC 410-331616/2 | 312022_12_30B.0002.d |
| Level 2 | IC 410-331616/3 | 312022_12_30B.0003.d |
| Level 3 | ICRT 410-331616/4 | 312022_12_30B.0004.d |
| Level 4 | IC 410-331616/5 | 312022_12_30B.0005.d |
| Level 5 | IC 410-331616/6 | 312022_12_30B.0006.d |

| ANALYTE | CURVE TYPE | RESPONSE | | | | | CONCENTRATION (UG/L) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | LVL 1 | LVL 2 | LVL 3 | LVL 4 | LVL 5 | LVL 1 | LVL 2 | LVL 3 | LVL 4 | LVL 5 |
| Carbon dioxide | Ave | 47098229 | 87021455 | 142619437 | 344380785 | 634621588 | 10746 | 21492 | 35820 | 89550 | 179100 |

Curve Type Legend

Ave = Average by Height

Report Date: 03-Jan-2023 07:38:08

Eurofins Lancaster Laboratories Environment Testing, LLC
Target Compound Quantitation Report

| | | | | | |
|---|---|---|---|---|---|
| Data File: | \\chromfs\Lancaster\ChromData\19506-B\20221230-74294.b\312022_12_30B.0002.d | | | | |
| Lims ID: | IC | | | | |
| Client ID: | | | | | |
| Sample Type: | IC | Calib Level: | 1 | | |
| Inject. Date: | 30-Dec-2022 16:32:00 | ALS Bottle#: | 0 | Worklist Smp#: | 2 |
| Purge Vol: | 1.000 mL | Dil. Factor: | 1.0000 | | |
| Sample Info: | ic | | | | |
| Misc. Info.: | 410-0074294-002 | | | | |
| Operator ID: | | Instrument ID: | 19506-B | | |
| Sublist: | chrom-RSK_CO2_19506B*sub1 | | | | |
| Method: | \\chromfs\Lancaster\ChromData\19506-B\20221230-74294.b\RSK_CO2_19506B.m | | | | |
| Limit Group: | GCV - RSK175 CO2 | | | | |
| Last Update: | 03-Jan-2023 07:38:08 | Calib Date: | 30-Dec-2022 17:05:00 | | |
| Integrator: | Genie | | | | |
| Quant Method: | External Standard | Quant By: | Initial Calibration | | |
| Last ICal File: | \\chromfs\Lancaster\ChromData\19506-B\20221230-74294.b\312022_12_30B.0006.d | | | | |
| Column 1 : | HP Plot ( 0.00 mm) | | Det: 0FIDA | | |
| Process Host: | CTX1619 | | | | |
| First Level Reviewer: WN7O | | Date: | 03-Jan-2023 07:38:08 | | |

| Compound | RT (min.) | Exp RT (min.) | Dlt RT (min.) | Response | Cal Amt ug/l | OnCol Amt ug/l | Flags |
|---|---|---|---|---|---|---|---|
| 1 Carbon dioxide | 1.980 | 1.973 | 0.007 | 47098229H | 10746 | 11892 | |

## QC Flag Legend

Processing Flags

H - Response Measured by Height

## Reagents:

EPH_CO2MS_00004 Amount Added: 30.00 Units: uL

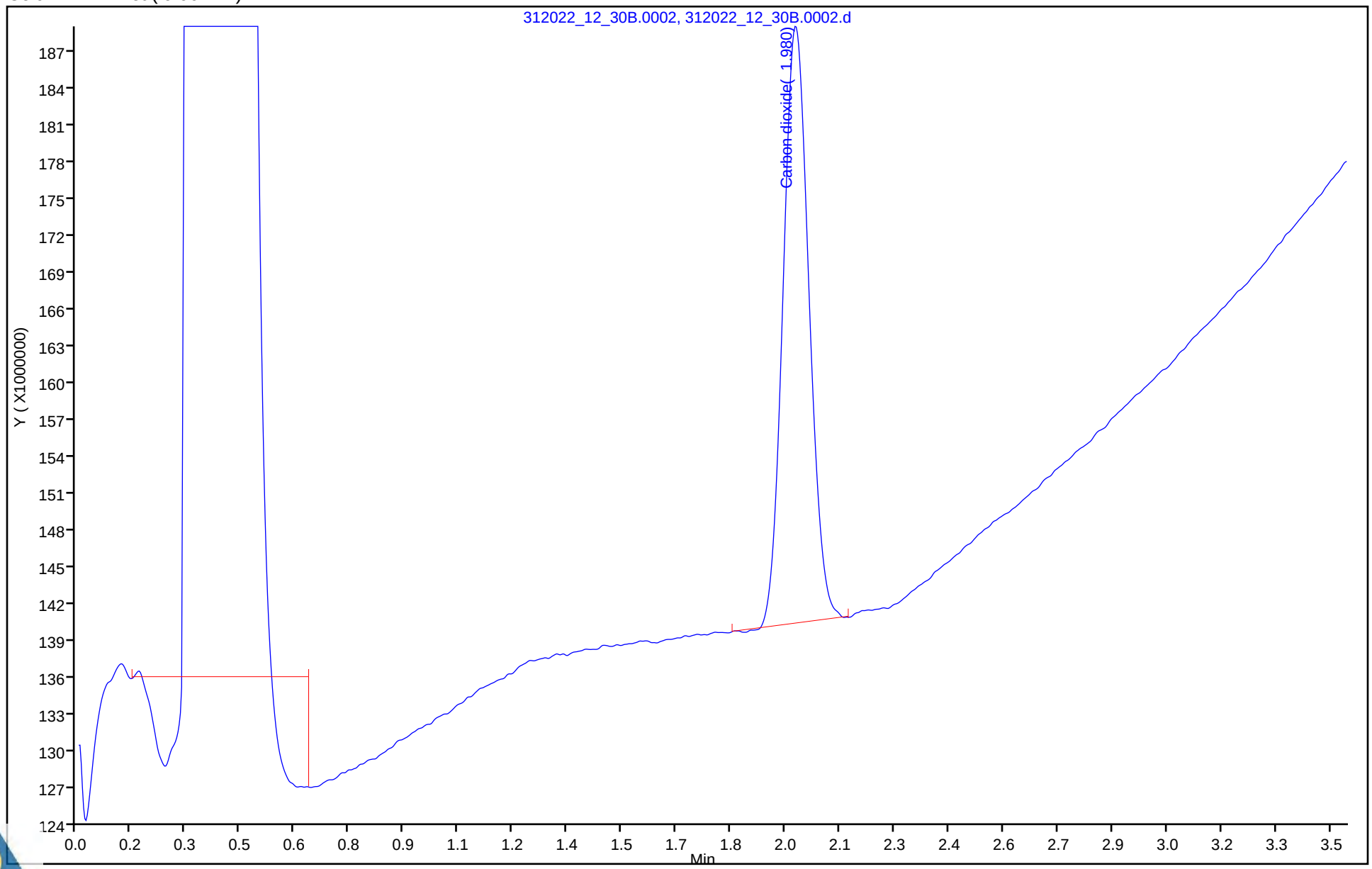
Report Date: 03-Jan-2023 07:38:08 Chrom Revision: 2.3 20-Dec-2022 14:14:06

Eurofins Lancaster Laboratories Environment Testing, LLC

Data File: \\chromfs\Lancaster\ChromData\19506-B\20221230-74294.b\312022_12_30B.0002.d

| | | | | | |
|---|---|---|---|---|---|
| Injection Date: | 30-Dec-2022 16:32:00 | Instrument ID: | 19506-B | Operator ID: | |
| Lims ID: | IC | | | Worklist Smp#: | 2 |
| Client ID: | | | | | |
| Purge Vol: | 1.000 mL | Dil. Factor: | 1.0000 | ALS Bottle#: | 0 |
| Method: | RSK_CO2_19506B | Limit Group: | GCV - RSK175 CO2 | | |

Column: HP Plot ( 0.00 mm)



Report Date: 03-Jan-2023 07:31:24

Eurofins Lancaster Laboratories Environment Testing, LLC
Target Compound Quantitation Report

| | | | | | |
|---|---|---|---|---|---|
| Data File: | \\chromfs\Lancaster\ChromData\19506-B\20221230-74294.b\312022_12_30B.0003.d | | | | |
| Lims ID: | IC | | | | |
| Client ID: | | | | | |
| Sample Type: | IC | Calib Level: | 2 | | |
| Inject. Date: | 30-Dec-2022 16:40:00 | ALS Bottle#: | 0 | Worklist Smp#: | 3 |
| Purge Vol: | 1.000 mL | Dil. Factor: | 1.0000 | | |
| Sample Info: | ic | | | | |
| Misc. Info.: | 410-0074294-003 | | | | |
| Operator ID: | | Instrument ID: | 19506-B | | |
| Sublist: | chrom-RSK_CO2_19506B*sub1 | | | | |
| Method: | \\chromfs\Lancaster\ChromData\19506-B\20221230-74294.b\RSK_CO2_19506B.m | | | | |
| Limit Group: | GCV - RSK175 CO2 | | | | |
| Last Update: | 03-Jan-2023 07:31:24 | Calib Date: | 30-Dec-2022 17:05:00 | | |
| Integrator: | Genie | | | | |
| Quant Method: | External Standard | Quant By: | Initial Calibration | | |
| Last ICal File: | \\chromfs\Lancaster\ChromData\19506-B\20221230-74294.b\312022_12_30B.0006.d | | | | |
| Column 1 : | HP Plot ( 0.00 mm) | | Det: 0FIDA | | |
| Process Host: | CTX1619 | | | | |

| Compound | RT (min.) | Exp RT (min.) | Dlt RT (min.) | Response | Cal Amt ug/l | OnCol Amt ug/l | Flags |
|---|---|---|---|---|---|---|---|
| 1 Carbon dioxide | 1.977 | 1.973 | 0.004 | 87021455H | 21492 | 21972 | |

## Reagents:

EPH_CO2MS_00004 Amount Added: 60.00 Units: uL

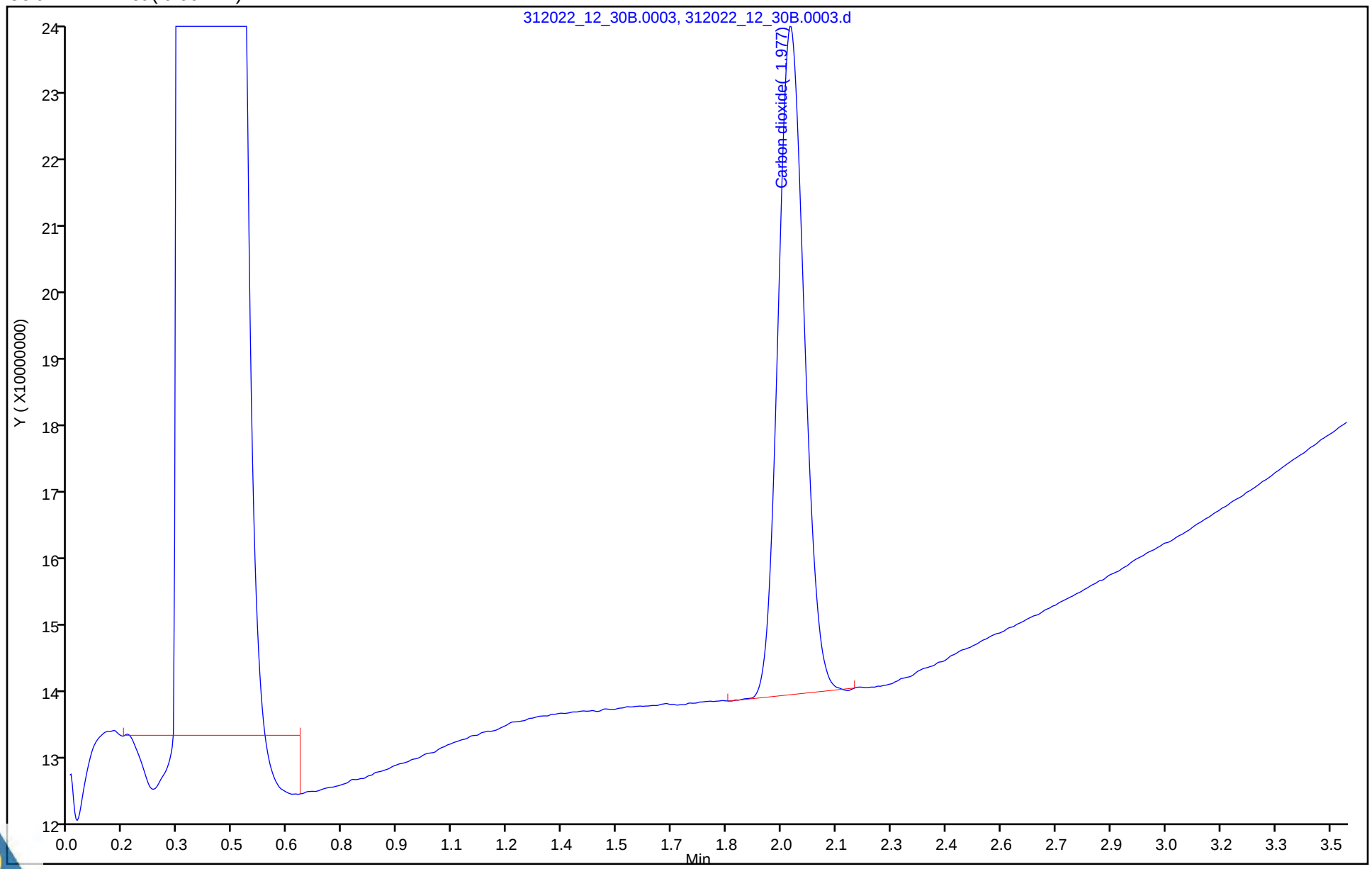
Report Date: 03-Jan-2023 07:31:24 Chrom Revision: 2.3 20-Dec-2022 14:14:06

Eurofins Lancaster Laboratories Environment Testing, LLC

Data File: \\chromfs\Lancaster\ChromData\19506-B\20221230-74294.b\312022_12_30B.0003.d

| | | | | | |
|---|---|---|---|---|---|
| Injection Date: | 30-Dec-2022 16:40:00 | Instrument ID: | 19506-B | Operator ID: | |
| Lims ID: | IC | | | Worklist Smp#: | 3 |
| Client ID: | | | | | |
| Purge Vol: | 1.000 mL | Dil. Factor: | 1.0000 | ALS Bottle#: | 0 |
| Method: | RSK_CO2_19506B | Limit Group: | GCV - RSK175 CO2 | | |

Column: HP Plot ( 0.00 mm)



Report Date: 03-Jan-2023 07:31:25

Eurofins Lancaster Laboratories Environment Testing, LLC

Target Compound Quantitation Report

| | | | | | |
|---|---|---|---|---|---|
| Data File: | \\chromfs\Lancaster\ChromData\19506-B\20221230-74294.b\312022_12_30B.0004.d | | | | |
| Lims ID: | ICRT | | | | |
| Client ID: | | | | | |
| Sample Type: | ICRT | Calib Level: | 3 | | |
| Inject. Date: | 30-Dec-2022 16:48:00 | ALS Bottle#: | 0 | Worklist Smp#: | 4 |
| Purge Vol: | 1.000 mL | Dil. Factor: | 1.0000 | | |
| Sample Info: | icrt | | | | |
| Misc. Info.: | 410-0074294-004 | | | | |
| Operator ID: | | Instrument ID: | 19506-B | | |
| Sublist: | chrom-RSK_CO2_19506B*sub1 | | | | |
| Method: | \\chromfs\Lancaster\ChromData\19506-B\20221230-74294.b\RSK_CO2_19506B.m | | | | |
| Limit Group: | GCV - RSK175 CO2 | | | | |
| Last Update: | 03-Jan-2023 07:31:25 | Calib Date: | 30-Dec-2022 17:05:00 | | |
| Integrator: | Genie | | | | |
| Quant Method: | External Standard | Quant By: | Initial Calibration | | |
| Last ICal File: | \\chromfs\Lancaster\ChromData\19506-B\20221230-74294.b\312022_12_30B.0006.d | | | | |
| Column 1 : | HP Plot ( 0.00 mm) | | Det: 0FIDA | | |
| Process Host: | CTX1619 | | | | |

| Compound | RT (min.) | Exp RT (min.) | Dlt RT (min.) | Response | Cal Amt ug/l | OnCol Amt ug/l | Flags |
|---|---|---|---|---|---|---|---|
| 1 Carbon dioxide | 1.973 | 1.973 | 0.000 | 142619437H | 35820 | 36010 | |

## Reagents:

EPH_CO2MS_00004 Amount Added: 100.00 Units: uL

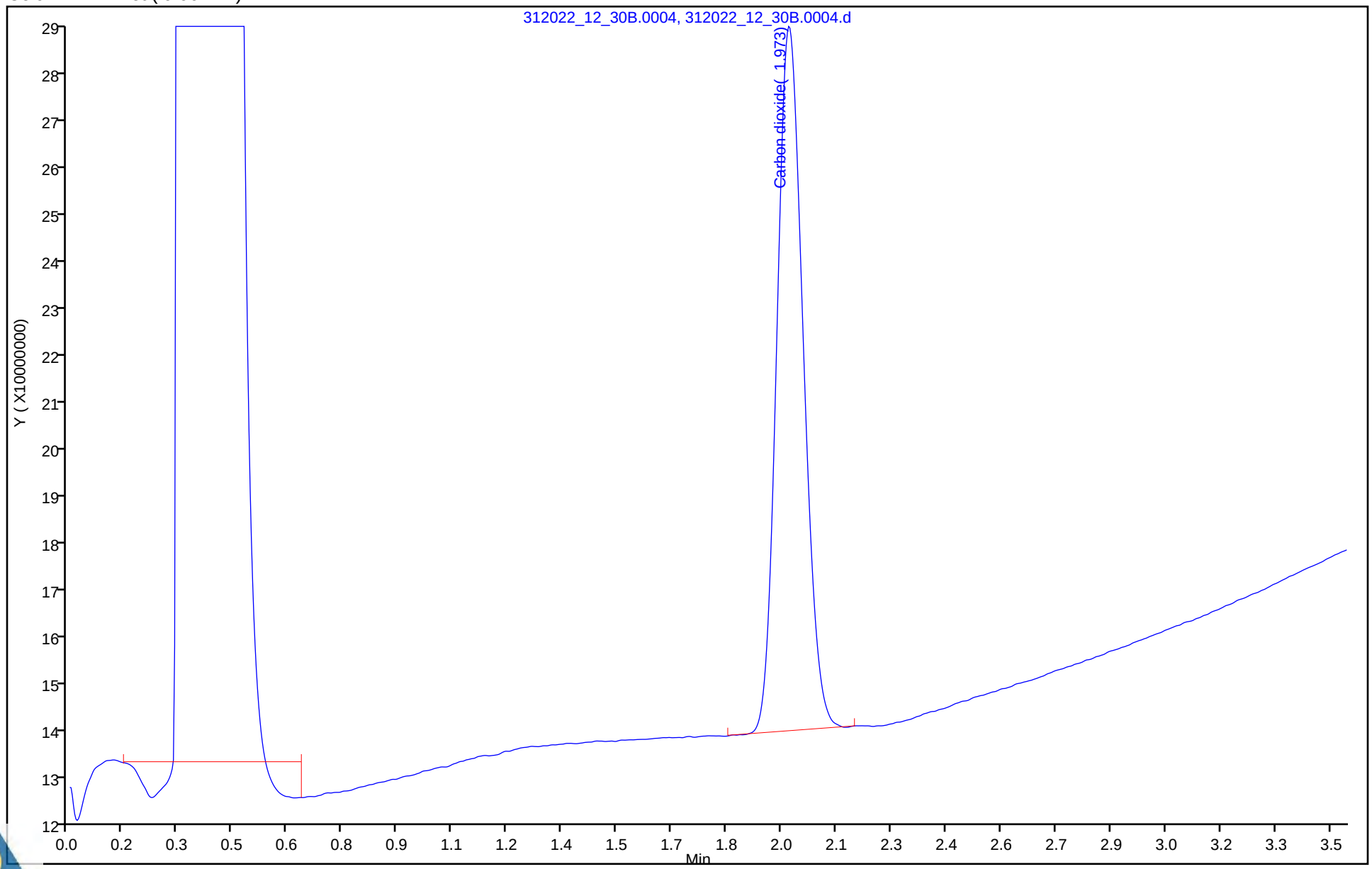
Report Date: 03-Jan-2023 07:31:25 Chrom Revision: 2.3 20-Dec-2022 14:14:06

Eurofins Lancaster Laboratories Environment Testing, LLC

Data File: \\chromfs\Lancaster\ChromData\19506-B\20221230-74294.b\312022_12_30B.0004.d

| | | | | | |
|---|---|---|---|---|---|
| Injection Date: | 30-Dec-2022 16:48:00 | Instrument ID: | 19506-B | Operator ID: | |
| Lims ID: | ICRT | | | Worklist Smp#: | 4 |
| Client ID: | | | | | |
| Purge Vol: | 1.000 mL | Dil. Factor: | 1.0000 | ALS Bottle#: | 0 |
| Method: | RSK_CO2_19506B | Limit Group: | GCV - RSK175 CO2 | | |

Column: HP Plot ( 0.00 mm)



Report Date: 03-Jan-2023 07:31:26

Eurofins Lancaster Laboratories Environment Testing, LLC

Target Compound Quantitation Report

| | | | | | |
|---|---|---|---|---|---|
| Data File: | \\chromfs\Lancaster\ChromData\19506-B\20221230-74294.b\312022_12_30B.0005.d | | | | |
| Lims ID: | IC | | | | |
| Client ID: | | | | | |
| Sample Type: | IC | Calib Level: | 4 | | |
| Inject. Date: | 30-Dec-2022 16:56:00 | ALS Bottle#: | 0 | Worklist Smp#: | 5 |
| Purge Vol: | 1.000 mL | Dil. Factor: | 1.0000 | | |
| Sample Info: | ic | | | | |
| Misc. Info.: | 410-0074294-005 | | | | |
| Operator ID: | | Instrument ID: | 19506-B | | |
| Sublist: | chrom-RSK_CO2_19506B*sub1 | | | | |
| Method: | \\chromfs\Lancaster\ChromData\19506-B\20221230-74294.b\RSK_CO2_19506B.m | | | | |
| Limit Group: | GCV - RSK175 CO2 | | | | |
| Last Update: | 03-Jan-2023 07:31:26 | Calib Date: | 30-Dec-2022 17:05:00 | | |
| Integrator: | Genie | | | | |
| Quant Method: | External Standard | Quant By: | Initial Calibration | | |
| Last ICal File: | \\chromfs\Lancaster\ChromData\19506-B\20221230-74294.b\312022_12_30B.0006.d | | | | |
| Column 1 : | HP Plot ( 0.00 mm) | | Det: 0FIDA | | |
| Process Host: | CTX1619 | | | | |

| Compound | RT (min.) | Exp RT (min.) | Dlt RT (min.) | Response | Cal Amt ug/l | OnCol Amt ug/l | Flags |
|---|---|---|---|---|---|---|---|
| 1 Carbon dioxide | 1.960 | 1.973 | -0.013 | 344380785H | 89550 | 86954 | |

## Reagents:

EPH_CO2MS_00004 Amount Added: 250.00 Units: uL

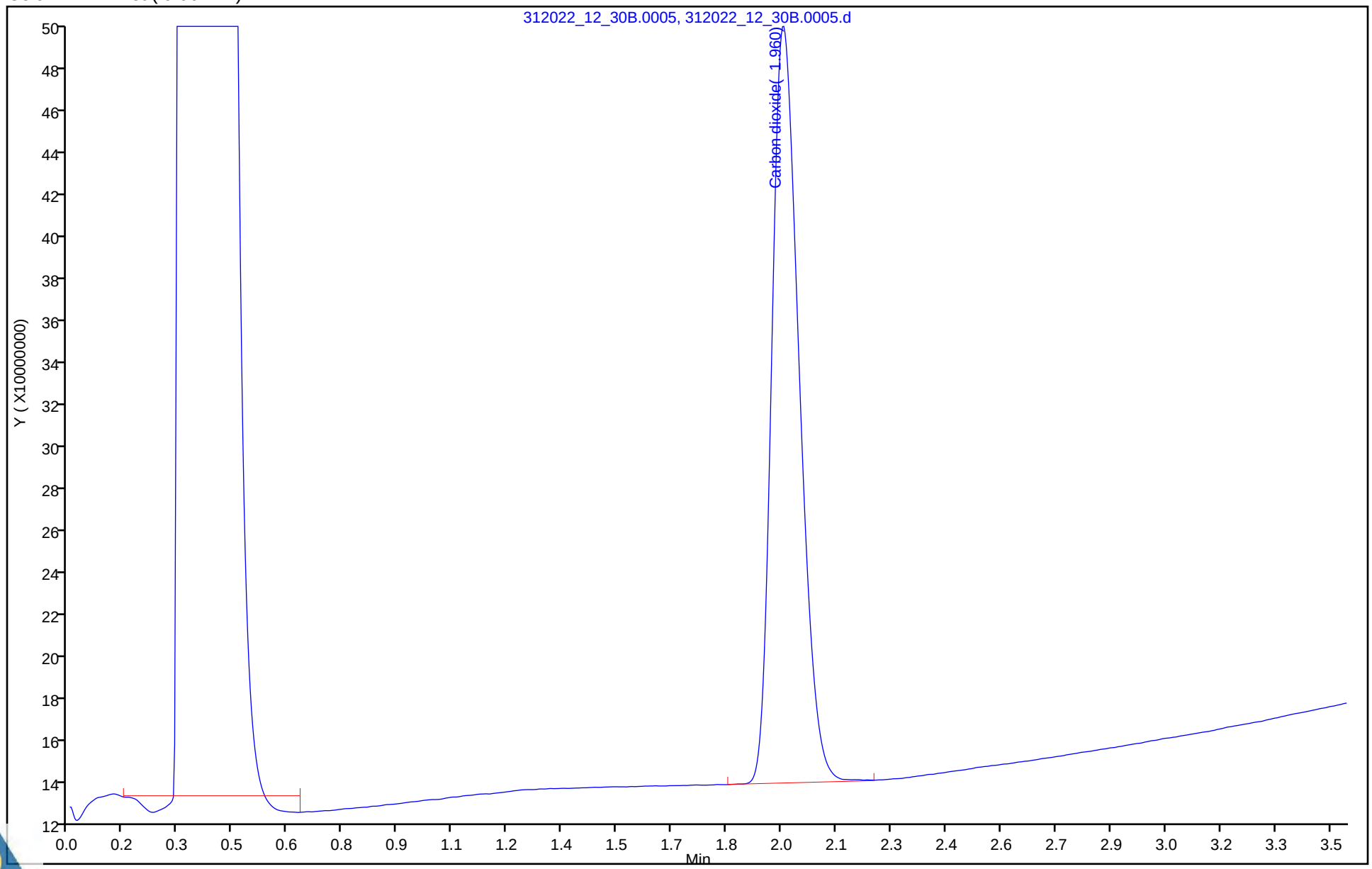
Report Date: 03-Jan-2023 07:31:26 Chrom Revision: 2.3 20-Dec-2022 14:14:06

Eurofins Lancaster Laboratories Environment Testing, LLC

Data File: \\chromfs\Lancaster\ChromData\19506-B\20221230-74294.b\312022_12_30B.0005.d

| | | | | | |
|---|---|---|---|---|---|
| Injection Date: | 30-Dec-2022 16:56:00 | Instrument ID: | 19506-B | Operator ID: | |
| Lims ID: | IC | | | Worklist Smp#: | 5 |
| Client ID: | | | | | |
| Purge Vol: | 1.000 mL | Dil. Factor: | 1.0000 | ALS Bottle#: | 0 |
| Method: | RSK_CO2_19506B | Limit Group: | GCV - RSK175 CO2 | | |

Column: HP Plot ( 0.00 mm)



Report Date: 03-Jan-2023 07:31:27

Eurofins Lancaster Laboratories Environment Testing, LLC
Target Compound Quantitation Report

| | | | | | |
|---|---|---|---|---|---|
| Data File: | \\chromfs\Lancaster\ChromData\19506-B\20221230-74294.b\312022_12_30B.0006.d | | | | |
| Lims ID: | IC | | | | |
| Client ID: | | | | | |
| Sample Type: | IC | Calib Level: | 5 | | |
| Inject. Date: | 30-Dec-2022 17:05:00 | ALS Bottle#: | 0 | Worklist Smp#: | 6 |
| Purge Vol: | 1.000 mL | Dil. Factor: | 1.0000 | | |
| Sample Info: | ic | | | | |
| Misc. Info.: | 410-0074294-006 | | | | |
| Operator ID: | | Instrument ID: | 19506-B | | |
| Sublist: | chrom-RSK_CO2_19506B*sub1 | | | | |
| Method: | \\chromfs\Lancaster\ChromData\19506-B\20221230-74294.b\RSK_CO2_19506B.m | | | | |
| Limit Group: | GCV - RSK175 CO2 | | | | |
| Last Update: | 03-Jan-2023 07:31:27 | Calib Date: | 30-Dec-2022 17:05:00 | | |
| Integrator: | Genie | | | | |
| Quant Method: | External Standard | Quant By: | Initial Calibration | | |
| Last ICal File: | \\chromfs\Lancaster\ChromData\19506-B\20221230-74294.b\312022_12_30B.0006.d | | | | |
| Column 1 : | HP Plot ( 0.00 mm) | | Det: 0FIDA | | |
| Process Host: | CTX1619 | | | | |
| First Level Reviewer: WN7O | | Date: | 30-Dec-2022 17:19:32 | | |

| Compound | RT (min.) | Exp RT (min.) | Dlt RT (min.) | Response | Cal Amt ug/l | OnCol Amt ug/l | Flags |
|---|---|---|---|---|---|---|---|
| 1 Carbon dioxide | 1.943 | 1.973 | -0.030 | 634621588H | 179100 | 160238 | a |

## QC Flag Legend

Processing Flags
H - Response Measured by Height
Review Flags
a - User Assigned ID

## Reagents:

EPH_CO2MS_00004 Amount Added: 500.00 Units: uL

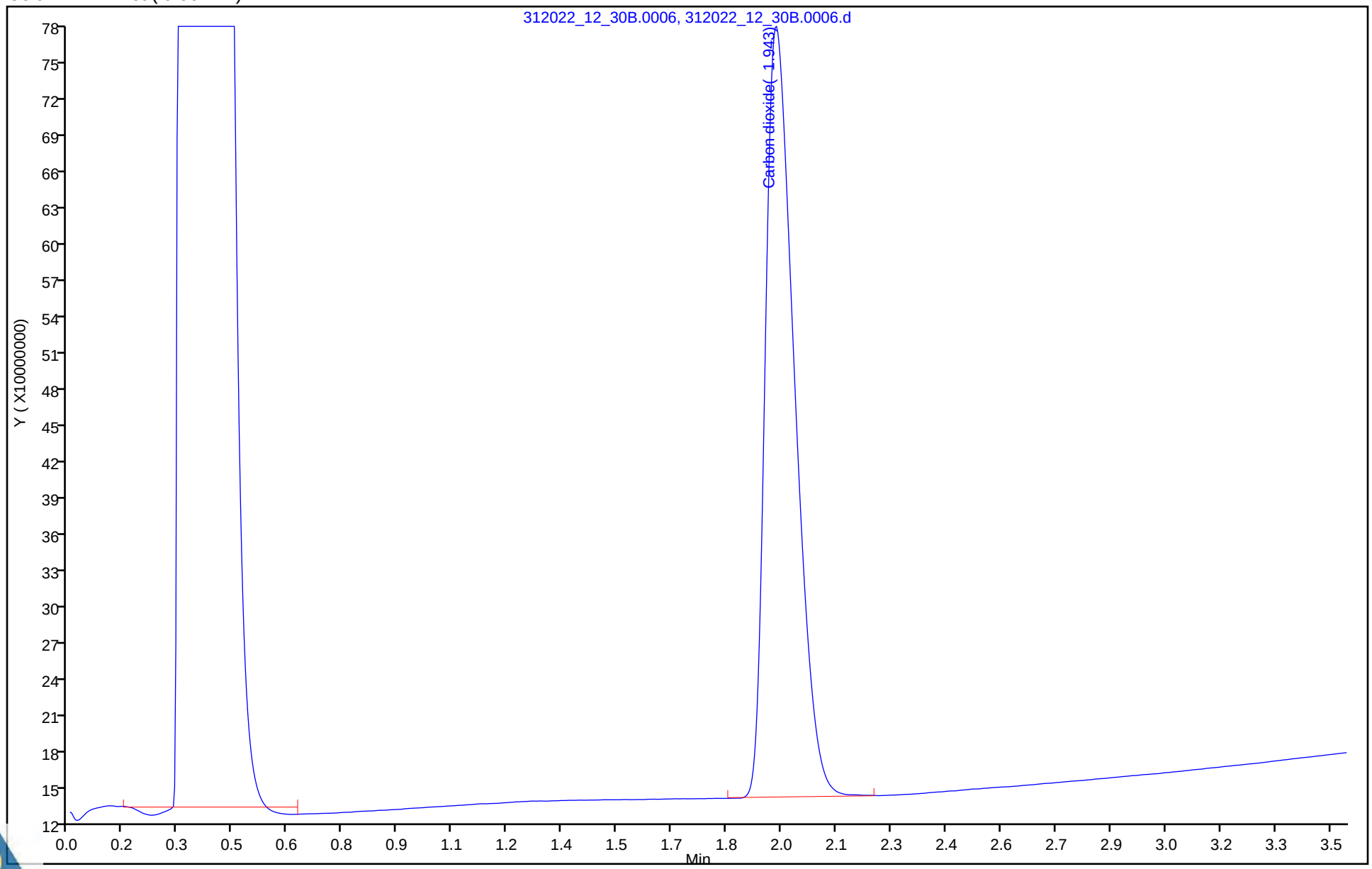
Report Date: 03-Jan-2023 07:31:27 Chrom Revision: 2.3 20-Dec-2022 14:14:06

Eurofins Lancaster Laboratories Environment Testing, LLC

Data File: \\chromfs\Lancaster\ChromData\19506-B\20221230-74294.b\312022_12_30B.0006.d

| | | | | | |
|---|---|---|---|---|---|
| Injection Date: | 30-Dec-2022 17:05:00 | Instrument ID: | 19506-B | Operator ID: | |
| Lims ID: | IC | | | Worklist Smp#: | 6 |
| Client ID: | | | | | |
| Purge Vol: | 1.000 mL | Dil. Factor: | 1.0000 | ALS Bottle#: | 0 |
| Method: | RSK_CO2_19506B | Limit Group: | GCV - RSK175 CO2 | | |

Column: HP Plot ( 0.00 mm)



Report Date: 03-Jan-2023 07:31:27 Chrom Revision: 2.3 20-Dec-2022 14:14:06 Manual Integration/User Assign Peak Report

Eurofins Lancaster Laboratories Environment Testing, LLC

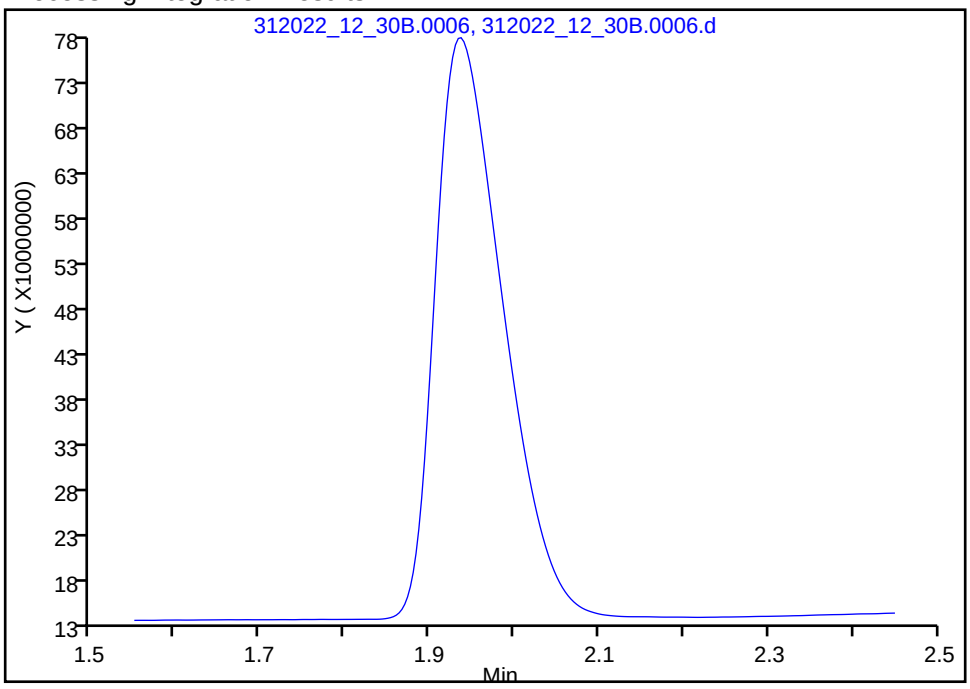
Data File: \\chromfs\Lancaster\ChromData\19506-B\20221230-74294.b\312022_12_30B.0006.d
Injection Date: 30-Dec-2022 17:05:00 Instrument ID: 19506-B
Lims ID: IC
Client ID:
Operator ID: ALS Bottle#: 0 Worklist Smp#: 6
Purge Vol: 1.000 mL Dil. Factor: 1.0000
Method: RSK_CO2_19506B Limit Group: GCV - RSK175 CO2
Column: HP Plot ( 0.00 mm) Detector 0FIDA

## 1 Carbon dioxide, CAS: 124-38-9

Signal: 1

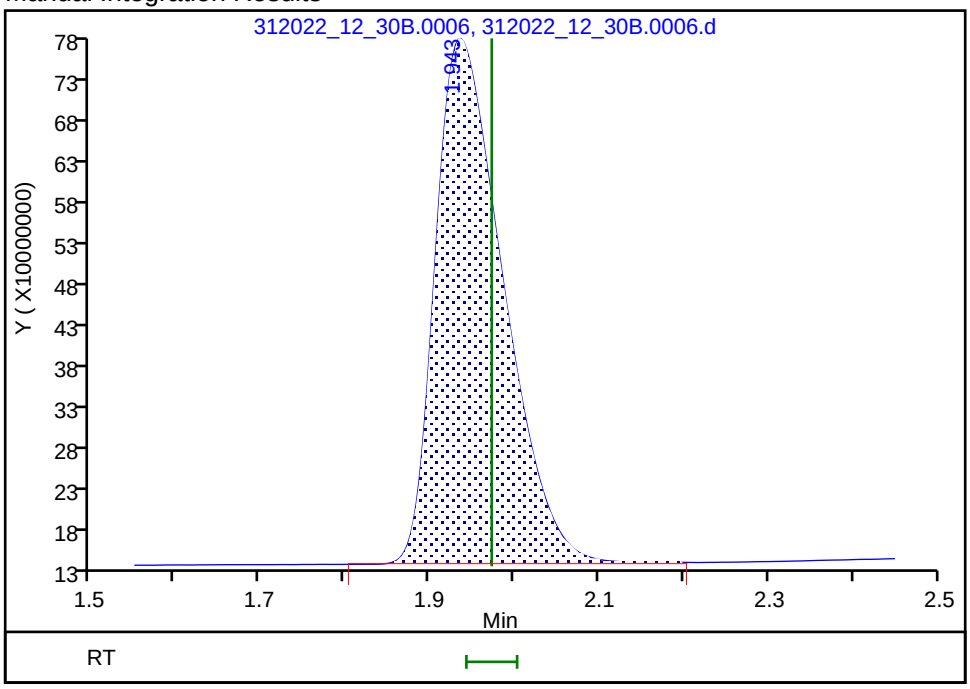
Not Detected
Expected RT: 1.97

Processing Integration Results




Manual Integration Results

RT: 1.94
Height: 634621588
Amount: 160238
Amount Units: ug/l




Reviewer: WN7O, 30-Dec-2022 17:19:26 Audit Reason: Peak assignment corrected
Audit Action: Assigned Compound ID

## Calibration / Carbon dioxide

| | |
|---|---|
| **Curve Type:** | Average |
| **Weighting:** | Conc_Sq |
| **Origin:** | Force |
| **Dependency:** | Response |
| **Calib Mode:** | ESTD |
| **Response Base:** | HEIGHT |
| **RF Rounding:** | 0 |

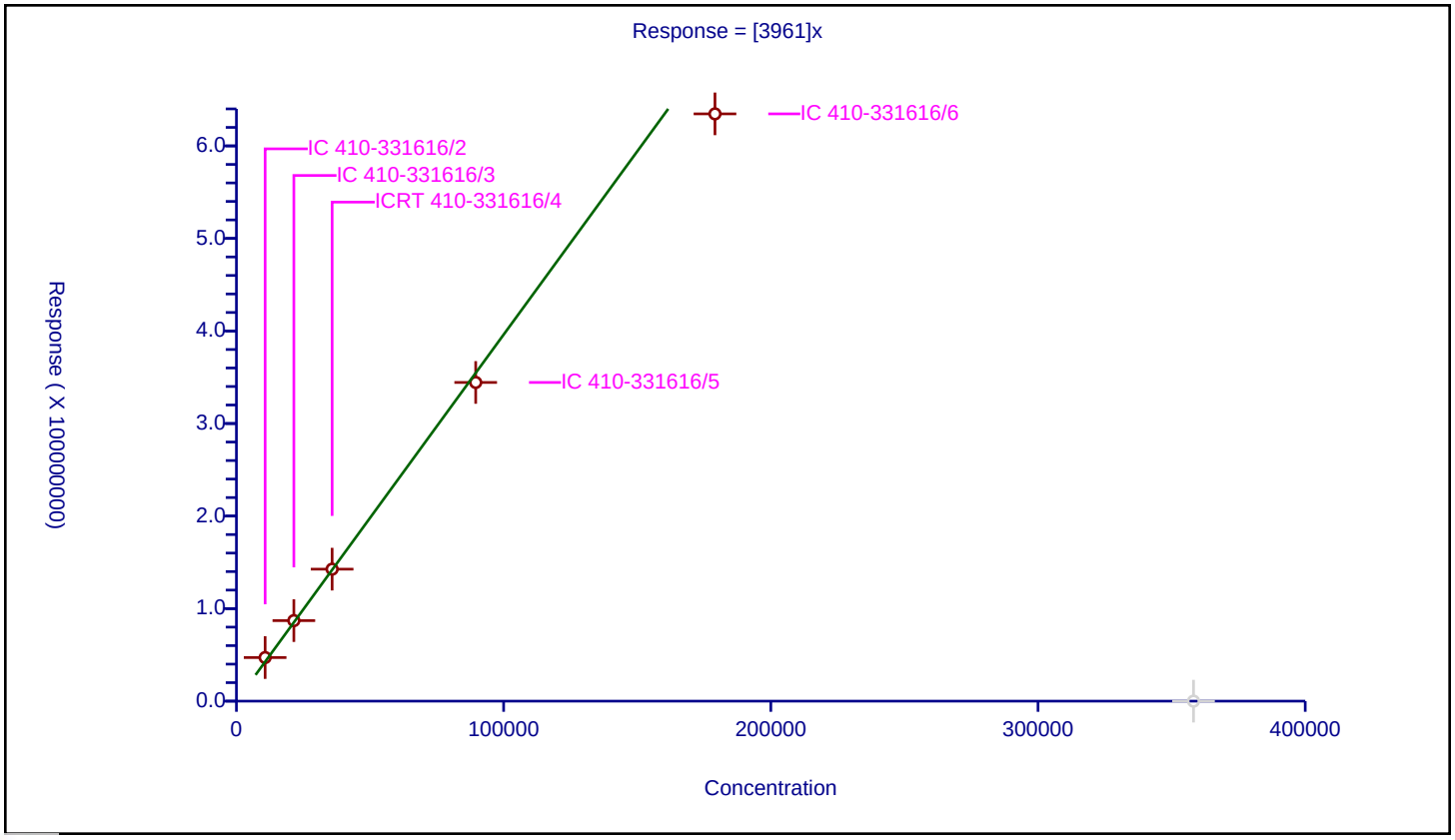
**Curve Coefficients**

| | |
|---|---|
| **Intercept:** | 0 |
| **Slope:** | 3961 |

**Error Coefficients**

| | |
|---|---|
| **Standard Error:** | 37800000 |
| **Relative Standard Error:** | 7.7 |
| **Correlation Coefficient:** | 0.999 |
| **Coefficient of Determination (Adjusted):** | 0.987 |

| ID | Level | Concentration | Response | IS Amount | IS Response | RF | Used |
|---|---|---|---|---|---|---|---|
| 1 | IC 410-331616/2 | 10746.0 | 47098229.0 | | | 4382.861437 | Y |
| 2 | IC 410-331616/3 | 21492.0 | 87021455.0 | | | 4049.016146 | Y |
| 3 | ICRT 410-331616/4 | 35820.0 | 142619437.0 | | | 3981.558822 | Y |
| 4 | IC 410-331616/5 | 89550.0 | 344380785.0 | | | 3845.681575 | Y |
| 5 | IC 410-331616/6 | 179100.0 | 634621588.0 | | | 3543.392451 | Y |
| 6 | IC 410-331616/7 | 358200.0 | 0.0 | | | 0.0 | N |



FORM VII
GC VOA CONTINUING CALIBRATION DATA

Lab Name: Eurofins Lancaster Laboratories Envi  Job No.: 410-114929-1

SDG No.:

Lab Sample ID: ICV 410-331616/10  Calibration Date: 12/30/2022 17:37

Instrument ID: 19506-B  Calib Start Date: 12/30/2022 16:32

GC Column: HP Plot  ID: 0.53(mm)  Calib End Date: 12/30/2022 17:13

Lab File ID: 312022_12_30B.0010.d  Conc. Units: ug/L  Heated Purge: (Y/N) N

| ANALYTE | CURVE TYPE | AVE CF | CF | MIN CF | CALC AMOUNT | SPIKE AMOUNT | %D | MAX %D |
|---|---|---|---|---|---|---|---|---|
| Carbon dioxide | Ave | 3961 | 3752 | | 33200 | 35000 | -5.3 | 15.0 |

FORM VII
GC VOA CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: Eurofins Lancaster Laboratories Envi  Job No.: 410-114929-1

SDG No.:

Lab Sample ID: ICV 410-331616/10  Calibration Date: 12/30/2022 17:37

Instrument ID: 19506-B  Calib Start Date: 12/30/2022 16:32

GC Column: HP Plot  ID: 0.53(mm)  Calib End Date: 12/30/2022 17:13

Lab File ID: 312022_12_30B.0010.d  Heated Purge: (Y/N) N

| Analyte | RT | RT WINDOW | |
|---|---|---|---|
| | | FROM | TO |
| Carbon dioxide | 1.98 | 1.94 | 2.00 |

Report Date: 03-Jan-2023 07:38:13

Eurofins Lancaster Laboratories Environment Testing, LLC
Target Compound Quantitation Report

| | | | | | |
|---|---|---|---|---|---|
| Data File: | \\chromfs\Lancaster\ChromData\19506-B\20221230-74294.b\312022_12_30B.0010.d | | | | |
| Lims ID: | icv | | | | |
| Client ID: | | | | | |
| Sample Type: | ICV | | | | |
| Inject. Date: | 30-Dec-2022 17:37:00 | ALS Bottle#: | 0 | Worklist Smp#: | 10 |
| Purge Vol: | 1.000 mL | Dil. Factor: | 1.0000 | | |
| Sample Info: | icv | | | | |
| Misc. Info.: | 410-0074294-010 | | | | |
| Operator ID: | | Instrument ID: | 19506-B | | |
| Sublist: | | | | | |
| Method: | \\chromfs\Lancaster\ChromData\19506-B\20221230-74294.b\RSK_CO2_19506B.m | | | | |
| Limit Group: | GCV - RSK175 CO2 | | | | |
| Last Update: | 03-Jan-2023 07:38:08 | Calib Date: | 30-Dec-2022 17:05:00 | | |
| Integrator: | Genie | | | | |
| Quant Method: | External Standard | Quant By: | Initial Calibration | | |
| Last ICal File: | \\chromfs\Lancaster\ChromData\19506-B\20221230-74294.b\312022_12_30B.0006.d | | | | |
| Column 1 : | HP Plot ( 0.00 mm) | | Det: 0FIDA | | |
| Process Host: | CTX1619 | | | | |

| Compound | RT (min.) | Exp RT (min.) | Dlt RT (min.) | Response | Cal Amt ug/l | OnCol Amt ug/l | Flags |
|---|---|---|---|---|---|---|---|
| 1 Carbon dioxide | 1.977 | 1.973 | 0.004 | 131333027 | H 35008 | 33161 | |

## Reagents:

EPH_CO2ICV_00002 Amount Added: 0.32 Units: mL

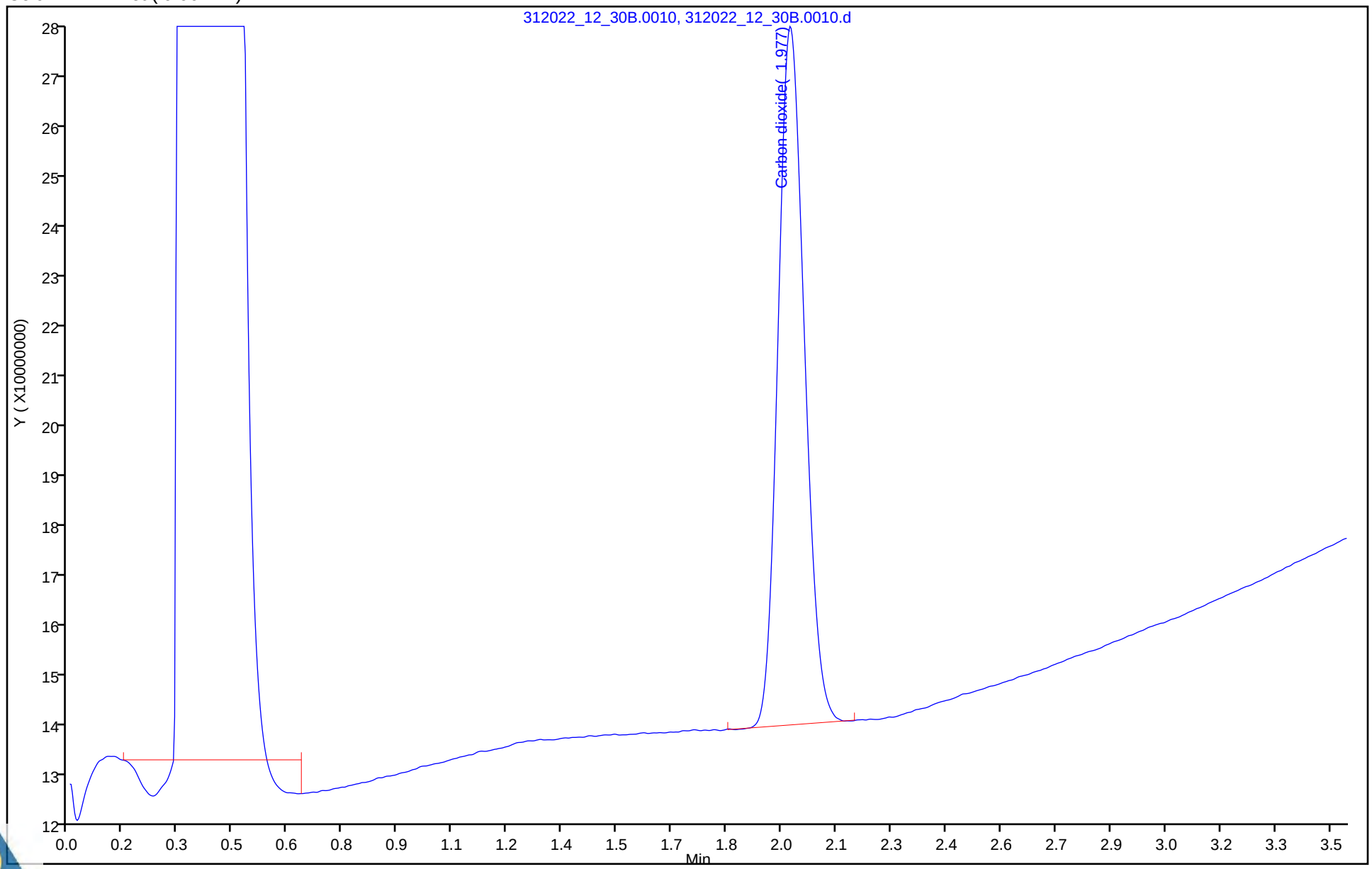
Report Date: 03-Jan-2023 07:38:13 Chrom Revision: 2.3 20-Dec-2022 14:14:06

Eurofins Lancaster Laboratories Environment Testing, LLC

Data File: \\chromfs\Lancaster\ChromData\19506-B\20221230-74294.b\312022_12_30B.0010.d

| | | | | | |
|---|---|---|---|---|---|
| Injection Date: | 30-Dec-2022 17:37:00 | Instrument ID: | 19506-B | Operator ID: | |
| Lims ID: | icv | | | Worklist Smp#: | 10 |
| Client ID: | | | | | |
| Purge Vol: | 1.000 mL | Dil. Factor: | 1.0000 | ALS Bottle#: | 0 |
| Method: | RSK_CO2_19506B | Limit Group: | GCV - RSK175 CO2 | | |

Column: HP Plot ( 0.00 mm)



FORM VII
GC VOA CONTINUING CALIBRATION DATA

Lab Name: Eurofins Lancaster Laboratories Envi  Job No.: 410-114929-1

SDG No.:

Lab Sample ID: CCVRT 410-343395/4  Calibration Date: 02/10/2023 08:51

Instrument ID: 19506-B  Calib Start Date: 12/30/2022 16:32

GC Column: HP Plot  ID: 0.53(mm)  Calib End Date: 12/30/2022 17:13

Lab File ID: 312023_02_10BB.0004.d  Conc. Units: ug/L  Heated Purge: (Y/N) N

| ANALYTE | CURVE TYPE | AVE CF | CF | MIN CF | CALC AMOUNT | SPIKE AMOUNT | %D | MAX %D |
|---|---|---|---|---|---|---|---|---|
| Carbon dioxide | Ave | 3961 | 3839 | | 34700 | 35800 | -3.1 | 15.0 |

FORM VII
GC VOA CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: Eurofins Lancaster Laboratories Envi  Job No.: 410-114929-1

SDG No.:

Lab Sample ID: CCVRT 410-343395/4  Calibration Date: 02/10/2023 08:51

Instrument ID: 19506-B  Calib Start Date: 12/30/2022 16:32

GC Column: HP Plot  ID: 0.53(mm)  Calib End Date: 12/30/2022 17:13

Lab File ID: 312023_02_10BB.0004.d  Heated Purge: (Y/N) N

| Analyte | RT | RT WINDOW | |
|---|---|---|---|
| | | FROM | TO |
| Carbon dioxide | 2.08 | 2.05 | 2.11 |

Report Date: 10-Feb-2023 13:02:44

Eurofins Lancaster Laboratories Environment Testing, LLC

Target Compound Quantitation Report

| | | | | | |
|---|---|---|---|---|---|
| Data File: | \\chromfs\Lancaster\ChromData\19506-B\20230210-76805.b\312023_02_10BB.0004.d | | | | |
| Lims ID: | ccvrt | | | | |
| Client ID: | | | | | |
| Sample Type: | CCVRT | | | | |
| Inject. Date: | 10-Feb-2023 08:51:00 | ALS Bottle#: | 0 | Worklist Smp#: | 4 |
| Injection Vol: | 1.0 uL | Dil. Factor: | 1.0000 | | |
| Sample Info: | ccvrt | | | | |
| Misc. Info.: | 410-0076805-004 | | | | |
| Operator ID: | | Instrument ID: | 19506-B | | |
| Sublist: | chrom-RSK_CO2_19506B*sub1 | | | | |
| Method: | \\chromfs\Lancaster\ChromData\19506-B\20230210-76805.b\RSK_CO2_19506B.m | | | | |
| Limit Group: | GCV - RSK175 CO2 | | | | |
| Last Update: | 10-Feb-2023 13:02:44 | Calib Date: | 30-Dec-2022 17:05:00 | | |
| Integrator: | Genie | | | | |
| Quant Method: | External Standard | Quant By: | Initial Calibration | | |
| Last ICal File: | \\chromfs\Lancaster\ChromData\19506-B\20221230-74294.b\312022_12_30B.0006.d | | | | |
| Column 1 : | HP Plot ( 0.00 mm) | | Det: 0FIDA | | |
| Process Host: | CTX1629 | | | | |

| Compound | RT (min.) | Exp RT (min.) | Dlt RT (min.) | Response | Cal Amt ug/l | OnCol Amt ug/l | Flags |
|---|---|---|---|---|---|---|---|
| 1 Carbon dioxide | 2.076 | 2.076 | 0.000 | 137521350H | 35820 | 34723 | |

## Reagents:

EPH_CO2MS_00004 Amount Added: 0.10 Units: mL

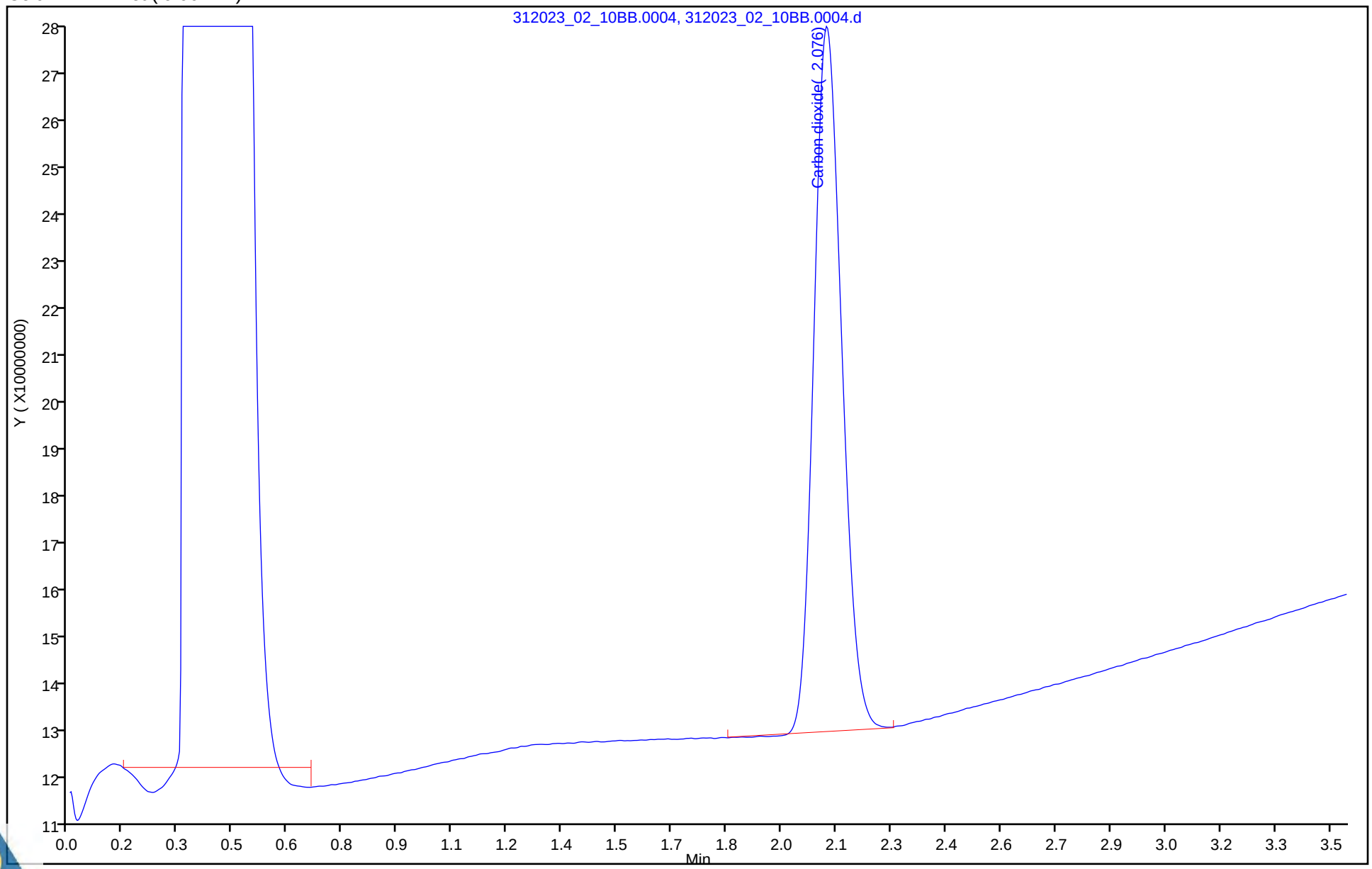
Report Date: 10-Feb-2023 13:02:44 Chrom Revision: 2.3 01-Feb-2023 13:23:06

Eurofins Lancaster Laboratories Environment Testing, LLC

Data File: \\chromfs\Lancaster\ChromData\19506-B\20230210-76805.b\312023_02_10BB.0004.d

| | | | | | |
|---|---|---|---|---|---|
| Injection Date: | 10-Feb-2023 08:51:00 | Instrument ID: | 19506-B | Operator ID: | |
| Lims ID: | ccvrt | | | Worklist Smp#: | 4 |
| Client ID: | | | | | |
| Injection Vol: | 1.0 uL | Dil. Factor: | 1.0000 | ALS Bottle#: | 0 |
| Method: | RSK_CO2_19506B | Limit Group: | GCV - RSK175 CO2 | | |

Column: HP Plot ( 0.00 mm)



FORM VII
GC VOA CONTINUING CALIBRATION DATA

Lab Name: Eurofins Lancaster Laboratories Envi  Job No.: 410-114929-1

SDG No.:

Lab Sample ID: CCV 410-343395/8  Calibration Date: 02/10/2023 09:28

Instrument ID: 19506-B  Calib Start Date: 12/30/2022 16:32

GC Column: HP Plot  ID: 0.53(mm)  Calib End Date: 12/30/2022 17:13

Lab File ID: 312023_02_10BB.0008.d  Conc. Units: ug/L  Heated Purge: (Y/N) N

| ANALYTE | CURVE TYPE | AVE CF | CF | MIN CF | CALC AMOUNT | SPIKE AMOUNT | %D | MAX %D |
|---|---|---|---|---|---|---|---|---|
| Carbon dioxide | Ave | 3961 | 3776 | | 34200 | 35800 | -4.7 | 15.0 |

FORM VII
GC VOA CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: Eurofins Lancaster Laboratories Envi  Job No.: 410-114929-1

SDG No.:

Lab Sample ID: CCV 410-343395/8  Calibration Date: 02/10/2023 09:28

Instrument ID: 19506-B  Calib Start Date: 12/30/2022 16:32

GC Column: HP Plot  ID: 0.53(mm)  Calib End Date: 12/30/2022 17:13

Lab File ID: 312023_02_10BB.0008.d  Heated Purge: (Y/N) N

| Analyte | RT | RT WINDOW | |
|---|---|---|---|
| | | FROM | TO |
| Carbon dioxide | 2.08 | 2.05 | 2.11 |

Report Date: 10-Feb-2023 13:02:46

Eurofins Lancaster Laboratories Environment Testing, LLC
Target Compound Quantitation Report

| | | | | | |
|---|---|---|---|---|---|
| Data File: | \\chromfs\Lancaster\ChromData\19506-B\20230210-76805.b\312023_02_10BB.0008.d | | | | |
| Lims ID: | ccv | | | | |
| Client ID: | | | | | |
| Sample Type: | CCV | | | | |
| Inject. Date: | 10-Feb-2023 09:28:00 | ALS Bottle#: | 0 | Worklist Smp#: | 8 |
| Injection Vol: | 1.0 uL | Dil. Factor: | 1.0000 | | |
| Sample Info: | | | | | |
| Misc. Info.: | 410-0076805-008 | | | | |
| Operator ID: | | Instrument ID: | 19506-B | | |
| Sublist: | chrom-RSK_CO2_19506B*sub1 | | | | |
| Method: | \\chromfs\Lancaster\ChromData\19506-B\20230210-76805.b\RSK_CO2_19506B.m | | | | |
| Limit Group: | GCV - RSK175 CO2 | | | | |
| Last Update: | 10-Feb-2023 13:02:46 | Calib Date: | 30-Dec-2022 17:05:00 | | |
| Integrator: | Genie | | | | |
| Quant Method: | External Standard | Quant By: | Initial Calibration | | |
| Last ICal File: | \\chromfs\Lancaster\ChromData\19506-B\20221230-74294.b\312022_12_30B.0006.d | | | | |
| Column 1 : | HP Plot ( 0.00 mm) | | Det: 0FIDA | | |
| Process Host: | CTX1629 | | | | |

| Compound | RT (min.) | Exp RT (min.) | Dlt RT (min.) | Response | Cal Amt ug/l | OnCol Amt ug/l | Flags |
|---|---|---|---|---|---|---|---|
| 1 Carbon dioxide | 2.076 | 2.076 | 0.000 | 135260012H | 35820 | 34152 | |

## Reagents:

EPH_CO2MS_00004 Amount Added: 100.00 Units: uL

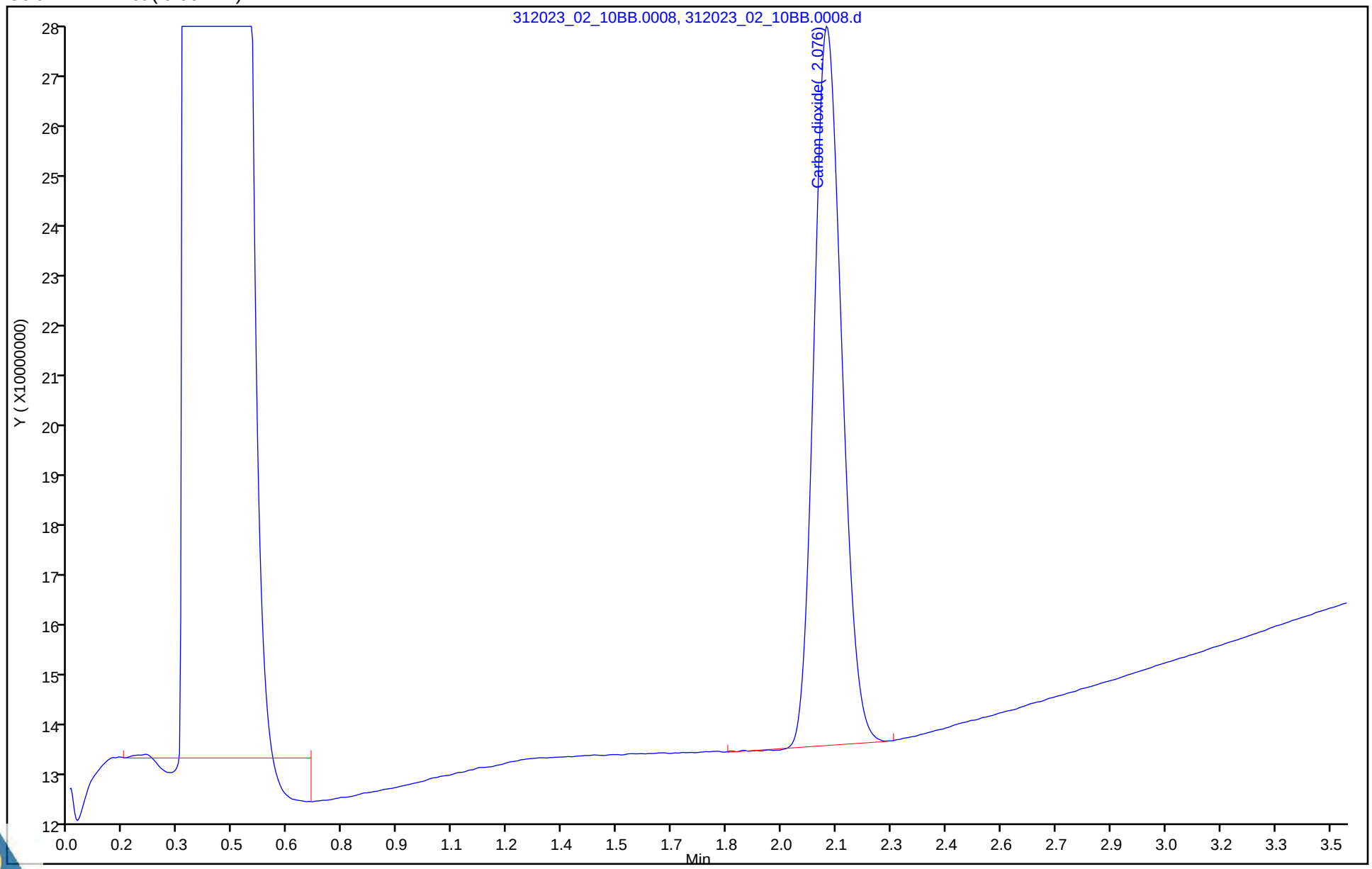
Report Date: 10-Feb-2023 13:02:46 Chrom Revision: 2.3 01-Feb-2023 13:23:06

Eurofins Lancaster Laboratories Environment Testing, LLC

Data File: \\chromfs\Lancaster\ChromData\19506-B\20230210-76805.b\312023_02_10BB.0008.d

| | | | | | |
|---|---|---|---|---|---|
| Injection Date: | 10-Feb-2023 09:28:00 | Instrument ID: | 19506-B | Operator ID: | |
| Lims ID: | ccv | | | Worklist Smp#: | 8 |
| Client ID: | | | | | |
| Injection Vol: | 1.0 uL | Dil. Factor: | 1.0000 | ALS Bottle#: | 0 |
| Method: | RSK_CO2_19506B | Limit Group: | GCV - RSK175 CO2 | | |

Column: HP Plot ( 0.00 mm)



FORM VII
GC VOA CONTINUING CALIBRATION DATA

Lab Name: Eurofins Lancaster Laboratories Envi  Job No.: 410-114929-1

SDG No.:

Lab Sample ID: CCV 410-343395/17  Calibration Date: 02/10/2023 10:42

Instrument ID: 19506-B  Calib Start Date: 12/30/2022 16:32

GC Column: HP Plot  ID: 0.53(mm)  Calib End Date: 12/30/2022 17:13

Lab File ID: 312023_02_10BB.0017.d  Conc. Units: ug/L  Heated Purge: (Y/N) N

| ANALYTE | CURVE TYPE | AVE CF | CF | MIN CF | CALC AMOUNT | SPIKE AMOUNT | %D | MAX %D |
|---|---|---|---|---|---|---|---|---|
| Carbon dioxide | Ave | 3961 | 3729 | | 33700 | 35800 | -5.9 | 15.0 |

FORM VII
GC VOA CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: Eurofins Lancaster Laboratories Envi  Job No.: 410-114929-1

SDG No.:

Lab Sample ID: CCV 410-343395/17  Calibration Date: 02/10/2023 10:42

Instrument ID: 19506-B  Calib Start Date: 12/30/2022 16:32

GC Column: HP Plot  ID: 0.53(mm)  Calib End Date: 12/30/2022 17:13

Lab File ID: 312023_02_10BB.0017.d  Heated Purge: (Y/N) N

| Analyte | RT | RT WINDOW | |
|---|---|---|---|
| | | FROM | TO |
| Carbon dioxide | 2.08 | 2.05 | 2.11 |

Report Date: 10-Feb-2023 13:02:50

Eurofins Lancaster Laboratories Environment Testing, LLC

Target Compound Quantitation Report

| | | | | | |
|---|---|---|---|---|---|
| Data File: | \\chromfs\Lancaster\ChromData\19506-B\20230210-76805.b\312023_02_10BB.0017.d | | | | |
| Lims ID: | ccv | | | | |
| Client ID: | | | | | |
| Sample Type: | CCV | | | | |
| Inject. Date: | 10-Feb-2023 10:42:00 | ALS Bottle#: | 0 | Worklist Smp#: | 17 |
| Injection Vol: | 1.0 uL | Dil. Factor: | 1.0000 | | |
| Sample Info: | | | | | |
| Misc. Info.: | 410-0076805-017 | | | | |
| Operator ID: | | Instrument ID: | 19506-B | | |
| Sublist: | chrom-RSK_CO2_19506B*sub1 | | | | |
| Method: | \\chromfs\Lancaster\ChromData\19506-B\20230210-76805.b\RSK_CO2_19506B.m | | | | |
| Limit Group: | GCV - RSK175 CO2 | | | | |
| Last Update: | 10-Feb-2023 13:02:50 | Calib Date: | 30-Dec-2022 17:05:00 | | |
| Integrator: | Genie | | | | |
| Quant Method: | External Standard | Quant By: | Initial Calibration | | |
| Last ICal File: | \\chromfs\Lancaster\ChromData\19506-B\20221230-74294.b\312022_12_30B.0006.d | | | | |
| Column 1 : | HP Plot ( 0.00 mm) | | Det: 0FIDA | | |
| Process Host: | CTX1629 | | | | |

| Compound | RT (min.) | Exp RT (min.) | Dlt RT (min.) | Response | Cal Amt ug/l | OnCol Amt ug/l | Flags |
|---|---|---|---|---|---|---|---|
| 1 Carbon dioxide | 2.075 | 2.076 | -0.001 | 133555329 | H 35820 | 33722 | |

## Reagents:

EPH_CO2MS_00004 Amount Added: 100.00 Units: uL

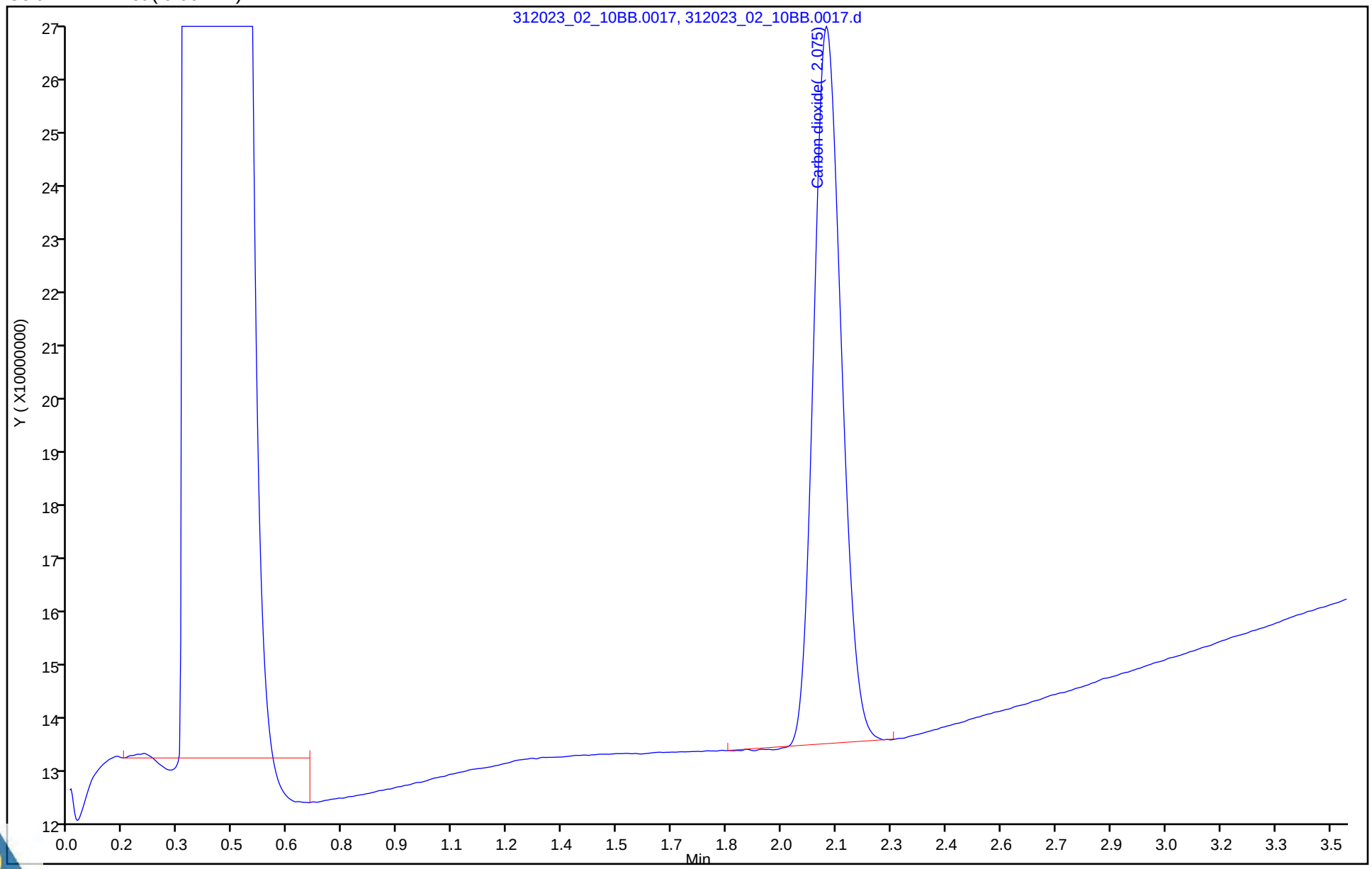
Report Date: 10-Feb-2023 13:02:50 Chrom Revision: 2.3 01-Feb-2023 13:23:06

Eurofins Lancaster Laboratories Environment Testing, LLC

Data File: \\chromfs\Lancaster\ChromData\19506-B\20230210-76805.b\312023_02_10BB.0017.d

| | | | | | |
|---|---|---|---|---|---|
| Injection Date: | 10-Feb-2023 10:42:00 | Instrument ID: | 19506-B | Operator ID: | |
| Lims ID: | ccv | | | Worklist Smp#: | 17 |
| Client ID: | | | | | |
| Injection Vol: | 1.0 uL | Dil. Factor: | 1.0000 | ALS Bottle#: | 0 |
| Method: | RSK_CO2_19506B | Limit Group: | GCV - RSK175 CO2 | | |

Column: HP Plot ( 0.00 mm)



FORM I
GC VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Lancaster Laboratories Environment Testing, LLC  Job No.: 410-114929-1

SDG No.:

Client Sample ID:  Lab Sample ID: MB 410-343431/1-A

Matrix: Water  Lab File ID: 312023_02_10BB.0006.d

Analysis Method: RSK-175  Date Collected:

Sample wt/vol: 5(mL)  Date Analyzed: 02/10/2023 09:12

Soil Aliquot Vol:  Dilution Factor: 1

Soil Extract Vol.:  GC Column: HP Plot  ID: 0.53(mm)

Purge Volume:  Heated Purge: (Y/N) N  pH:

% Moisture:  % Solids:  Level: (low/med) Low

Analysis Batch No.: 343395  Units: ug/L

| CAS NO. | COMPOUND NAME | RESULT | Q | LOQ | DL |
|---|---|---|---|---|---|
| 124-38-9 | Carbon dioxide | 2600 | U | 12000 | 2600 |

Report Date: 10-Feb-2023 13:02:45

Eurofins Lancaster Laboratories Environment Testing, LLC
Target Compound Quantitation Report

| | | | | | |
|---|---|---|---|---|---|
| Data File: | \\chromfs\Lancaster\ChromData\19506-B\20230210-76805.b\312023_02_10BB.0006.d | | | | |
| Lims ID: | MB 410-343431/1-A | | | | |
| Client ID: | | | | | |
| Sample Type: | MB | | | | |
| Inject. Date: | 10-Feb-2023 09:12:00 | ALS Bottle#: | 0 | Worklist Smp#: | 6 |
| Injection Vol: | 1.0 uL | Dil. Factor: | 1.0000 | | |
| Sample Info: | MB | | | | |
| Misc. Info.: | 410-0076805-006 | | | | |
| Operator ID: | | Instrument ID: | 19506-B | | |
| Method: | \\chromfs\Lancaster\ChromData\19506-B\20230210-76805.b\RSK_CO2_19506B.m | | | | |
| Limit Group: | GCV - RSK175 CO2 | | | | |
| Last Update: | 10-Feb-2023 13:02:44 | Calib Date: | 30-Dec-2022 17:05:00 | | |
| Integrator: | Genie | | | | |
| Quant Method: | External Standard | Quant By: | Initial Calibration | | |
| Last ICal File: | \\chromfs\Lancaster\ChromData\19506-B\20221230-74294.b\312022_12_30B.0006.d | | | | |
| Column 1 : | HP Plot ( 0.00 mm) | | Det: 0FIDA | | |
| Process Host: | CTX1629 | | | | |

| Compound | RT (min.) | Exp RT (min.) | Dlt RT (min.) | Response | Cal Amt ug/l | OnCol Amt ug/l | Flags |
|---|---|---|---|---|---|---|---|
| 1 Carbon dioxide | 2.090 | 2.076 | 0.014 | 2514756H | | 635.0 | |

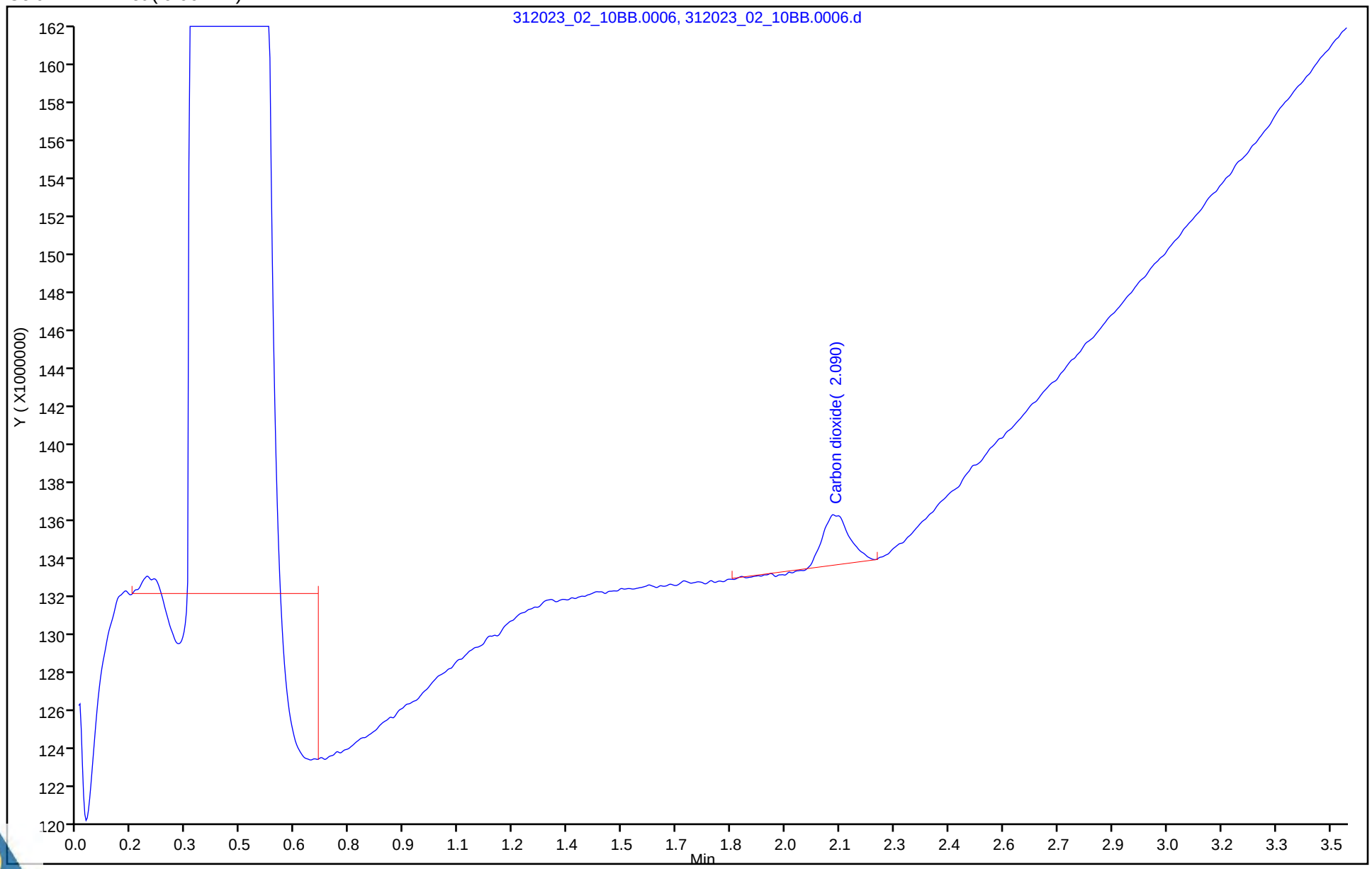
Report Date: 10-Feb-2023 13:02:45 Chrom Revision: 2.3 01-Feb-2023 13:23:06

Eurofins Lancaster Laboratories Environment Testing, LLC

Data File: \\chromfs\Lancaster\ChromData\19506-B\20230210-76805.b\312023_02_10BB.0006.d

| | | | | | |
|---|---|---|---|---|---|
| Injection Date: | 10-Feb-2023 09:12:00 | Instrument ID: | 19506-B | Operator ID: | |
| Lims ID: | MB 410-343431/1-A | | | Worklist Smp#: | 6 |
| Client ID: | | | | | |
| Injection Vol: | 1.0 uL | Dil. Factor: | 1.0000 | ALS Bottle#: | 0 |
| Method: | RSK_CO2_19506B | Limit Group: | GCV - RSK175 CO2 | | |

Column: HP Plot ( 0.00 mm)



FORM I
GC VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Lancaster Laboratories Environment Testing, LLC  Job No.: 410-114929-1

SDG No.:

Client Sample ID:  Lab Sample ID: LCS 410-343431/2-A

Matrix: Water  Lab File ID: 312023_02_10BB.0007.d

Analysis Method: RSK-175  Date Collected:

Sample wt/vol: 5(mL)  Date Analyzed: 02/10/2023 09:21

Soil Aliquot Vol:  Dilution Factor: 1

Soil Extract Vol.:  GC Column: HP Plot  ID: 0.53(mm)

Purge Volume:  Heated Purge: (Y/N) N  pH:

% Moisture:  % Solids:  Level: (low/med) Low

Analysis Batch No.: 343395  Units: ug/L

| CAS NO. | COMPOUND NAME | RESULT | Q | LOQ | DL |
|---|---|---|---|---|---|
| 124-38-9 | Carbon dioxide | 33700 | | 12000 | 2600 |

Report Date: 10-Feb-2023 13:02:45

Eurofins Lancaster Laboratories Environment Testing, LLC
Target Compound Quantitation Report

| | | | | | |
|---|---|---|---|---|---|
| Data File: | \\chromfs\Lancaster\ChromData\19506-B\20230210-76805.b\312023_02_10BB.0007.d | | | | |
| Lims ID: | LCS 410-343431/2-A | | | | |
| Client ID: | | | | | |
| Sample Type: | LCS | | | | |
| Inject. Date: | 10-Feb-2023 09:21:00 | ALS Bottle#: | 0 | Worklist Smp#: | 7 |
| Injection Vol: | 1.0 uL | Dil. Factor: | 1.0000 | | |
| Sample Info: | LCS | | | | |
| Misc. Info.: | 410-0076805-007 | | | | |
| Operator ID: | | Instrument ID: | 19506-B | | |
| Method: | \\chromfs\Lancaster\ChromData\19506-B\20230210-76805.b\RSK_CO2_19506B.m | | | | |
| Limit Group: | GCV - RSK175 CO2 | | | | |
| Last Update: | 10-Feb-2023 13:02:44 | Calib Date: | 30-Dec-2022 17:05:00 | | |
| Integrator: | Genie | | | | |
| Quant Method: | External Standard | Quant By: | Initial Calibration | | |
| Last ICal File: | \\chromfs\Lancaster\ChromData\19506-B\20221230-74294.b\312022_12_30B.0006.d | | | | |
| Column 1 : | HP Plot ( 0.00 mm) | | Det: 0FIDA | | |
| Process Host: | CTX1629 | | | | |

| Compound | RT (min.) | Exp RT (min.) | Dlt RT (min.) | Response | Cal Amt ug/l | OnCol Amt ug/l | Flags |
|---|---|---|---|---|---|---|---|
| 1 Carbon dioxide | 2.075 | 2.076 | -0.001 | 133541286 | H 35820 | 33718 | |

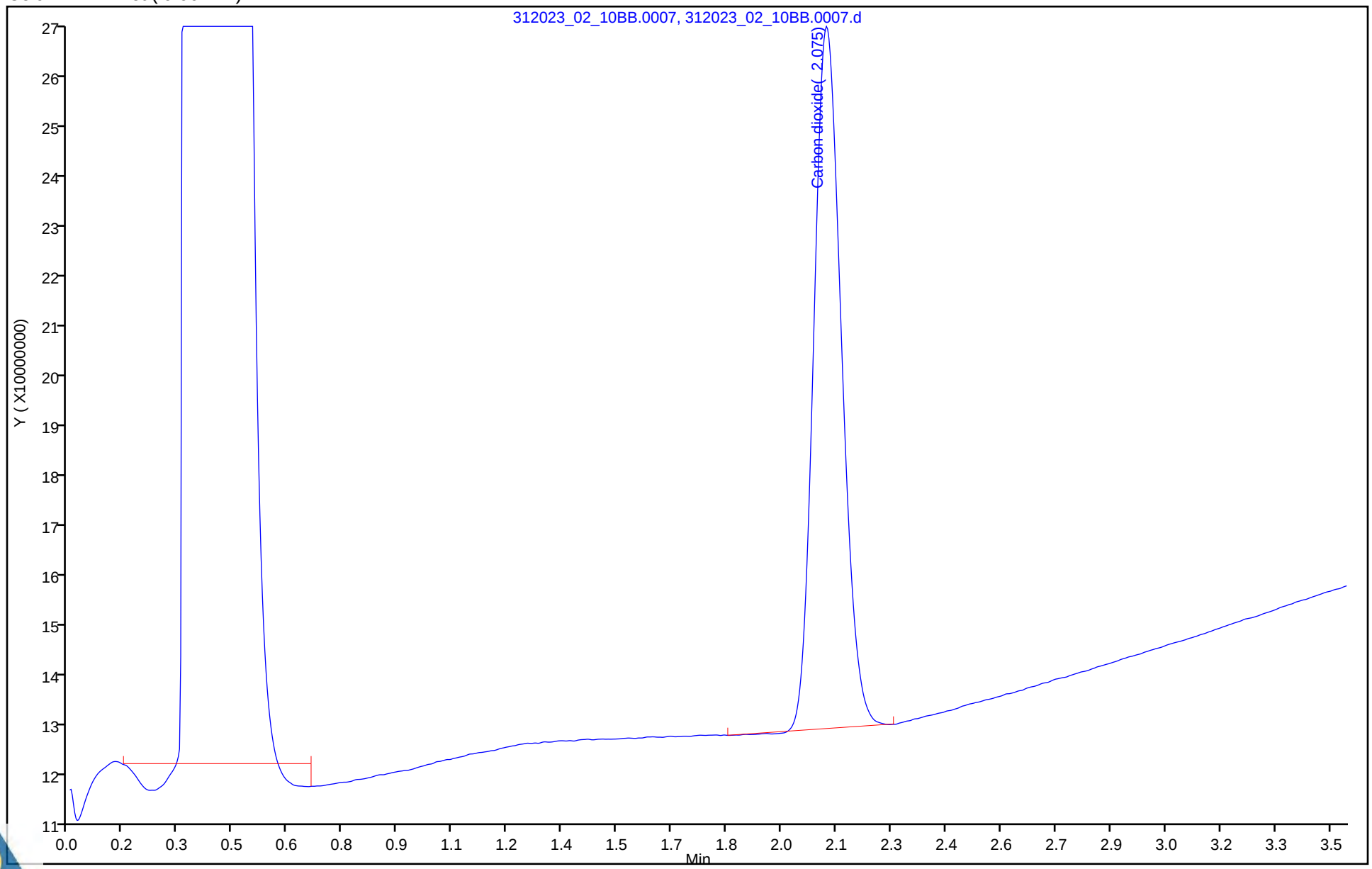
Report Date: 10-Feb-2023 13:02:45 Chrom Revision: 2.3 01-Feb-2023 13:23:06

Eurofins Lancaster Laboratories Environment Testing, LLC

Data File: \\chromfs\Lancaster\ChromData\19506-B\20230210-76805.b\312023_02_10BB.0007.d

| | | | | | |
|---|---|---|---|---|---|
| Injection Date: | 10-Feb-2023 09:21:00 | Instrument ID: | 19506-B | Operator ID: | |
| Lims ID: | LCS 410-343431/2-A | | | Worklist Smp#: | 7 |
| Client ID: | | | | | |
| Injection Vol: | 1.0 uL | Dil. Factor: | 1.0000 | ALS Bottle#: | 0 |
| Method: | RSK_CO2_19506B | Limit Group: | GCV - RSK175 CO2 | | |

Column: HP Plot ( 0.00 mm)



FORM I
GC VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Lancaster Laboratories Environment Testing, LLC  Job No.: 410-114929-1

SDG No.:

Client Sample ID: HS23020265-04 MS  Lab Sample ID: 410-114929-3 MS

Matrix: Water  Lab File ID: 312023_02_10BB.0012.d

Analysis Method: RSK-175  Date Collected: 02/06/2023 10:00

Sample wt/vol: 5(mL)  Date Analyzed: 02/10/2023 10:04

Soil Aliquot Vol:  Dilution Factor: 1

Soil Extract Vol.:  GC Column: HP Plot  ID: 0.53(mm)

Purge Volume:  Heated Purge: (Y/N) N  pH: 6.0

% Moisture:  % Solids:  Level: (low/med) Low

Analysis Batch No.: 343395  Units: ug/L

| CAS NO. | COMPOUND NAME | RESULT | Q | LOQ | DL |
|---|---|---|---|---|---|
| 124-38-9 | Carbon dioxide | 151000 | M J1 | 12000 | 2600 |

Report Date: 10-Feb-2023 13:02:47

Eurofins Lancaster Laboratories Environment Testing, LLC
Target Compound Quantitation Report

| | | | | | |
|---|---|---|---|---|---|
| Data File: | \\chromfs\Lancaster\ChromData\19506-B\20230210-76805.b\312023_02_10BB.0012.d | | | | |
| Lims ID: | 410-114929-A-3-B MS | | | | |
| Client ID: | HS23020265-04 | | | | |
| Sample Type: | MS | | | | |
| Inject. Date: | 10-Feb-2023 10:04:00 | ALS Bottle#: | 0 | Worklist Smp#: | 12 |
| Injection Vol: | 1.0 uL | Dil. Factor: | 1.0000 | | |
| Sample Info: | | | | | |
| Misc. Info.: | 410-0076805-012 | | | | |
| Operator ID: | | Instrument ID: | 19506-B | | |
| Method: | \\chromfs\Lancaster\ChromData\19506-B\20230210-76805.b\RSK_CO2_19506B.m | | | | |
| Limit Group: | GCV - RSK175 CO2 | | | | |
| Last Update: | 10-Feb-2023 13:02:46 | Calib Date: | 30-Dec-2022 17:05:00 | | |
| Integrator: | Genie | | | | |
| Quant Method: | External Standard | Quant By: | Initial Calibration | | |
| Last ICal File: | \\chromfs\Lancaster\ChromData\19506-B\20221230-74294.b\312022_12_30B.0006.d | | | | |
| Column 1 : | HP Plot ( 0.00 mm) | | Det: 0FIDA | | |
| Process Host: | CTX1629 | | | | |
| First Level Reviewer: WN7O | | Date: | 10-Feb-2023 13:02:14 | | |

| Compound | RT (min.) | Exp RT (min.) | Dlt RT (min.) | Response | Cal Amt ug/l | OnCol Amt ug/l | Flags |
|---|---|---|---|---|---|---|---|
| 1 Carbon dioxide | 2.043 | 2.076 | -0.033 | 596300200H | 35820 | 150562 | a |

## QC Flag Legend

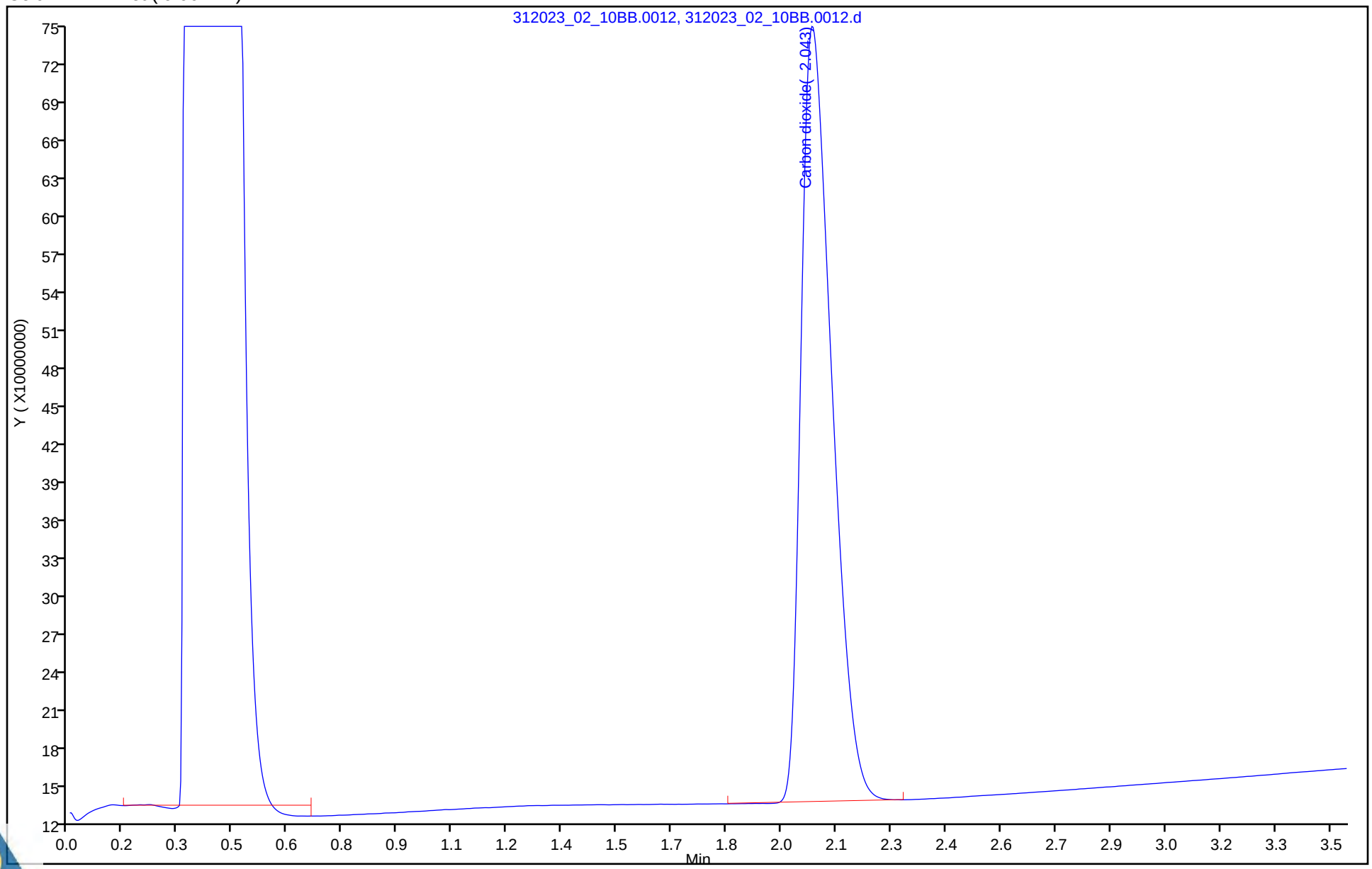
Processing Flags
H - Response Measured by Height
Review Flags
a - User Assigned ID

Report Date: 10-Feb-2023 13:02:47 Chrom Revision: 2.3 01-Feb-2023 13:23:06

Eurofins Lancaster Laboratories Environment Testing, LLC

| | | | | | |
|---|---|---|---|---|---|
| Data File: | \\chromfs\Lancaster\ChromData\19506-B\20230210-76805.b\312023_02_10BB.0012.d | | | | |
| Injection Date: | 10-Feb-2023 10:04:00 | Instrument ID: | 19506-B | Operator ID: | |
| Lims ID: | 410-114929-A-3-B MS | | | Worklist Smp#: | 12 |
| Client ID: | HS23020265-04 | | | | |
| Injection Vol: | 1.0 uL | Dil. Factor: | 1.0000 | ALS Bottle#: | 0 |
| Method: | RSK_CO2_19506B | Limit Group: | GCV - RSK175 CO2 | | |

Column: HP Plot ( 0.00 mm)



Report Date: 10-Feb-2023 13:02:48

Chrom Revision: 2.3 01-Feb-2023 13:23:06 Manual Integration/User Assign Peak Report

Eurofins Lancaster Laboratories Environment Testing, LLC

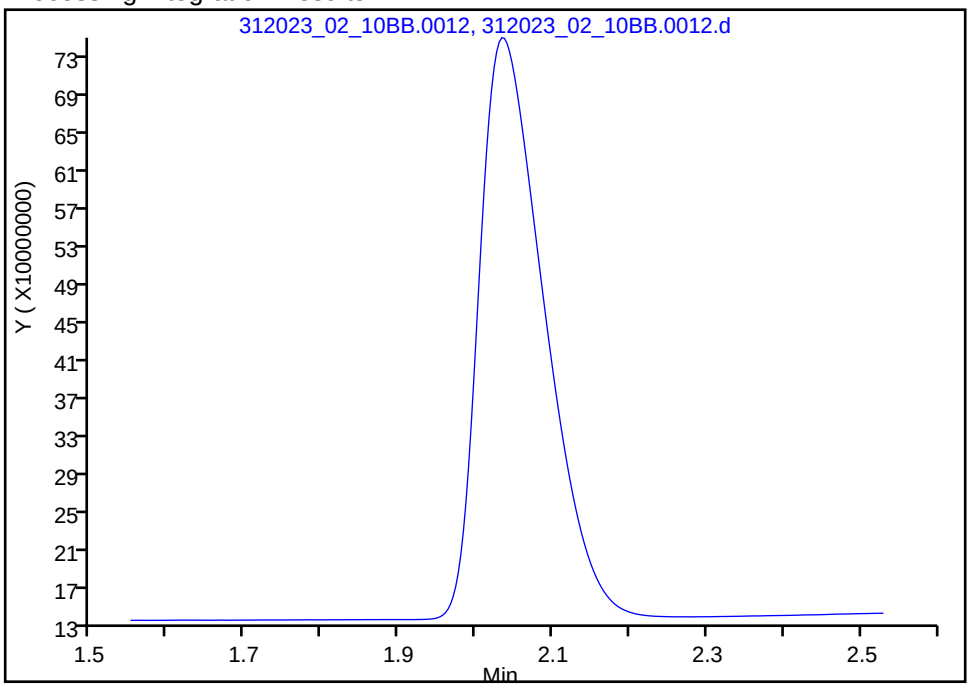
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|---|---|---|---|
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| Injection Date: | 10-Feb-2023 10:04:00 | Instrument ID: | 19506-B |
| Lims ID: | 410-114929-A-3-B MS | | |
| Client ID: | HS23020265-04 | | |
| Operator ID: | | ALS Bottle#: | 0 Worklist Smp#: 12 |
| Injection Vol: | 1.0 uL | Dil. Factor: | 1.0000 |
| Method: | RSK_CO2_19506B | Limit Group: | GCV - RSK175 CO2 |
| Column: | HP Plot ( 0.00 mm) | Detector | 0FIDA |

## 1 Carbon dioxide, CAS: 124-38-9

Signal: 1

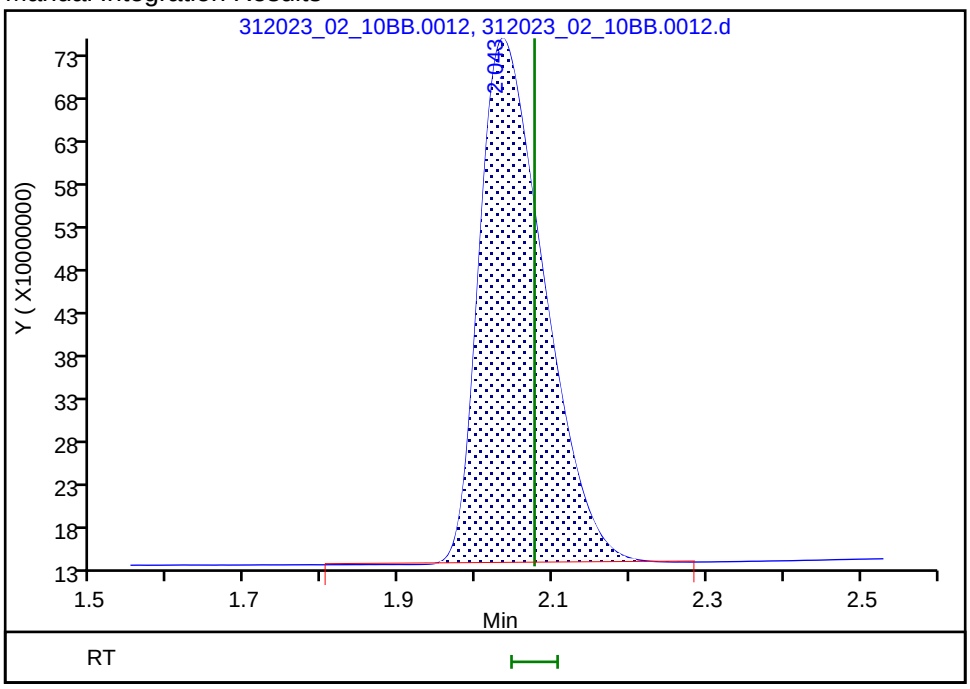
Not Detected
Expected RT: 2.08

Processing Integration Results




Manual Integration Results

RT: 2.04
Height: 596300200
Amount: 150562
Amount Units: ug/l




Reviewer: WN7O, 10-Feb-2023 13:02:13
Audit Action: Assigned Compound ID

Audit Reason: Peak assignment corrected

FORM I
GC VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Lancaster Laboratories Environment Testing, LLC  Job No.: 410-114929-1

SDG No.:

Client Sample ID: HS23020265-04 MSD  Lab Sample ID: 410-114929-3 MSD

Matrix: Water  Lab File ID: 312023_02_10BB.0013.d

Analysis Method: RSK-175  Date Collected: 02/06/2023 10:00

Sample wt/vol: 5(mL)  Date Analyzed: 02/10/2023 10:12

Soil Aliquot Vol:  Dilution Factor: 1

Soil Extract Vol.:  GC Column: HP Plot  ID: 0.53(mm)

Purge Volume:  Heated Purge: (Y/N) N  pH: 6.0

% Moisture:  % Solids:  Level: (low/med) Low

Analysis Batch No.: 343395  Units: ug/L

| CAS NO. | COMPOUND NAME | RESULT | Q | LOQ | DL |
|---|---|---|---|---|---|
| 124-38-9 | Carbon dioxide | 210000 | M J1 | 12000 | 2600 |

Report Date: 10-Feb-2023 13:02:48

Eurofins Lancaster Laboratories Environment Testing, LLC
Target Compound Quantitation Report

| | | | | | |
|---|---|---|---|---|---|
| Data File: | \\chromfs\Lancaster\ChromData\19506-B\20230210-76805.b\312023_02_10BB.0013.d | | | | |
| Lims ID: | 410-114929-A-3-C MSD | | | | |
| Client ID: | HS23020265-04 | | | | |
| Sample Type: | MSD | | | | |
| Inject. Date: | 10-Feb-2023 10:12:00 | ALS Bottle#: | 0 | Worklist Smp#: | 13 |
| Injection Vol: | 1.0 uL | Dil. Factor: | 1.0000 | | |
| Sample Info: | | | | | |
| Misc. Info.: | 410-0076805-013 | | | | |
| Operator ID: | | Instrument ID: | 19506-B | | |
| Method: | \\chromfs\Lancaster\ChromData\19506-B\20230210-76805.b\RSK_CO2_19506B.m | | | | |
| Limit Group: | GCV - RSK175 CO2 | | | | |
| Last Update: | 10-Feb-2023 13:02:46 | Calib Date: | 30-Dec-2022 17:05:00 | | |
| Integrator: | Genie | | | | |
| Quant Method: | External Standard | Quant By: | Initial Calibration | | |
| Last ICal File: | \\chromfs\Lancaster\ChromData\19506-B\20221230-74294.b\312022_12_30B.0006.d | | | | |
| Column 1 : | HP Plot ( 0.00 mm) | | Det: 0FIDA | | |
| Process Host: | CTX1629 | | | | |
| First Level Reviewer: WN7O | | Date: | 10-Feb-2023 13:02:18 | | |

| Compound | RT (min.) | Exp RT (min.) | Dlt RT (min.) | Response | Cal Amt ug/l | OnCol Amt ug/l | Flags |
|---|---|---|---|---|---|---|---|
| 1 Carbon dioxide | 2.027 | 2.076 | -0.049 | 831803677H | 35820 | 210025 | Ea |

## QC Flag Legend

Processing Flags
- E - Exceeded Maximum Amount
- H - Response Measured by Height

Review Flags
- a - User Assigned ID

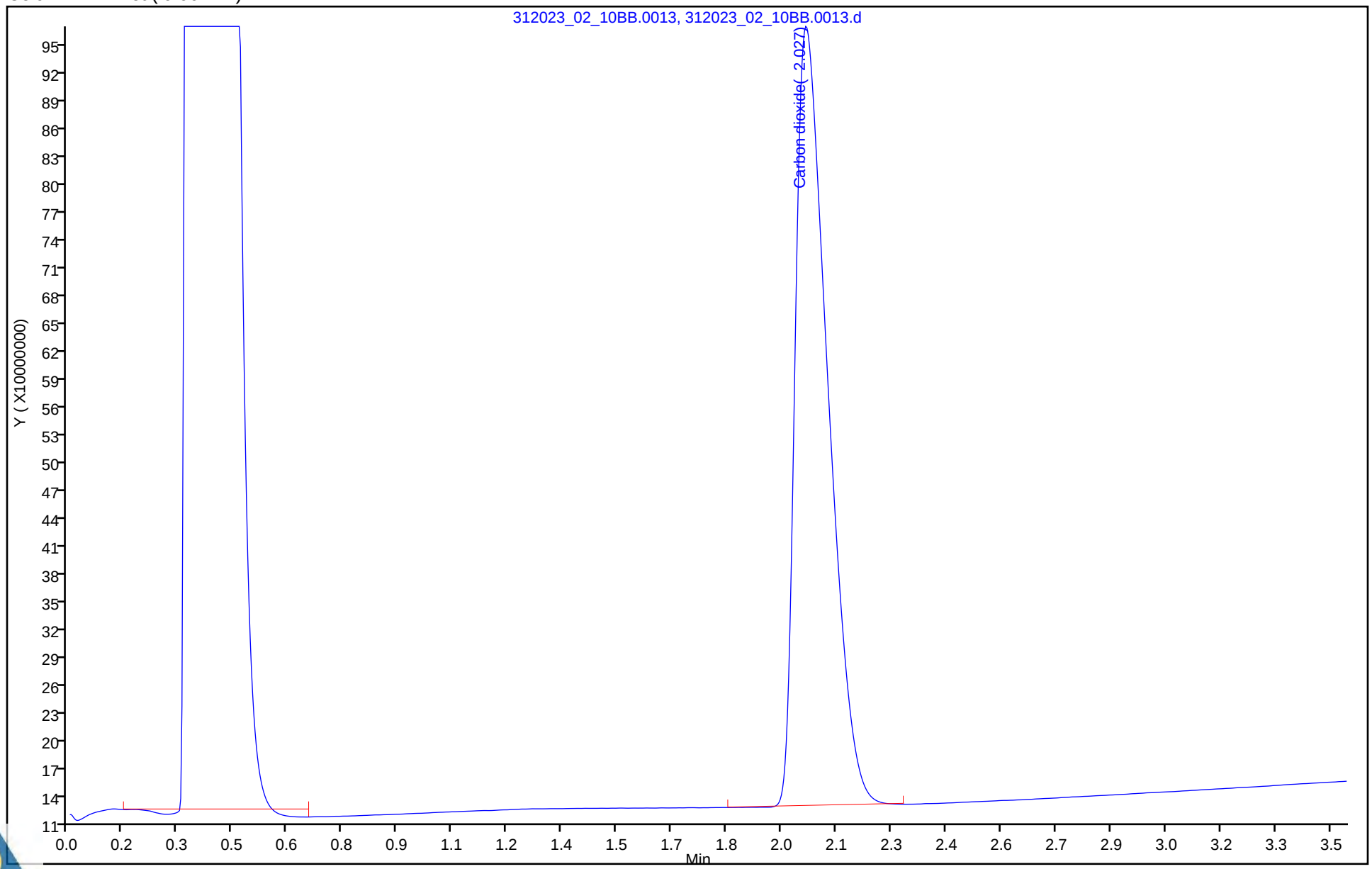
Report Date: 10-Feb-2023 13:02:48 Chrom Revision: 2.3 01-Feb-2023 13:23:06

Eurofins Lancaster Laboratories Environment Testing, LLC

Data File: \\chromfs\Lancaster\ChromData\19506-B\20230210-76805.b\312023_02_10BB.0013.d

| | | | | | |
|---|---|---|---|---|---|
| Injection Date: | 10-Feb-2023 10:12:00 | Instrument ID: | 19506-B | Operator ID: | |
| Lims ID: | 410-114929-A-3-C MSD | | | Worklist Smp#: | 13 |
| Client ID: | HS23020265-04 | | | | |
| Injection Vol: | 1.0 uL | Dil. Factor: | 1.0000 | ALS Bottle#: | 0 |
| Method: | RSK_CO2_19506B | Limit Group: | GCV - RSK175 CO2 | | |

Column: HP Plot ( 0.00 mm)



Report Date: 10-Feb-2023 13:02:48

Chrom Revision: 2.3 01-Feb-2023 13:23:06 Manual Integration/User Assign Peak Report

Eurofins Lancaster Laboratories Environment Testing, LLC

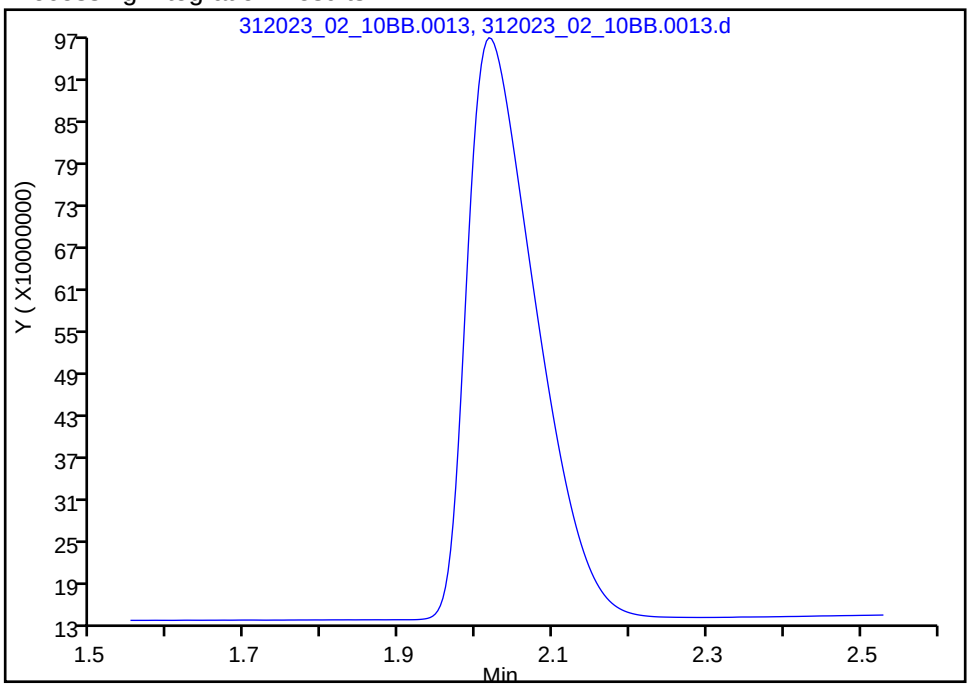
| | | | |
|---|---|---|---|
| Data File: | \\chromfs\Lancaster\ChromData\19506-B\20230210-76805.b\312023_02_10BB.0013.d | | |
| Injection Date: | 10-Feb-2023 10:12:00 | Instrument ID: | 19506-B |
| Lims ID: | 410-114929-A-3-C MSD | | |
| Client ID: | HS23020265-04 | | |
| Operator ID: | | ALS Bottle#: | 0 Worklist Smp#: 13 |
| Injection Vol: | 1.0 uL | Dil. Factor: | 1.0000 |
| Method: | RSK_CO2_19506B | Limit Group: | GCV - RSK175 CO2 |
| Column: | HP Plot ( 0.00 mm) | Detector | 0FIDA |

## 1 Carbon dioxide, CAS: 124-38-9

Signal: 1

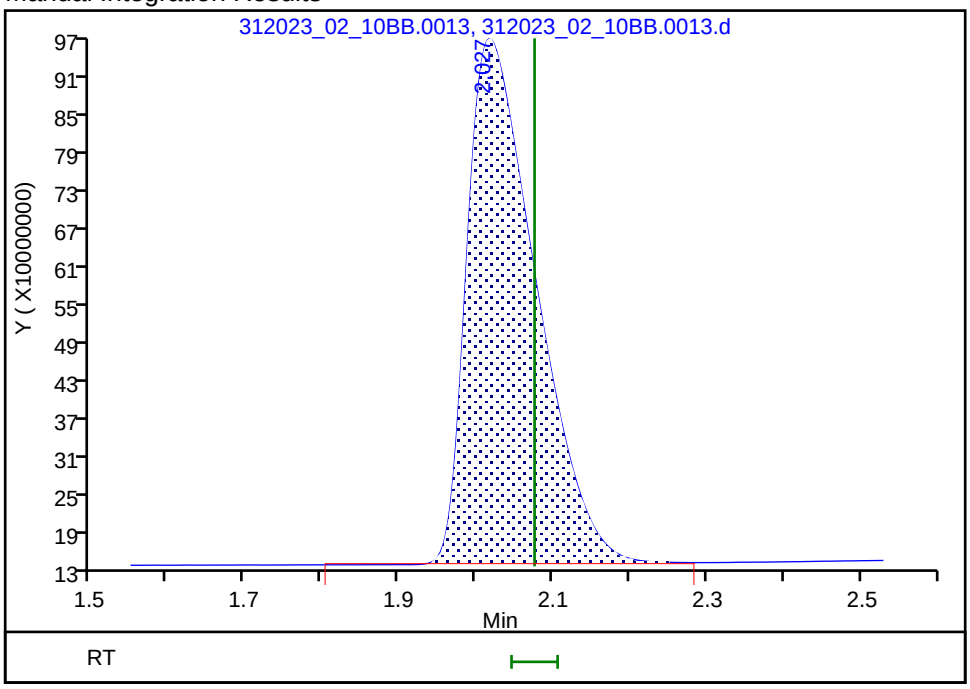
Not Detected
Expected RT: 2.08

Processing Integration Results




Manual Integration Results

RT: 2.03
Height: 831803677
Amount: 210025
Amount Units: ug/l




Reviewer: WN7O, 10-Feb-2023 13:02:17
Audit Action: Assigned Compound ID

Audit Reason: Peak assignment corrected

# GC VOA ANALYSIS RUN LOG

Lab Name: Eurofins Lancaster Laboratories Envi  Job No.: 410-114929-1

SDG No.:

Instrument ID: 19506-B  Start Date: 12/30/2022 16:24

Analysis Batch Number: 331616  End Date: 12/30/2022 22:25

| LAB SAMPLE ID | CLIENT SAMPLE ID | DATE ANALYZED | DILUTION FACTOR | LAB FILE ID | COLUMN ID |
|---|---|---|---|---|---|
| PIBLK 410-331616/1 | | 12/30/2022 16:24 | 1 | | HP Plot 0.53(mm) |
| IC 410-331616/2 | | 12/30/2022 16:32 | 1 | 312022_12_30B.0002.d | HP Plot 0.53(mm) |
| IC 410-331616/3 | | 12/30/2022 16:40 | 1 | 312022_12_30B.0003.d | HP Plot 0.53(mm) |
| ICRT 410-331616/4 | | 12/30/2022 16:48 | 1 | 312022_12_30B.0004.d | HP Plot 0.53(mm) |
| IC 410-331616/5 | | 12/30/2022 16:56 | 1 | 312022_12_30B.0005.d | HP Plot 0.53(mm) |
| IC 410-331616/6 | | 12/30/2022 17:05 | 1 | 312022_12_30B.0006.d | HP Plot 0.53(mm) |
| IC 410-331616/7 | | 12/30/2022 17:13 | 1 | | HP Plot 0.53(mm) |
| PIBLK 410-331616/8 | | 12/30/2022 17:21 | 1 | | HP Plot 0.53(mm) |
| ICVL 410-331616/9 | | 12/30/2022 17:29 | 1 | | HP Plot 0.53(mm) |
| ICV 410-331616/10 | | 12/30/2022 17:37 | 1 | 312022_12_30B.0010.d | HP Plot 0.53(mm) |
| ZZZZZ | | 12/30/2022 18:10 | 1 | | HP Plot 0.53(mm) |
| ZZZZZ | | 12/30/2022 18:17 | 1 | | HP Plot 0.53(mm) |
| ZZZZZ | | 12/30/2022 18:26 | 1 | | HP Plot 0.53(mm) |
| ZZZZZ | | 12/30/2022 18:33 | 1 | | HP Plot 0.53(mm) |
| ZZZZZ | | 12/30/2022 18:41 | 1 | | HP Plot 0.53(mm) |
| ZZZZZ | | 12/30/2022 18:48 | 1 | | HP Plot 0.53(mm) |
| ZZZZZ | | 12/30/2022 18:56 | 1 | | HP Plot 0.53(mm) |
| ZZZZZ | | 12/30/2022 19:04 | 1 | | HP Plot 0.53(mm) |
| ZZZZZ | | 12/30/2022 19:11 | 1 | | HP Plot 0.53(mm) |
| ZZZZZ | | 12/30/2022 19:19 | 1 | | HP Plot 0.53(mm) |
| CCV 410-331616/21 | | 12/30/2022 19:27 | 1 | | HP Plot 0.53(mm) |
| ZZZZZ | | 12/30/2022 19:34 | 1 | | HP Plot 0.53(mm) |
| ZZZZZ | | 12/30/2022 19:42 | 1 | | HP Plot 0.53(mm) |
| ZZZZZ | | 12/30/2022 19:50 | 1 | | HP Plot 0.53(mm) |
| ZZZZZ | | 12/30/2022 19:57 | 1 | | HP Plot 0.53(mm) |
| ZZZZZ | | 12/30/2022 20:05 | 1 | | HP Plot 0.53(mm) |
| ZZZZZ | | 12/30/2022 20:13 | 1 | | HP Plot 0.53(mm) |
| ZZZZZ | | 12/30/2022 20:20 | 1 | | HP Plot 0.53(mm) |
| ZZZZZ | | 12/30/2022 20:28 | 1 | | HP Plot 0.53(mm) |
| ZZZZZ | | 12/30/2022 20:35 | 1 | | HP Plot 0.53(mm) |
| ZZZZZ | | 12/30/2022 20:43 | 1 | | HP Plot 0.53(mm) |
| CCV 410-331616/32 | | 12/30/2022 20:51 | 1 | | HP Plot 0.53(mm) |
| ZZZZZ | | 12/30/2022 21:03 | 1 | | HP Plot 0.53(mm) |
| ZZZZZ | | 12/30/2022 21:11 | 1 | | HP Plot 0.53(mm) |
| ZZZZZ | | 12/30/2022 21:20 | 1 | | HP Plot 0.53(mm) |
| ZZZZZ | | 12/30/2022 21:28 | 1 | | HP Plot 0.53(mm) |
| ZZZZZ | | 12/30/2022 21:36 | 1 | | HP Plot 0.53(mm) |
| ZZZZZ | | 12/30/2022 21:44 | 1 | | HP Plot 0.53(mm) |
| ZZZZZ | | 12/30/2022 21:52 | 1 | | HP Plot 0.53(mm) |
| ZZZZZ | | 12/30/2022 22:01 | 1 | | HP Plot 0.53(mm) |
| ZZZZZ | | 12/30/2022 22:09 | 1 | | HP Plot 0.53(mm) |
| ZZZZZ | | 12/30/2022 22:17 | 5 | | HP Plot 0.53(mm) |

# GC VOA ANALYSIS RUN LOG

Lab Name: Eurofins Lancaster Laboratories Envi  Job No.: 410-114929-1

SDG No.:

Instrument ID: 19506-B  Start Date: 12/30/2022 16:24

Analysis Batch Number: 331616  End Date: 12/30/2022 22:25

| LAB SAMPLE ID | CLIENT SAMPLE ID | DATE ANALYZED | DILUTION FACTOR | LAB FILE ID | COLUMN ID |
|---|---|---|---|---|---|
| CCV 410-331616/43 | | 12/30/2022 22:25 | 1 | | HP Plot 0.53(mm) |

# GC VOA ANALYSIS RUN LOG

Lab Name: Eurofins Lancaster Laboratories Envi  Job No.: 410-114929-1

SDG No.:

Instrument ID: 19506-B  Start Date: 02/10/2023 08:51

Analysis Batch Number: 343395  End Date: 02/10/2023 10:42

| LAB SAMPLE ID | CLIENT SAMPLE ID | DATE ANALYZED | DILUTION FACTOR | LAB FILE ID | COLUMN ID |
|---|---|---|---|---|---|
| CCVRT 410-343395/4 | | 02/10/2023 08:51 | 1 | 312023_02_10BB.0004.d | HP Plot 0.53(mm) |
| ICVL 410-343395/5 | | 02/10/2023 09:05 | 1 | | HP Plot 0.53(mm) |
| MB 410-343431/1-A | | 02/10/2023 09:12 | 1 | 312023_02_10BB.0006.d | HP Plot 0.53(mm) |
| LCS 410-343431/2-A | | 02/10/2023 09:21 | 1 | 312023_02_10BB.0007.d | HP Plot 0.53(mm) |
| CCV 410-343395/8 | | 02/10/2023 09:28 | 1 | 312023_02_10BB.0008.d | HP Plot 0.53(mm) |
| 410-114929-1 | HS23020265-01 | 02/10/2023 09:41 | 1 | 312023_02_10BB.0009.d | HP Plot 0.53(mm) |
| 410-114929-2 | HS23020265-02 | 02/10/2023 09:48 | 1 | 312023_02_10BB.0010.d | HP Plot 0.53(mm) |
| 410-114929-3 | HS23020265-04 | 02/10/2023 09:56 | 1 | 312023_02_10BB.0011.d | HP Plot 0.53(mm) |
| 410-114929-3 MS | HS23020265-04 MS | 02/10/2023 10:04 | 1 | 312023_02_10BB.0012.d | HP Plot 0.53(mm) |
| 410-114929-3 MSD | HS23020265-04 MSD | 02/10/2023 10:12 | 1 | 312023_02_10BB.0013.d | HP Plot 0.53(mm) |
| ZZZZZ | | 02/10/2023 10:19 | 1 | | HP Plot 0.53(mm) |
| ZZZZZ | | 02/10/2023 10:27 | 1 | | HP Plot 0.53(mm) |
| ZZZZZ | | 02/10/2023 10:35 | 1 | | HP Plot 0.53(mm) |
| CCV 410-343395/17 | | 02/10/2023 10:42 | 1 | 312023_02_10BB.0017.d | HP Plot 0.53(mm) |

# GC VOA BATCH WORKSHEET

Lab Name: Eurofins Lancaster Laboratorie  Job No.: 410-114929-1

SDG No.:

Batch Number: 331616  Batch Start Date: 12/30/22 16:24  Batch Analyst: Patrushev, James P

Batch Method: RSK-175  Batch End Date:

| Lab Sample ID | Client Sample ID | Method Chain | Basis | InitialAmount | FinalAmount | EPH_CO2ICV 00002 | EPH_CO2MS 00004 | | |
|---|---|---|---|---|---|---|---|---|---|
| IC 410-331616/2 | | RSK-175 | | 5 mL | 5 mL | | 30 uL | | |
| IC 410-331616/3 | | RSK-175 | | 5 mL | 5 mL | | 60 uL | | |
| ICRT 410-331616/4 | | RSK-175 | | 5 mL | 5 mL | | 100 uL | | |
| IC 410-331616/5 | | RSK-175 | | 5 mL | 5 mL | | 250 uL | | |
| IC 410-331616/6 | | RSK-175 | | 5 mL | 5 mL | | 500 uL | | |
| ICV 410-331616/10 | | RSK-175 | | 5 mL | 5 mL | 0.32 mL | | | |

| Batch Notes | |
|---|---|
| | |

| Basis | Basis Description |
|---|---|
| | |

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

# GC VOA BATCH WORKSHEET

Lab Name: Eurofins Lancaster Laboratorie  Job No.: 410-114929-1

SDG No.:

Batch Number: 343431  Batch Start Date: 02/10/23 08:21  Batch Analyst: Patrushev, James P

Batch Method: RSK-175  Batch End Date: 02/10/23 09:30

| Lab Sample ID | Client Sample ID | Method Chain | Basis | Initial pH | InitialAmount | FinalAmount | Headspace | EPH_CO2MS 00004 | AnalysisComment |
|---|---|---|---|---|---|---|---|---|---|
| MB 410-343431/1 | | RSK-175, RSK-175 | | | 5 mL | 5 mL | | | |
| LCS 410-343431/2 | | RSK-175, RSK-175 | | | 5 mL | 5 mL | | 0.1 mL | |
| 410-114929-A-1 | HS23020265-01 | RSK-175, RSK-175 | T | 7 SU | 5 mL | 5 mL | No | | |
| 410-114929-A-2 | HS23020265-02 | RSK-175, RSK-175 | T | 10 SU | 5 mL | 5 mL | No | | pH 10 |
| 410-114929-A-3 | HS23020265-04 | RSK-175, RSK-175 | T | 6 SU | 5 mL | 5 mL | No | | pH 6 |
| 410-114929-A-3 MS | HS23020265-04 | RSK-175, RSK-175 | T | 6 SU | 5 mL | 5 mL | No | 0.1 mL | pH 6 |
| 410-114929-A-3 MSD | HS23020265-04 | RSK-175, RSK-175 | T | 6 SU | 5 mL | 5 mL | No | 0.1 mL | pH 6 |

| Batch Notes | |
|---|---|
| Pipette/Syringe/Dispenser ID | 7105 |
| pH Indicator ID | 10BDH3021 |

| Basis | Basis Description |
|---|---|
| T | Total/NA |

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

# Shipping and Receiving Documents




10450 Stancliff Rd, Ste 210
Houston, TX 77099
**T:** +1 281 530 5656
**F:** +1 281 530 5887
**www.alsglobal.com**

# Subcontract Chain of Custody

**SAMPLING STATE:** **Dept of Defense** **COC ID:** **20913**

**SUBCONTRACT TO:**

Eurofins Lancaster Laboratories Envt Testing
2425 New Holland Pike
Lancaster, PA 17601

**Phone:** +1 717 656 2300

**CUSTOMER INFORMATION:**

| | |
|---|---|
| **Company:** | ALS Houston |
| **Contact:** | Dane J. Wacasey |
| **Address:** | 10450 Stancliff Rd, Ste 210 |
| **Phone:** | +1 281 530 5656 |
| **Email:** | Dane.Wacasey@alsglobal.com |
| **Alternate Contact:** | Jumoke M. Lawal |
| **Email:** | jumoke.lawal@alsglobal.com |

**INVOICE INFORMATION:**

| | |
|---|---|
| **Company:** | ALS Houston |
| **Contact:** | Accounts Payable |
| **Address:** | 10450 Stancliff Rd, Ste 210 |
| **Phone:** | +1 281 530 5656 |
| **Reference:** | HS23020265 |
| **TSR:** | Ron Martino |

| | LAB SAMPLE ID | CLIENT SAMPLE ID | MATRIX | COLLECT DATE |
|---|---|---|---|---|
| | ANALYSIS REQUESTED | | | DUE DATE |
| 1. | **HS23020265-01** | **LHSMW21-230206** | **Water** | **06 Feb 2023 07:35** |
| | RSK-CO2; DoD Level II & IV, Equ_APTIM_GISKey | | | 21 Feb 2023 |
| 2. | **HS23020265-02** | **46WW16-230206** | **Water** | **06 Feb 2023 08:20** |
| | RSK-CO2; DoD Level II & IV, Equ_APTIM_GISKey | | | 21 Feb 2023 |
| 3. | **HS23020265-04** | **46WW02-230206** | **Water** | **06 Feb 2023 10:00** |
| | RSK-CO2; DoD Level II & IV, Equ_APTIM_GISKey | | | 21 Feb 2023 |

**Comments:** MS/MSD - HS23020265-04

Please analyze for the analysis listed above.
Send report to the emails shown above.

**QC Level:** DOD IV (DoD Data Package)

Relinquished By: _____ Date/Time: 2/8/23 1800

Received By: _____ Date/Time: 2/9/23 10:25

Cooler ID(s): _____ Temperature(s): _____

10450 Stancliff Rd, Ste 210
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**www.alsglobal.com**

# Purchase Order

**PO: HS23020265**

**VENDOR:**

Eurofins Lancaster Laboratories Envt Testing
2425 New Holland Pike
Lancaster, PA 17601

**Phone:** +1 717 656 2300

**CUSTOMER INFORMATION:**

| | |
|---|---|
| **Company:** | ALS Houston |
| **Contact:** | Dane J. Wacasey |
| **Address:** | 10450 Stancliff Rd, Ste 210 |
| **Phone:** | +1 281 530 5656 |
| **Email:** | Dane.Wacasey@alsglobal.com |
| **Alternate Contact:** | Jumoke M. Lawal |
| **Email:** | jumoke.lawal@alsglobal.com |

**INVOICE INFORMATION:**

| | |
|---|---|
| **Company:** | ALS Houston |
| **Contact:** | Accounts Payable |
| **Address:** | 10450 Stancliff Rd, Ste 210 |
| **Phone:** | +1 281 530 5656 |
| **Reference:** | 20913 |
| **TSR:** | Ron Martino |

| | Item | Catalog No | Unit Price | Quantity | Ext Price |
|---|---|---|---|---|---|
| 1. | RSK-CO2; DoD Level II & IV, Equ_APTIM_GISKey | NA | $120.00 | 3 | $360.00 |

**Order Total:** $360.00

# Login Sample Receipt Checklist

Client: ALS Group USA, Corp

Job Number: 410-114929-1

**Login Number: 114929**
**List Number: 1**
**Creator: Ballard, Megan**

**List Source: Eurofins Lancaster Laboratories Environment Testing, LLC**

| Question | Answer | Comment |
|---|---|---|
| The cooler's custody seal is intact. | True | |
| The cooler or samples do not appear to have been compromised or tampered with. | True | |
| Samples were received on ice. | True | |
| Cooler Temperature is acceptable (</=6C, not frozen). | True | |
| Cooler Temperature is recorded. | True | |
| WV: Container Temperature is acceptable (</=6C, not frozen). | N/A | |
| WV:  Container Temperature is recorded. | N/A | |
| COC is present. | True | |
| COC is filled out in ink and legible. | True | |
| COC is filled out with all pertinent information. | True | |
| There are no discrepancies between the containers received and the COC. | True | |
| Sample containers have legible labels. | True | |
| Containers are not broken or leaking. | True | |
| Sample collection date/times are provided. | True | |
| Appropriate sample containers are used. | True | |
| Sample bottles are completely filled. | True | |
| There is sufficient vol. for all requested analyses. | True | |
| Is the Field Sampler's name present on COC? | False | Received project as a subcontract. |
| Sample custody seals are intact. | N/A | |
| VOA sample vials do not have headspace >6mm in diameter (none, if from WV)? | True | |

# HS23020330 LHAAP 46 Febuary 2023 Cover Page

ALS WO# HS23020330

ALS Environmental
ALS Group USA, Corp
10450 Stancliff Road, Suite 210
Houston, TX 77099
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**www.alsglobal.com**

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# WorkOrder: HS23020330

## LHAAP 46 Febuary 2023

## Aptim Environmental & Infrastucture, Inc.

Vicki Graves
10333 Richmond Ave Ste 1030
Houston TX 77042

**27-Feb-2023**

# HS23020330 LHAAP 46 Febuary 2023 Final REV_01

ALS WO# HS23020330

10450 Stancliff Rd. Suite 210
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January 22, 2024

Vicki Graves
Aptim Environmental & Infrastucture, Inc.
10333 Richmond Ave
Ste 1030
Houston, TX 77042

Work Order: **HS23020330**

Laboratory Results for: **LHAAP 46 Febuary 2023**

Dear Vicki Graves ,

ALS Environmental received 4 sample(s) on Feb 08, 2023 for the analysis presented in the following report.

This is a REVISED REPORT. Please see the Case Narrative for discussion concerning this revision.

Regards,

**Generated By: DAYNA.FISHER**
Dane J. Wacasey

**ALS Houston, US** Date: 22-Jan-24

**Client:** Aptim Environmental & Infrastucture, Inc.
**Project:** LHAAP 46 Febuary 2023
**Work Order:** HS23020330

## SAMPLE SUMMARY

| Lab Samp ID | Client Sample ID | Matrix | TagNo | Collection Date | Date Received | Hold |
|---|---|---|---|---|---|---|
| HS23020330-01 | 46WW05-230207 | Water | | 07-Feb-2023 08:20 | 08-Feb-2023 09:45 | ☐ |
| HS23020330-02 | 46WW09-230207 | Water | | 07-Feb-2023 09:10 | 08-Feb-2023 09:45 | ☐ |
| HS23020330-03 | 46WW09-230207-FD | Water | | 07-Feb-2023 09:10 | 08-Feb-2023 09:45 | ☐ |
| HS23020330-04 | Trip Blank-2302207 | Water | CG-061422-305 | 07-Feb-2023 00:00 | 08-Feb-2023 09:45 | ☐ |

**ALS Houston, US** Date: 22-Jan-24

**Client:** Aptim Environmental & Infrastucture, Inc. **CASE NARRATIVE**
**Project:** LHAAP 46 Febuary 2023
**Work Order:** HS23020330

## Work Order Comments

- Revision I: This report was revised 01/22/24 to include the correct LOD at 0.5 ug/L for method 8260.

## Work Order Comments

- The analysis for CO2 by RSK175 was subcontracted to Eurofins in Lancaster, PA. The final report is appended.

## Work Order Comments

- The instrument used for nitrate analysis became inoperable on the day the samples were being analyzed. A split was made and sent to ALS Kelso for nitrate analysis. Due to a delay in delivery of the samples to Kelso, the samples arrived six days post collection. The analysis of nitrate was cancelled per client request.

## GC Semivolatiles by Method RSK-175

### Batch ID: R428169

**Sample ID: HS23020265-04MS**

- MS and MSD are for an unrelated sample

## GCMS Volatiles by Method SW8260

### Batch ID: R427850

**Sample ID: HS23020265-04MS**

- MS and MSD are for an unrelated sample

## WetChemistry by Method SM5310B

### Batch ID: R428559

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

## WetChemistry by Method SW9056

### Batch ID: R427935

**Sample ID: HS23011621-01MS**

- MS and MSD are for an unrelated sample (Chloride,Sulfate)

**ALS Houston, US** Date: 22-Jan-24

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 46 Febuary 2023
Sample ID: 46WW05-230207
Collection Date: 07-Feb-2023 08:20

**ANALYTICAL REPORT**
WorkOrder:HS23020330
Lab ID:HS23020330-01
Matrix:Water

| ANALYSES | RESULT | QUAL | DL | LOD | LOQ | UNITS | DILUTION FACTOR | DATE ANALYZED |
|---|---|---|---|---|---|---|---|---|
| **VOLATILES ORGANICS BY METHOD 8260C** | | **Method:SW8260** | | | | | | Analyst: PC |
| **cis-1,2-Dichloroethene** | **1.8** | | **0.20** | **0.50** | **1.0** | **ug/L** | 1 | 11-Feb-2023 18:55 |
| **Trichloroethene** | **33** | | **0.20** | **0.50** | **1.0** | **ug/L** | 1 | 11-Feb-2023 18:55 |
| Vinyl chloride | 0.50 | U | 0.20 | 0.50 | 1.0 | ug/L | 1 | 11-Feb-2023 18:55 |
| *Surr: 1,2-Dichloroethane-d4* | *102* | | | **0** | *81-118* | *%REC* | *1* | *11-Feb-2023 18:55* |
| *Surr: 4-Bromofluorobenzene* | *108* | | | **0** | *85-114* | *%REC* | *1* | *11-Feb-2023 18:55* |
| *Surr: Dibromofluoromethane* | *93.8* | | | **0** | *80-119* | *%REC* | *1* | *11-Feb-2023 18:55* |
| *Surr: Toluene-d8* | *109* | | | **0** | *89-112* | *%REC* | *1* | *11-Feb-2023 18:55* |
| **DISSOLVED GASES BY RSK-175** | | **Method:RSK-175** | | | | | | Analyst: SAM |
| Ethane | 0.000500 | U | 0.000144 | 0.000500 | 0.00100 | mg/L | 1 | 09-Feb-2023 10:30 |
| **Ethene** | **0.00132** | | **0.000234** | **0.000500** | **0.00100** | **mg/L** | 1 | 09-Feb-2023 10:30 |
| **Methane** | **0.00332** | | **0.000107** | **0.000500** | **0.000500** | **mg/L** | 1 | 09-Feb-2023 10:30 |
| **TOTAL ORGANIC CARBON - SM5310B-2011** | | **Method:SM5310B** | | | | | | Analyst: JAC |
| **Organic Carbon, Total** | **7.38** | | **0.500** | **1.00** | **1.00** | **mg/L** | 1 | 22-Feb-2023 11:31 |
| **ANIONS BY SW9056A** | | **Method:SW9056** | | | | | | Analyst: TH |
| **Chloride** | **172** | | **1.00** | **1.25** | **2.50** | **mg/L** | 5 | 14-Feb-2023 05:30 |
| **Sulfate** | **4,440** | | **10.0** | **12.5** | **25.0** | **mg/L** | 50 | 14-Feb-2023 05:36 |
| **SUBCONTRACT ANALYSIS - RSK** | | **Method:NA** | | | | | | Analyst: SUB |
| Subcontract Analysis | See Attached | | 0 | 0 | | NA | 1 | 13-Feb-2023 16:26 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

**Revision:** 1

**ALS Houston, US** Date: 22-Jan-24

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 46 Febuary 2023
Sample ID: 46WW09-230207
Collection Date: 07-Feb-2023 09:10

**ANALYTICAL REPORT**
WorkOrder:HS23020330
Lab ID:HS23020330-02
Matrix:Water

| ANALYSES | RESULT | QUAL | DL | LOD | LOQ | UNITS | DILUTION FACTOR | DATE ANALYZED |
|---|---|---|---|---|---|---|---|---|
| **VOLATILES ORGANICS BY METHOD 8260C** | | **Method:SW8260** | | | | | | Analyst: PC |
| cis-1,2-Dichloroethene | 0.50 | U | 0.20 | 0.50 | 1.0 | ug/L | 1 | 11-Feb-2023 18:13 |
| Trichloroethene | 0.50 | U | 0.20 | 0.50 | 1.0 | ug/L | 1 | 11-Feb-2023 18:13 |
| Vinyl chloride | 0.50 | U | 0.20 | 0.50 | 1.0 | ug/L | 1 | 11-Feb-2023 18:13 |
| *Surr: 1,2-Dichloroethane-d4* | *100* | | | **0** | *81-118* | *%REC* | *1* | *11-Feb-2023 18:13* |
| *Surr: 4-Bromofluorobenzene* | *106* | | | **0** | *85-114* | *%REC* | *1* | *11-Feb-2023 18:13* |
| *Surr: Dibromofluoromethane* | *94.2* | | | **0** | *80-119* | *%REC* | *1* | *11-Feb-2023 18:13* |
| *Surr: Toluene-d8* | *107* | | | **0** | *89-112* | *%REC* | *1* | *11-Feb-2023 18:13* |
| **DISSOLVED GASES BY RSK-175** | | **Method:RSK-175** | | | | | | Analyst: SAM |
| Ethane | 0.000500 | U | 0.000144 | 0.000500 | 0.00100 | mg/L | 1 | 09-Feb-2023 10:50 |
| **Ethene** | **0.00117** | | **0.000234** | **0.000500** | **0.00100** | **mg/L** | 1 | 09-Feb-2023 10:50 |
| **Methane** | **0.00185** | | **0.000107** | **0.000500** | **0.000500** | **mg/L** | 1 | 09-Feb-2023 10:50 |
| **TOTAL ORGANIC CARBON - SM5310B-2011** | | **Method:SM5310B** | | | | | | Analyst: JAC |
| **Organic Carbon, Total** | **3.95** | | **0.500** | **1.00** | **1.00** | **mg/L** | 1 | 22-Feb-2023 11:43 |
| **ANIONS BY SW9056A** | | **Method:SW9056** | | | | | | Analyst: TH |
| **Chloride** | **473** | | **4.00** | **5.00** | **10.0** | **mg/L** | 20 | 14-Feb-2023 05:48 |
| **Sulfate** | **2,270** | | **8.00** | **10.0** | **20.0** | **mg/L** | 40 | 14-Feb-2023 08:50 |
| **SUBCONTRACT ANALYSIS - RSK** | | **Method:NA** | | | | | | Analyst: SUB |
| Subcontract Analysis | See Attached | | 0 | 0 | | NA | 1 | 13-Feb-2023 16:26 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

**Revision:** 1

**ALS Houston, US** Date: 22-Jan-24

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 46 Febuary 2023
Sample ID: 46WW09-230207-FD
Collection Date: 07-Feb-2023 09:10

**ANALYTICAL REPORT**
WorkOrder:HS23020330
Lab ID:HS23020330-03
Matrix:Water

| ANALYSES | RESULT | QUAL | DL | LOD | LOQ | UNITS | DILUTION FACTOR | DATE ANALYZED |
|---|---|---|---|---|---|---|---|---|
| **VOLATILES ORGANICS BY METHOD 8260C** | | **Method:SW8260** | | | | | | Analyst: PC |
| cis-1,2-Dichloroethene | 0.50 | U | 0.20 | 0.50 | 1.0 | ug/L | 1 | 11-Feb-2023 18:34 |
| Trichloroethene | 0.50 | U | 0.20 | 0.50 | 1.0 | ug/L | 1 | 11-Feb-2023 18:34 |
| Vinyl chloride | 0.50 | U | 0.20 | 0.50 | 1.0 | ug/L | 1 | 11-Feb-2023 18:34 |
| *Surr: 1,2-Dichloroethane-d4* | *100* | | | **0** | *81-118* | *%REC* | *1* | *11-Feb-2023 18:34* |
| *Surr: 4-Bromofluorobenzene* | *106* | | | **0** | *85-114* | *%REC* | *1* | *11-Feb-2023 18:34* |
| *Surr: Dibromofluoromethane* | *93.1* | | | **0** | *80-119* | *%REC* | *1* | *11-Feb-2023 18:34* |
| *Surr: Toluene-d8* | *106* | | | **0** | *89-112* | *%REC* | *1* | *11-Feb-2023 18:34* |
| **DISSOLVED GASES BY RSK-175** | | **Method:RSK-175** | | | | | | Analyst: SAM |
| **Ethane** | **0.000958** | J | **0.000144** | **0.000500** | **0.00100** | **mg/L** | 1 | 09-Feb-2023 11:24 |
| Ethene | 0.000500 | U | 0.000234 | 0.000500 | 0.00100 | mg/L | 1 | 09-Feb-2023 11:24 |
| **Methane** | **0.00112** | | **0.000107** | **0.000500** | **0.000500** | **mg/L** | 1 | 09-Feb-2023 11:24 |
| **TOTAL ORGANIC CARBON - SM5310B-2011** | | **Method:SM5310B** | | | | | | Analyst: JAC |
| **Organic Carbon, Total** | **4.24** | | **0.500** | **1.00** | **1.00** | **mg/L** | 1 | 22-Feb-2023 11:56 |
| **ANIONS BY SW9056A** | | **Method:SW9056** | | | | | | Analyst: TH |
| **Chloride** | **465** | | **4.00** | **5.00** | **10.0** | **mg/L** | 20 | 14-Feb-2023 05:59 |
| **Sulfate** | **2,250** | | **8.00** | **10.0** | **20.0** | **mg/L** | 40 | 14-Feb-2023 08:55 |
| **SUBCONTRACT ANALYSIS - RSK** | | **Method:NA** | | | | | | Analyst: SUB |
| Subcontract Analysis | See Attached | | 0 | 0 | | NA | 1 | 13-Feb-2023 16:26 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

**Revision:** 1

**ALS Houston, US** Date: 22-Jan-24

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 46 Febuary 2023
Sample ID: Trip Blank-2302207
Collection Date: 07-Feb-2023 00:00

**ANALYTICAL REPORT**
WorkOrder:HS23020330
Lab ID:HS23020330-04
Matrix:Water

| ANALYSES | RESULT | QUAL | DL | LOD | LOQ | UNITS | DILUTION FACTOR | DATE ANALYZED |
|---|---|---|---|---|---|---|---|---|
| **VOLATILES ORGANICS BY METHOD 8260C** | **Method:SW8260** | | | | | | | Analyst: PC |
| cis-1,2-Dichloroethene | 0.50 | U | 0.20 | 0.50 | 1.0 | ug/L | 1 | 11-Feb-2023 16:28 |
| Trichloroethene | 0.50 | U | 0.20 | 0.50 | 1.0 | ug/L | 1 | 11-Feb-2023 16:28 |
| Vinyl chloride | 0.50 | U | 0.20 | 0.50 | 1.0 | ug/L | 1 | 11-Feb-2023 16:28 |
| *Surr: 1,2-Dichloroethane-d4* | *100* | | | **0** | *81-118* | *%REC* | *1* | *11-Feb-2023 16:28* |
| *Surr: 4-Bromofluorobenzene* | *107* | | | **0** | *85-114* | *%REC* | *1* | *11-Feb-2023 16:28* |
| *Surr: Dibromofluoromethane* | *93.9* | | | **0** | *80-119* | *%REC* | *1* | *11-Feb-2023 16:28* |
| *Surr: Toluene-d8* | *107* | | | **0** | *89-112* | *%REC* | *1* | *11-Feb-2023 16:28* |

Note: See Qualifiers Page for a list of qualifiers and their explanation. **Revision:** 1

**ALS Houston, US** Date: 22-Jan-24

**Client:** Aptim Environmental & Infrastucture, Inc.
**Project:** LHAAP 46 Febuary 2023
**WorkOrder:** HS23020330

## DATES REPORT

| Sample ID | Client Samp ID | Collection Date | Leachate Date | Prep Date | Analysis Date | DF |
|---|---|---|---|---|---|---|
| **Batch ID:** R427850 ( 0 ) | **Test Name :** VOLATILES ORGANICS BY METHOD 8260C | | | | **Matrix:** Water | |
| HS23020330-01 | 46WW05-230207 | 07 Feb 2023 08:20 | | | 11 Feb 2023 18:55 | 1 |
| HS23020330-02 | 46WW09-230207 | 07 Feb 2023 09:10 | | | 11 Feb 2023 18:13 | 1 |
| HS23020330-03 | 46WW09-230207-FD | 07 Feb 2023 09:10 | | | 11 Feb 2023 18:34 | 1 |
| HS23020330-04 | Trip Blank-2302207 | 07 Feb 2023 00:00 | | | 11 Feb 2023 16:28 | 1 |
| **Batch ID:** R427900 ( 0 ) | **Test Name :** SUBCONTRACT ANALYSIS - RSK | | | | **Matrix:** Water | |
| HS23020330-01 | 46WW05-230207 | 07 Feb 2023 08:20 | | | 13 Feb 2023 16:26 | 1 |
| HS23020330-02 | 46WW09-230207 | 07 Feb 2023 09:10 | | | 13 Feb 2023 16:26 | 1 |
| HS23020330-03 | 46WW09-230207-FD | 07 Feb 2023 09:10 | | | 13 Feb 2023 16:26 | 1 |
| **Batch ID:** R427935 ( 0 ) | **Test Name :** ANIONS BY SW9056A | | | | **Matrix:** Water | |
| HS23020330-01 | 46WW05-230207 | 07 Feb 2023 08:20 | | | 14 Feb 2023 05:36 | 50 |
| HS23020330-01 | 46WW05-230207 | 07 Feb 2023 08:20 | | | 14 Feb 2023 05:30 | 5 |
| HS23020330-02 | 46WW09-230207 | 07 Feb 2023 09:10 | | | 14 Feb 2023 08:50 | 40 |
| HS23020330-02 | 46WW09-230207 | 07 Feb 2023 09:10 | | | 14 Feb 2023 05:48 | 20 |
| HS23020330-03 | 46WW09-230207-FD | 07 Feb 2023 09:10 | | | 14 Feb 2023 08:55 | 40 |
| HS23020330-03 | 46WW09-230207-FD | 07 Feb 2023 09:10 | | | 14 Feb 2023 05:59 | 20 |
| **Batch ID:** R428169 ( 0 ) | **Test Name :** DISSOLVED GASES BY RSK-175 | | | | **Matrix:** Water | |
| HS23020330-01 | 46WW05-230207 | 07 Feb 2023 08:20 | | | 09 Feb 2023 10:30 | 1 |
| HS23020330-02 | 46WW09-230207 | 07 Feb 2023 09:10 | | | 09 Feb 2023 10:50 | 1 |
| HS23020330-03 | 46WW09-230207-FD | 07 Feb 2023 09:10 | | | 09 Feb 2023 11:24 | 1 |
| **Batch ID:** R428559 ( 0 ) | **Test Name :** TOTAL ORGANIC CARBON - SM5310B-2011 | | | | **Matrix:** Water | |
| HS23020330-01 | 46WW05-230207 | 07 Feb 2023 08:20 | | | 22 Feb 2023 11:31 | 1 |
| HS23020330-02 | 46WW09-230207 | 07 Feb 2023 09:10 | | | 22 Feb 2023 11:43 | 1 |
| HS23020330-03 | 46WW09-230207-FD | 07 Feb 2023 09:10 | | | 22 Feb 2023 11:56 | 1 |

**Revision:** 1

**ALS Houston, US** Date: 22-Jan-24

**Client:** Aptim Environmental & Infrastucture, Inc.
**Project:** LHAAP 46 Febuary 2023
**WorkOrder:** HS23020330

**QC BATCH REPORT**

**Batch ID:** R428169 ( 0 ) **Instrument:** FID-4 **Method:** DISSOLVED GASES BY RSK-175

**MBLK** Sample ID: **MBLK-230209** Units: **mg/L** Analysis Date: **09-Feb-2023 07:36**
Client ID: Run ID: **FID-4_428169** SeqNo: **7132771** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Ethane | 0.000500 | 0.00100 | | | | | | | | U |
| Ethene | 0.000500 | 0.00100 | | | | | | | | U |
| Methane | 0.000500 | 0.000500 | | | | | | | | U |

**LCS** Sample ID: **LCS-230209** Units: **mg/L** Analysis Date: **09-Feb-2023 07:44**
Client ID: Run ID: **FID-4_428169** SeqNo: **7132772** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Ethane | 0.0205 | 0.00100 | 0.01804 | 0 | 113 | 75 - 125 | | | | |
| Ethene | 0.0175 | 0.00100 | 0.0168 | 0 | 104 | 75 - 125 | | | | |
| Methane | 0.00879 | 0.000500 | 0.009647 | 0 | 91.1 | 75 - 125 | | | | |

**MS** Sample ID: **HS23020265-04MS** Units: **mg/L** Analysis Date: **09-Feb-2023 10:07**
Client ID: Run ID: **FID-4_428169** SeqNo: **7132776** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Ethane | 0.0242 | 0.00100 | 0.01804 | 0 | 134 | 75 - 125 | | | | S |
| Ethene | 0.0209 | 0.00100 | 0.0168 | 0 | 124 | 75 - 125 | | | | |
| Methane | 0.0106 | 0.000500 | 0.009647 | 0.001740 | 92.0 | 75 - 125 | | | | |

**MSD** Sample ID: **HS23020265-04MSD** Units: **mg/L** Analysis Date: **09-Feb-2023 10:16**
Client ID: Run ID: **FID-4_428169** SeqNo: **7132777** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Ethane | 0.0244 | 0.00100 | 0.01804 | 0 | 136 | 75 - 125 | 0.02420 | 1.03 | 30 | S |
| Ethene | 0.0210 | 0.00100 | 0.0168 | 0 | 125 | 75 - 125 | 0.02089 | 0.391 | 30 | |
| Methane | 0.0107 | 0.000500 | 0.009647 | 0.001740 | 93.2 | 75 - 125 | 0.01061 | 1.11 | 30 | |

**The following samples were analyzed in this batch:** HS23020330-01 HS23020330-02 HS23020330-03

**Revision:** 1

**ALS Houston, US** Date: 22-Jan-24

**Client:** Aptim Environmental & Infrastucture, Inc.
**Project:** LHAAP 46 Febuary 2023
**WorkOrder:** HS23020330

**QC BATCH REPORT**

**Batch ID:** R427850 ( 0 ) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

**MBLK** Sample ID: **VBLKW-230211** Units: **ug/L** Analysis Date: **11-Feb-2023 14:00**
Client ID: Run ID: **VOA6_427850** SeqNo: **7120406** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| cis-1,2-Dichloroethene | 0.50 | 1.0 | | | | | | | | U |
| Trichloroethene | 0.50 | 1.0 | | | | | | | | U |
| Vinyl chloride | 0.50 | 1.0 | | | | | | | | U |
| *Surr: 1,2-Dichloroethane-d4* | *50.07* | *1.0* | *50* | *0* | *100* | *81 - 118* | | | | |
| *Surr: 4-Bromofluorobenzene* | *53.56* | *1.0* | *50* | *0* | *107* | *85 - 114* | | | | |
| *Surr: Dibromofluoromethane* | *47.35* | *1.0* | *50* | *0* | *94.7* | *80 - 119* | | | | |
| *Surr: Toluene-d8* | *53.07* | *1.0* | *50* | *0* | *106* | *89 - 112* | | | | |

**LCS** Sample ID: **VLCSW-230211** Units: **ug/L** Analysis Date: **11-Feb-2023 13:18**
Client ID: Run ID: **VOA6_427850** SeqNo: **7120405** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| cis-1,2-Dichloroethene | 18.49 | 1.0 | 20 | 0 | 92.4 | 78 - 123 | | | | |
| Trichloroethene | 18.29 | 1.0 | 20 | 0 | 91.4 | 79 - 123 | | | | |
| Vinyl chloride | 18.95 | 1.0 | 20 | 0 | 94.7 | 58 - 137 | | | | |
| *Surr: 1,2-Dichloroethane-d4* | *54.8* | *1.0* | *50* | *0* | *110* | *81 - 118* | | | | |
| *Surr: 4-Bromofluorobenzene* | *54.39* | *1.0* | *50* | *0* | *109* | *85 - 114* | | | | |
| *Surr: Dibromofluoromethane* | *49.85* | *1.0* | *50* | *0* | *99.7* | *80 - 119* | | | | |
| *Surr: Toluene-d8* | *50.95* | *1.0* | *50* | *0* | *102* | *89 - 112* | | | | |

**MS** Sample ID: **HS23020265-04MS** Units: **ug/L** Analysis Date: **11-Feb-2023 15:24**
Client ID: Run ID: **VOA6_427850** SeqNo: **7120410** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| cis-1,2-Dichloroethene | 17.38 | 1.0 | 20 | 1.768 | 78.0 | 78 - 123 | | | | |
| Trichloroethene | 44.84 | 1.0 | 20 | 28.68 | 80.8 | 79 - 123 | | | | |
| Vinyl chloride | 11.53 | 1.0 | 20 | 0.4346 | 55.5 | 58 - 137 | | | | S |
| *Surr: 1,2-Dichloroethane-d4* | *50.33* | *1.0* | *50* | *0* | *101* | *81 - 118* | | | | |
| *Surr: 4-Bromofluorobenzene* | *54.23* | *1.0* | *50* | *0* | *108* | *85 - 114* | | | | |
| *Surr: Dibromofluoromethane* | *46.11* | *1.0* | *50* | *0* | *92.2* | *80 - 119* | | | | |
| *Surr: Toluene-d8* | *53.66* | *1.0* | *50* | *0* | *107* | *89 - 112* | | | | |

**Revision:** 1

**ALS Houston, US** Date: 22-Jan-24

**Client:** Aptim Environmental & Infrastucture, Inc.
**Project:** LHAAP 46 Febuary 2023
**WorkOrder:** HS23020330

**QC BATCH REPORT**

**Batch ID:** R427850 ( 0 ) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

**MSD** Sample ID: **HS23020265-04MSD** Units: **ug/L** Analysis Date: **11-Feb-2023 15:45**
Client ID: Run ID: **VOA6_427850** SeqNo: **7120411** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| cis-1,2-Dichloroethene | 22.7 | 1.0 | 20 | 1.768 | 105 | 78 - 123 | 17.38 | 26.6 | 20 | R |
| Trichloroethene | 48.93 | 1.0 | 20 | 28.68 | 101 | 79 - 123 | 44.84 | 8.73 | 20 | |
| Vinyl chloride | 14.19 | 1.0 | 20 | 0.4346 | 68.8 | 58 - 137 | 11.53 | 20.7 | 20 | R |
| *Surr: 1,2-Dichloroethane-d4* | *50.69* | *1.0* | *50* | *0* | *101* | *81 - 118* | *50.33* | *0.716* | *20* | |
| *Surr: 4-Bromofluorobenzene* | *53.66* | *1.0* | *50* | *0* | *107* | *85 - 114* | *54.23* | *1.07* | *20* | |
| *Surr: Dibromofluoromethane* | *45.8* | *1.0* | *50* | *0* | *91.6* | *80 - 119* | *46.11* | *0.677* | *20* | |
| *Surr: Toluene-d8* | *53.17* | *1.0* | *50* | *0* | *106* | *89 - 112* | *53.66* | *0.914* | *20* | |

**The following samples were analyzed in this batch:** HS23020330-01 HS23020330-02 HS23020330-03 HS23020330-04

**Revision:** 1

**ALS Houston, US** Date: 22-Jan-24

**Client:** Aptim Environmental & Infrastucture, Inc.
**Project:** LHAAP 46 Febuary 2023
**WorkOrder:** HS23020330

**QC BATCH REPORT**

**Batch ID:** R427935 ( 0 ) **Instrument:** ICS-Integrion **Method:** ANIONS BY SW9056A

**MBLK** Sample ID: **MBLK** Units: **mg/L** Analysis Date: **14-Feb-2023 01:14**
Client ID: Run ID: **ICS-Integrion_427935** SeqNo: **7122262** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 0.250 | 0.500 | | | | | | | | U |
| Sulfate | 0.250 | 0.500 | | | | | | | | U |

**LCS** Sample ID: **LCS** Units: **mg/L** Analysis Date: **14-Feb-2023 01:26**
Client ID: Run ID: **ICS-Integrion_427935** SeqNo: **7122263** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 19.91 | 0.500 | 20 | 0 | 99.6 | 80 - 120 | | | | |
| Sulfate | 20.19 | 0.500 | 20 | 0 | 101 | 80 - 120 | | | | |

**MS** Sample ID: **HS23011621-01MS** Units: **mg/L** Analysis Date: **14-Feb-2023 01:38**
Client ID: Run ID: **ICS-Integrion_427935** SeqNo: **7122265** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 305.8 | 0.500 | 10 | 305.5 | 3.03 | 80 - 120 | | | | SEO |
| Sulfate | 117.6 | 0.500 | 10 | 113.1 | 45.5 | 80 - 120 | | | | SEO |

**MSD** Sample ID: **HS23011621-01MSD** Units: **mg/L** Analysis Date: **14-Feb-2023 01:43**
Client ID: Run ID: **ICS-Integrion_427935** SeqNo: **7122266** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 305.5 | 0.500 | 10 | 305.5 | 0.190 | 80 - 120 | 305.8 | 0.0929 | 20 | SEO |
| Sulfate | 117.5 | 0.500 | 10 | 113.1 | 44.5 | 80 - 120 | 117.6 | 0.0875 | 20 | SEO |

**The following samples were analyzed in this batch:** HS23020330-01 HS23020330-02 HS23020330-03

**Revision:** 1

**ALS Houston, US** Date: 22-Jan-24

**Client:** Aptim Environmental & Infrastucture, Inc.
**Project:** LHAAP 46 Febuary 2023
**WorkOrder:** HS23020330

**QC BATCH REPORT**

**Batch ID:** R428559 ( 0 ) **Instrument:** TOC_04 **Method:** TOTAL ORGANIC CARBON - SM5310B-2011

**MBLK** Sample ID: **MBLK-02222023** Units: **mg/L** Analysis Date: **22-Feb-2023 10:25**
Client ID: Run ID: **TOC_04_428559** SeqNo: **7140281** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Organic Carbon, Total | 1.00 | 1.00 | | | | | | | | U |

**LCS** Sample ID: **LCS-02222023** Units: **mg/L** Analysis Date: **22-Feb-2023 10:38**
Client ID: Run ID: **TOC_04_428559** SeqNo: **7140282** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Organic Carbon, Total | 10.64 | 1.00 | 10 | 0 | 106 | 85 - 115 | | | | |

**LCSD** Sample ID: **LCSD-02222023** Units: **mg/L** Analysis Date: **22-Feb-2023 10:52**
Client ID: Run ID: **TOC_04_428559** SeqNo: **7140283** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Organic Carbon, Total | 10.6 | 1.00 | 10 | 0 | 106 | 85 - 115 | 10.64 | 0.377 | 20 | |

**MS** Sample ID: **HS23020738-01MS** Units: **mg/L** Analysis Date: **22-Feb-2023 11:18**
Client ID: Run ID: **TOC_04_428559** SeqNo: **7140285** PrepDate: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Organic Carbon, Total | 15.11 | 1.00 | 10 | 4.232 | 109 | 80 - 120 | | | | |

**The following samples were analyzed in this batch:** HS23020330-01 HS23020330-02 HS23020330-03

**Revision:** 1

**ALS Houston, US** Date: 22-Jan-24

**Client:** Aptim Environmental & Infrastucture, Inc.
**Project:** LHAAP 46 Febuary 2023
**WorkOrder:** **HS23020330**

**QUALIFIERS, ACRONYMS, UNITS**

| Qualifier | Description |
|---|---|
| * | Value exceeds Regulatory Limit |
| a | Not accredited |
| B | Analyte detected in the associated Method Blank above the Reporting Limit |
| E | Value above quantitation range |
| H | Analyzed outside of Holding Time |
| J | Analyte detected below quantitation limit |
| M | Manually integrated, see raw data for justification |
| n | Not offered for accreditation |
| ND | Not Detected at the Reporting Limit |
| O | Sample amount is > 4 times amount spiked |
| P | Dual Column results percent difference > 40% |
| R | RPD above laboratory control limit |
| S | Spike Recovery outside laboratory control limits |
| U | Analyzed but not detected above the MDL/SDL |

| Acronym | Description |
|---|---|
| DCS | Detectability Check Study |
| DUP | Method Duplicate |
| LCS | Laboratory Control Sample |
| LCSD | Laboratory Control Sample Duplicate |
| MBLK | Method Blank |
| MDL | Method Detection Limit |
| MQL | Method Quantitation Limit |
| MS | Matrix Spike |
| MSD | Matrix Spike Duplicate |
| PDS | Post Digestion Spike |
| PQL | Practical Quantitaion Limit |
| SD | Serial Dilution |
| SDL | Sample Detection Limit |
| TRRP | Texas Risk Reduction Program |

| Unit Reported | Description |
|---|---|
| mg/L | Milligrams per Liter |

## CERTIFICATIONS,ACCREDITATIONS & LICENSES

| Agency | Number | Expire Date |
|---|---|---|
| Arkansas | 88-00356 | 27-Mar-2024 |
| California | 2919; 2024 | 30-Apr-2024 |
| Dept of Defense | L23-358 | 31-May-2025 |
| Florida | E87611-38 | 30-Jun-2024 |
| Illinois | 2000322023-11 | 30-Jun-2024 |
| Kansas | E-10352 2023-2024 | 31-Jul-2024 |
| Louisiana | 03087 2023-2024 | 30-Jun-2024 |
| Maryland | 343; 2023-2024 | 30-Jun-2024 |
| North Carolina | 624 - 2024 | 31-Dec-2024 |
| North Dakota | R-193 2023-2024 | 30-Apr-2024 |
| Oklahoma | 2023-140 | 31-Aug-2024 |
| Texas | T104704231-23-32 | 30-Apr-2024 |
| Utah | TX026932023-14 | 31-Jul-2024 |

**ALS Houston, US** Date: 22-Jan-24

## Sample Receipt Checklist

**Work Order ID:** HS23020330 **Date/Time Received:** **08-Feb-2023 09:45**

**Client Name:** CBI-Houston **Received by:** **Corey Grandits**

**Completed By:** /S/ Paresh M. Giga (eSignature) 08-Feb-2023 11:04 (Date/Time) **Reviewed by:** /S/ Dane J. Wacasey (eSignature) 13-Feb-2023 15:19 (Date/Time)

Matrices: **GW/Water** Carrier name: **FedEx Priority Overnight**

| | | | |
|---|---|---|---|
| Shipping container/cooler in good condition? | Yes ☑ | No ☐ | Not Present ☐ |
| Custody seals intact on shipping container/cooler? | Yes ☑ | No ☐ | Not Present ☐ |
| Custody seals intact on sample bottles? | Yes ☐ | No ☐ | Not Present ☑ |
| VOA/TX1005/TX1006 Solids in hermetically sealed vials? | Yes ☐ | No ☐ | Not Present ☑ |
| Chain of custody present? | Yes ☑ | No ☐ | 1 Page(s) |
| Chain of custody signed when relinquished and received? | Yes ☑ | No ☐ | COC IDs:none |
| Samplers name present on COC? | Yes ☑ | No ☐ | |
| Chain of custody agrees with sample labels? | Yes ☑ | No ☐ | |
| Samples in proper container/bottle? | Yes ☑ | No ☐ | |
| Sample containers intact? | Yes ☑ | No ☐ | |
| Sufficient sample volume for indicated test? | Yes ☑ | No ☐ | |
| All samples received within holding time? | Yes ☑ | No ☐ | |
| Container/Temp Blank temperature in compliance? | Yes ☑ | No ☐ | |

| | | |
|---|---|---|
| Temperature(s)/Thermometer(s): | 2.9C/2.4C U/C | IR31 |
| Cooler(s)/Kit(s): | 48674 | |
| Date/Time sample(s) sent to storage: | 2/8/23 11:15 | |

| | | | |
|---|---|---|---|
| Water - VOA vials have zero headspace? | Yes ☑ | No ☐ | No VOA vials submitted ☐ |
| Water - pH acceptable upon receipt? | Yes ☐ | No ☐ | N/A ☑ |
| pH adjusted? | Yes ☐ | No ☐ | N/A ☑ |
| pH adjusted by: | | | |

Login Notes: create split for NO3 to send to ALS Kelso.

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

Corrective Action:

# CHAIN OF CUSTODY

Name Of Lab Shipping To: ALS 10450 Stanchiff Rd. Suite 210 Houston, TX, 77099 (281) 575-2190 ATTN: Dane Wacasey

Page 1 of 1

**Project:** APTIM — LONGHORN
ARMY AMMN. PLANT (LHAAP)
GROUNDWATER TREATMENT PLANT (GWTP)
KARNACK, TEXAS

**Project No.** 501032

**Job:** **LHAAP46 February 2023**

**Prepared By:** Scott Beesinger

**P.O. Number**

**HS23020330**

Aptim Environmental & Infrastucture, Inc.
LHAAP46 Febuary 2023

| Field Sample I.D. | Sample Matrix | Date / Time | MS / MSD | No. OF CONTAINERS | Analyses: VOC by SW 8260B | TOC by SM5310C | MEE by RSK 175 | Anions (chloride sulfate, nitrate) by SW9056 | CO2 by RSK 175 | Remarks (Preservatives, etc.) | Lab I.D.# |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 46WW05-230207 | WG | 2/7/23 0820 | | 12 | X | X | X | X | X | | |
| 46WW09-230207 | WG | 2/7/23 0910 | | 12 | X | X | X | X | X | | |
| 46WW09-230207-FD | WG | 2/7/23 0910 | | 12 | X | X | X | X | X | | |
| TRIP BLANK-230207 | W | 2/7/23 | | 2 | X | | | | | | |

Additional Remarks: **Standard TAT on all parameters. Please email results to Vicki.Graves@aptim.com and invoices to fedinvoices@aptim.com**

| Relinquished By: | Date | Time | Received By: | Date | Time | Relinquished By: | Date | Time | Received By: | Date | Time |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Scott Beesinger | 2/7/23 | 1430 | [illegible] | 2/8/23 | 0945 | | | | | | |

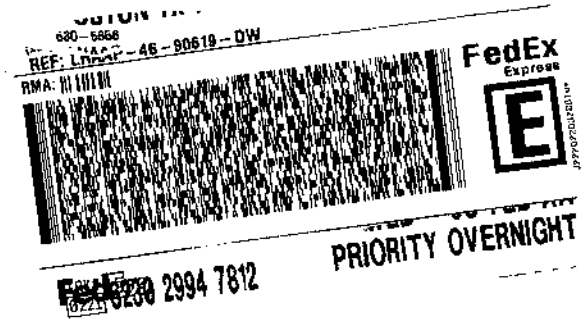
**For Lab Use Only**

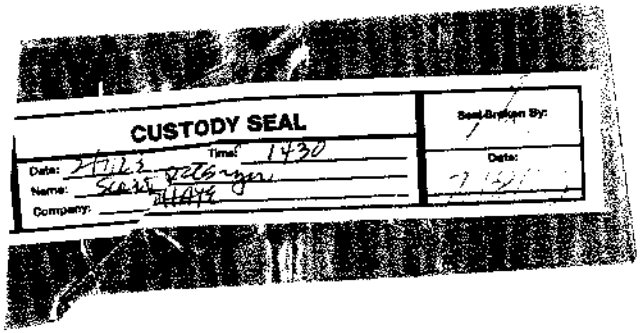
| Received At Lab By: | Date | Time | Airbill No. | Opened By: | Date | Time | Temp of Container | Seal No. | Condition |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |

Remarks: IR3: CF=0.5 48674 2.9°

(Word) S:\I-ces\Forms\Chain of Custody - BiWeekly


ALS
10450 Stancliff Rd., Suite 210
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5887


680-5868
REF: - 46 - 90619 - DW
RMA:
FedEx
Express
PRIORITY OVERNIGHT
2994 7812


CUSTODY SEAL
Time: 1430
Date:
Name:
Company:
Seal Broken By:
Date:

eurofins | Environment Testing

# ANALYTICAL REPORT

## PREPARED FOR

Attn: Dane Wacasey
ALS Group USA, Corp
10450 Stancliff Rd.
Suite 210
Houston, Texas 77099

Generated 2/13/2023 4:47:11 PM

## JOB DESCRIPTION

HS23020330

## JOB NUMBER

410-114936-1

Eurofins Lancaster Laboratories Environment Testing, LLC
2425 New Holland Pike
Lancaster PA 17601

See page two for job notes and contact information.



my EOL

# Eurofins Lancaster Laboratories Environment Testing, LLC

## Job Notes

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

## Authorization



Generated
2/13/2023 4:47:11 PM

Authorized for release by
Kelly Bauer, Project Manager
Kelly.Bauer@et.eurofinsus.com
(717)556-7262

# Eurofins Lancaster Laboratories Environment Testing, LLC

## Compliance Statement

Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.
· QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
· Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
· Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

This report shall not be reproduced except in full, without the written approval of the laboratory.

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# Definitions/Glossary

Client: ALS Group USA, Corp
Project/Site: HS23020330

Job ID: 410-114936-1

## Qualifiers

### GC VOA

| Qualifier | Qualifier Description |
|---|---|
| M | Manual integrated compound. |
| U | Undetected at the Limit of Detection. |

## Glossary

| Abbreviation | These commonly used abbreviations may or may not be present in this report. |
|---|---|
| ¤ | Listed under the "D" column to designate that the result is reported on a dry weight basis |
| %R | Percent Recovery |
| CFL | Contains Free Liquid |
| CFU | Colony Forming Unit |
| CNF | Contains No Free Liquid |
| DER | Duplicate Error Ratio (normalized absolute difference) |
| Dil Fac | Dilution Factor |
| DL | Detection Limit (DoD/DOE) |
| DL, RA, RE, IN | Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample |
| DLC | Decision Level Concentration (Radiochemistry) |
| EDL | Estimated Detection Limit (Dioxin) |
| LOD | Limit of Detection (DoD/DOE) |
| LOQ | Limit of Quantitation (DoD/DOE) |
| MCL | EPA recommended "Maximum Contaminant Level" |
| MDA | Minimum Detectable Activity (Radiochemistry) |
| MDC | Minimum Detectable Concentration (Radiochemistry) |
| MDL | Method Detection Limit |
| ML | Minimum Level (Dioxin) |
| MPN | Most Probable Number |
| MQL | Method Quantitation Limit |
| NC | Not Calculated |
| ND | Not Detected at the reporting limit (or MDL or EDL if shown) |
| NEG | Negative / Absent |
| POS | Positive / Present |
| PQL | Practical Quantitation Limit |
| PRES | Presumptive |
| QC | Quality Control |
| RER | Relative Error Ratio (Radiochemistry) |
| RL | Reporting Limit or Requested Limit (Radiochemistry) |
| RPD | Relative Percent Difference, a measure of the relative difference between two points |
| TEF | Toxicity Equivalent Factor (Dioxin) |
| TEQ | Toxicity Equivalent Quotient (Dioxin) |
| TNTC | Too Numerous To Count |

# Case Narrative

Client: ALS Group USA, Corp
Project/Site: HS23020330

Job ID: 410-114936-1

## Job ID: 410-114936-1

### Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

**Narrative**

**Job Narrative**
**410-114936-1**

**Receipt**
The samples were received on 2/9/2023 10:25 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 2.7°C

**GC VOA**
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

# Detection Summary

Client: ALS Group USA, Corp
Project/Site: HS23020330

Job ID: 410-114936-1

## Client Sample ID: 46WW05-230207 — Lab Sample ID: 410-114936-1

| Analyte | Result | Qualifier | LOQ | LOD | DL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|---|
| Carbon dioxide | 150000 | M | 12000 | | 2600 | ug/L | 1 | | RSK-175 | Total/NA |

## Client Sample ID: 46WW09-230207 — Lab Sample ID: 410-114936-2

| Analyte | Result | Qualifier | LOQ | LOD | DL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|---|
| Carbon dioxide | 54000 | | 12000 | | 2600 | ug/L | 1 | | RSK-175 | Total/NA |

## Client Sample ID: 46WW09-230207-FD — Lab Sample ID: 410-114936-3

| Analyte | Result | Qualifier | LOQ | LOD | DL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|---|
| Carbon dioxide | 59000 | | 12000 | | 2600 | ug/L | 1 | | RSK-175 | Total/NA |

This Detection Summary does not include radiochemical test results.

# Client Sample Results

Client: ALS Group USA, Corp
Project/Site: HS23020330

Job ID: 410-114936-1

## Client Sample ID: 46WW05-230207

**Lab Sample ID: 410-114936-1**
**Matrix: Water**
**Date Collected: 02/07/23 08:20**
**Date Received: 02/09/23 10:25**

### Method: RSK-175 - Dissolved Gases (GC)

| Analyte | Result | Qualifier | LOQ | LOD | DL | Unit | D | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Carbon dioxide | 150000 | M | 12000 | | 2600 | ug/L | | 02/10/23 10:19 | 1 |

## Client Sample ID: 46WW09-230207

**Lab Sample ID: 410-114936-2**
**Matrix: Water**
**Date Collected: 02/07/23 09:10**
**Date Received: 02/09/23 10:25**

### Method: RSK-175 - Dissolved Gases (GC)

| Analyte | Result | Qualifier | LOQ | LOD | DL | Unit | D | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Carbon dioxide | 54000 | | 12000 | | 2600 | ug/L | | 02/10/23 10:27 | 1 |

## Client Sample ID: 46WW09-230207-FD

**Lab Sample ID: 410-114936-3**
**Matrix: Water**
**Date Collected: 02/07/23 09:10**
**Date Received: 02/09/23 10:25**

### Method: RSK-175 - Dissolved Gases (GC)

| Analyte | Result | Qualifier | LOQ | LOD | DL | Unit | D | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Carbon dioxide | 59000 | | 12000 | | 2600 | ug/L | | 02/10/23 10:35 | 1 |

# QC Sample Results

Client: ALS Group USA, Corp
Project/Site: HS23020330

Job ID: 410-114936-1

## Method: RSK-175 - Dissolved Gases (GC)

**Lab Sample ID: MB 410-343431/1-A**
**Matrix: Water**
**Analysis Batch: 343395**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 343431**

| Analyte | MB Result | MB Qualifier | LOQ | LOD | DL | Unit | D | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Carbon dioxide | 2600 | U | 12000 | | 2600 | ug/L | | 02/10/23 09:12 | 1 |

**Lab Sample ID: LCS 410-343431/2-A**
**Matrix: Water**
**Analysis Batch: 343395**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 343431**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Carbon dioxide | | | 35800 | 33700 | | ug/L | | 94 | 80 - 122 | | |

# QC Association Summary

Client: ALS Group USA, Corp
Project/Site: HS23020330

Job ID: 410-114936-1

## GC VOA

### Analysis Batch: 343395

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 410-114936-1 | 46WW05-230207 | Total/NA | Water | RSK-175 | 343431 |
| 410-114936-2 | 46WW09-230207 | Total/NA | Water | RSK-175 | 343431 |
| 410-114936-3 | 46WW09-230207-FD | Total/NA | Water | RSK-175 | 343431 |
| MB 410-343431/1-A | Method Blank | Total/NA | Water | RSK-175 | 343431 |
| LCS 410-343431/2-A | Lab Control Sample | Total/NA | Water | RSK-175 | 343431 |

### Prep Batch: 343431

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 410-114936-1 | 46WW05-230207 | Total/NA | Water | RSK-175 | |
| 410-114936-2 | 46WW09-230207 | Total/NA | Water | RSK-175 | |
| 410-114936-3 | 46WW09-230207-FD | Total/NA | Water | RSK-175 | |
| MB 410-343431/1-A | Method Blank | Total/NA | Water | RSK-175 | |
| LCS 410-343431/2-A | Lab Control Sample | Total/NA | Water | RSK-175 | |

# Lab Chronicle

Client: ALS Group USA, Corp
Project/Site: HS23020330

Job ID: 410-114936-1

## Client Sample ID: 46WW05-230207
**Date Collected: 02/07/23 08:20**
**Date Received: 02/09/23 10:25**

## Lab Sample ID: 410-114936-1
**Matrix: Water**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab | Prepared or Analyzed |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | RSK-175 | | | 343431 | WN7O | ELLE | 02/10/23 08:21 |
| Total/NA | Analysis | RSK-175 | | 1 | 343395 | WN7O | ELLE | 02/10/23 10:19 |

## Client Sample ID: 46WW09-230207
**Date Collected: 02/07/23 09:10**
**Date Received: 02/09/23 10:25**

## Lab Sample ID: 410-114936-2
**Matrix: Water**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab | Prepared or Analyzed |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | RSK-175 | | | 343431 | WN7O | ELLE | 02/10/23 08:21 |
| Total/NA | Analysis | RSK-175 | | 1 | 343395 | WN7O | ELLE | 02/10/23 10:27 |

## Client Sample ID: 46WW09-230207-FD
**Date Collected: 02/07/23 09:10**
**Date Received: 02/09/23 10:25**

## Lab Sample ID: 410-114936-3
**Matrix: Water**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab | Prepared or Analyzed |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | RSK-175 | | | 343431 | WN7O | ELLE | 02/10/23 08:21 |
| Total/NA | Analysis | RSK-175 | | 1 | 343395 | WN7O | ELLE | 02/10/23 10:35 |

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

# Accreditation/Certification Summary

Client: ALS Group USA, Corp
Project/Site: HS23020330

Job ID: 410-114936-1

## Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

The accreditations/certifications listed below are applicable to this report.

| Authority | Program | Identification Number | Expiration Date |
|---|---|---|---|
| A2LA | Dept. of Defense ELAP | 0001.01 | 11-30-24 |

# Method Summary

Client: ALS Group USA, Corp
Project/Site: HS23020330

Job ID: 410-114936-1

| Method | Method Description | Protocol | Laboratory |
|---|---|---|---|
| RSK-175 | Dissolved Gases (GC) | RSK | ELLE |
| RSK-175 | Dissolved Gases Prep | RSK | ELLE |

**Protocol References:**

RSK = Sample Prep And Calculations For Dissolved Gas Analysis In Water Samples Using A GC Headspace Equilibration Technique, RSKSOP-175, Rev. 0, 8/11/94, USEPA Research Lab

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

# Sample Summary

Client: ALS Group USA, Corp
Project/Site: HS23020330

Job ID: 410-114936-1

| Lab Sample ID | Client Sample ID | Matrix | Collected | Received |
|---|---|---|---|---|
| 410-114936-1 | 2 | Water | 02/07/23 08:20 | 02/09/23 10:25 |
| 410-114936-2 | 46WW09-230207 | Water | 02/07/23 09:10 | 02/09/23 10:25 |
| 410-114936-3 | 46WW09-230207-FD | Water | 02/07/23 09:10 | 02/09/23 10:25 |

10450 Stancliff Rd, Ste 210
Houston, TX 77099
**T:** +1 281 530 5656
**F:** +1 281 530 5887
**www.alsglobal.com**

410-114936 Chain of Custody

# Subcontract Chain of Custody

**SAMPLING STATE:** **Dept of Defense** **COC ID:** **20918**

**SUBCONTRACT TO:**

Eurofins Lancaster Laboratories Envt Testing
2425 New Holland Pike
Lancaster, PA 17601 **Phone:** +1 717 656 2300

**CUSTOMER INFORMATION:**

| | |
|---|---|
| **Company:** | ALS Houston |
| **Contact:** | Dane J. Wacasey |
| **Address:** | 10450 Stancliff Rd, Ste 210 |
| **Phone:** | +1 281 530 5656 |
| **Email:** | Dane.Wacasey@alsglobal.com |
| **Alternate Contact:** | Jumoke M. Lawal |
| **Email:** | jumoke.lawal@alsglobal.com |

**INVOICE INFORMATION:**

| | |
|---|---|
| **Company:** | ALS Houston |
| **Contact:** | Accounts Payable |
| **Address:** | 10450 Stancliff Rd, Ste 210 |
| **Phone:** | +1 281 530 5656 |
| **Reference:** | HS23020330 |
| **TSR:** | Ron Martino |

| | LAB SAMPLE ID | CLIENT SAMPLE ID | MATRIX | COLLECT DATE |
|---|---|---|---|---|
| | ANALYSIS REQUESTED | | | DUE DATE |
| 1. | **HS23020330-01** | **46WW05-230207** | **Water** | **07 Feb 2023 08:20** |
| | RSK-CO2; DoD Level II & IV, Equ_APTIM_GISKey | | | 22 Feb 2023 |
| 2. | **HS23020330-02** | **46WW09-230207** | **Water** | **07 Feb 2023 09:10** |
| | RSK-CO2; DoD Level II & IV, Equ_APTIM_GISKey | | | 22 Feb 2023 |
| 3. | **HS23020330-03** | **46WW09-230207-FD** | **Water** | **07 Feb 2023 09:10** |
| | RSK-CO2; DoD Level II & IV, Equ_APTIM_GISKey | | | 22 Feb 2023 |

**Comments:** Please analyze for the analysis listed above.
Send report to the emails shown above.

**QC Level:** DOD IV (DoD Data Package)

Relinquished By: _____ Date/Time: 2/8/23 1800.

Received By: _____ Date/Time: 2/9/23 10:25

Cooler ID(s): _____ Temperature(s): _____

RIGHT SOLUTIONS | RIGHT PARTNER

08 Feb 2023 Page 1 of 1

2.7

10450 Stancliff Rd, Ste 210
Houston, TX 77099
**T:** +1 281 530 5656
**F:** +1 281 530 5887
**www.alsglobal.com**

# Purchase Order

**PO: HS23020330**

**VENDOR:**

Eurofins Lancaster Laboratories Envt Testing
2425 New Holland Pike
Lancaster, PA 17601

**Phone:** +1 717 656 2300

**CUSTOMER INFORMATION:**

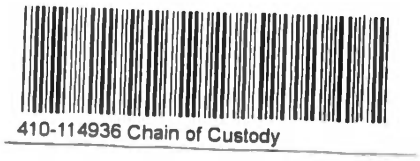
| | |
|---|---|
| **Company:** | ALS Houston |
| **Contact:** | Dane J. Wacasey |
| **Address:** | 10450 Stancliff Rd, Ste 210 |
| **Phone:** | +1 281 530 5656 |
| **Email:** | Dane.Wacasey@alsglobal.com |
| **Alternate Contact:** | Jumoke M. Lawal |
| **Email:** | jumoke.lawal@alsglobal.com |

**INVOICE INFORMATION:**

| | |
|---|---|
| **Company:** | ALS Houston |
| **Contact:** | Accounts Payable |
| **Address:** | 10450 Stancliff Rd, Ste 210 |
| **Phone:** | +1 281 530 5656 |
| **Reference:** | 20918 |
| **TSR:** | Ron Martino |

| | Item | Catalog No | Unit Price | Quantity | Ext Price |
|---|---|---|---|---|---|
| 1. | RSK-CO2; DoD Level II & IV, Equ_APTIM_GISKey | NA | $120.00 | 3 | $360.00 |

**Order Total:** $360.00




10450 Stancliff Rd, Ste 210
Houston, TX 77099
**T:** +1 281 530 5656
**F:** +1 281 530 5887
**www.alsglobal.com**

# Subcontract Chain of Custody

**SAMPLING STATE:** **Dept of Defense** **COC ID:** **20918**

**SUBCONTRACT TO:**

Eurofins Lancaster Laboratories Envt Testing
2425 New Holland Pike
Lancaster, PA 17601 **Phone:** +1 717 656 2300

**CUSTOMER INFORMATION:**

| | |
|---|---|
| **Company:** | ALS Houston |
| **Contact:** | Dane J. Wacasey |
| **Address:** | 10450 Stancliff Rd, Ste 210 |
| **Phone:** | +1 281 530 5656 |
| **Email:** | Dane.Wacasey@alsglobal.com |
| **Alternate Contact:** | Jumoke M. Lawal |
| **Email:** | jumoke.lawal@alsglobal.com |

**INVOICE INFORMATION:**

| | |
|---|---|
| **Company:** | ALS Houston |
| **Contact:** | Accounts Payable |
| **Address:** | 10450 Stancliff Rd, Ste 210 |
| **Phone:** | +1 281 530 5656 |
| **Reference:** | HS23020330 |
| **TSR:** | Ron Martino |

| | LAB SAMPLE ID | CLIENT SAMPLE ID | MATRIX | COLLECT DATE |
|---|---|---|---|---|
| | ANALYSIS REQUESTED | | | DUE DATE |
| 1. | **HS23020330-01** | **46WW05-230207** | **Water** | **07 Feb 2023 08:20** |
| | RSK-CO2; DoD Level II & IV, Equ_APTIM_GISKey | | | 22 Feb 2023 |
| 2. | **HS23020330-02** | **46WW09-230207** | **Water** | **07 Feb 2023 09:10** |
| | RSK-CO2; DoD Level II & IV, Equ_APTIM_GISKey | | | 22 Feb 2023 |
| 3. | **HS23020330-03** | **46WW09-230207-FD** | **Water** | **07 Feb 2023 09:10** |
| | RSK-CO2; DoD Level II & IV, Equ_APTIM_GISKey | | | 22 Feb 2023 |

**Comments:** Please analyze for the analysis listed above.
Send report to the emails shown above.

**QC Level:** DOD IV (DoD Data Package)

Relinquished By: _____ Date/Time: 2/8/23 1800.

Received By: _____ Date/Time: 2/9/23 10:25

Cooler ID(s): _____ Temperature(s): _____

RIGHT SOLUTIONS | RIGHT PARTNER

08 Feb 2023 Page 1 of 1

2.7

10450 Stancliff Rd, Ste 210
Houston, TX 77099
**T:** +1 281 530 5656
**F:** +1 281 530 5887
**www.alsglobal.com**

# Purchase Order

**PO: HS23020330**

**VENDOR:**

Eurofins Lancaster Laboratories Envt Testing
2425 New Holland Pike
Lancaster, PA 17601

**Phone:** +1 717 656 2300

**CUSTOMER INFORMATION:**

| | |
|---|---|
| **Company:** | ALS Houston |
| **Contact:** | Dane J. Wacasey |
| **Address:** | 10450 Stancliff Rd, Ste 210 |
| **Phone:** | +1 281 530 5656 |
| **Email:** | Dane.Wacasey@alsglobal.com |
| **Alternate Contact:** | Jumoke M. Lawal |
| **Email:** | jumoke.lawal@alsglobal.com |

**INVOICE INFORMATION:**

| | |
|---|---|
| **Company:** | ALS Houston |
| **Contact:** | Accounts Payable |
| **Address:** | 10450 Stancliff Rd, Ste 210 |
| **Phone:** | +1 281 530 5656 |
| **Reference:** | 20918 |
| **TSR:** | Ron Martino |

| | Item | Catalog No | Unit Price | Quantity | Ext Price |
|---|---|---|---|---|---|
| 1. | RSK-CO2; DoD Level II & IV, Equ_APTIM_GISKey | NA | $120.00 | 3 | $360.00 |
| | | | | **Order Total:** | $360.00 |

# Login Sample Receipt Checklist

Client: ALS Group USA, Corp

Job Number: 410-114936-1

**Login Number: 114936**
**List Number: 1**
**Creator: Ballard, Megan**

**List Source: Eurofins Lancaster Laboratories Environment Testing, LLC**

| Question | Answer | Comment |
|---|---|---|
| The cooler's custody seal is intact. | True | |
| The cooler or samples do not appear to have been compromised or tampered with. | True | |
| Samples were received on ice. | True | |
| Cooler Temperature is acceptable (</=6C, not frozen). | True | |
| Cooler Temperature is recorded. | True | |
| WV: Container Temperature is acceptable (</=6C, not frozen). | N/A | |
| WV: Container Temperature is recorded. | N/A | |
| COC is present. | True | |
| COC is filled out in ink and legible. | True | |
| COC is filled out with all pertinent information. | True | |
| There are no discrepancies between the containers received and the COC. | True | |
| Sample containers have legible labels. | True | |
| Containers are not broken or leaking. | True | |
| Sample collection date/times are provided. | True | |
| Appropriate sample containers are used. | True | |
| Sample bottles are completely filled. | True | |
| There is sufficient vol. for all requested analyses. | True | |
| Is the Field Sampler's name present on COC? | False | Received project as a subcontract. |
| Sample custody seals are intact. | N/A | |
| VOA sample vials do not have headspace >6mm in diameter (none, if from WV)? | True | |

# HS23020330-MSVOA-SW8260

ALS WO# HS23020330

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Form 1

# Organic Analysis Data Sheet

## Volatiles by  by EPA 8260

Workorder

HS23020330

Client

Aptim Environmental & Infrastucture, Inc.

Project

LHAAP 46 Febuary 2023

02/28/2023

ALS Environmental–Houston Laboratory
10450 Stancliff Road, Suite 210, Houston, TX 77099
Phone (281) 530-5656 Fax (281) 530-5887
www.alsglobal.com

# Form 1 - Organic Analysis Data Sheet

**Client** Aptim Environmental & Infrastucture, Inc.

**Project** LHAAP 46 Febuary 2023

Workorder
**HS23020330**

## Volatiles by EPA 8260

| HS23020330-01 | | | | Collected | Received | Matrix | Basis |
|---|---|---|---|---|---|---|---|
| **46WW05-230207** | | | | 02/07/23 08:20 | 02/08/23 09:45 | Water | Wet |

| Analyte | Units | Result | Q | DL | LOD | LOQ | DF | Analysis Date | Run ID | DataFile |
|---|---|---|---|---|---|---|---|---|---|---|
| cis-1,2-Dichloroethene | ug/L | 1.8 | | 0.20 | 1.0 | 1.0 | 1 | 02/11/23 18:55 | VOA6_427850 | X021121 |
| Trichloroethene | ug/L | 33 | | 0.20 | 1.0 | 1.0 | 1 | 02/11/23 18:55 | VOA6_427850 | X021121 |
| Vinyl chloride | ug/L | 1.0 | U | 0.20 | 1.0 | 1.0 | 1 | 02/11/23 18:55 | VOA6_427850 | X021121 |

# Form 1 - Organic Analysis Data Sheet

**Client** Aptim Environmental & Infrastucture, Inc.

**Project** LHAAP 46 Febuary 2023

Workorder
**HS23020330**

## Volatiles by EPA 8260

| HS23020330-02 | | | | Collected | Received | Matrix | Basis |
|---|---|---|---|---|---|---|---|
| **46WW09-230207** | | | | 02/07/23 09:10 | 02/08/23 09:45 | Water | Wet |

| Analyte | Units | Result | Q | DL | LOD | LOQ | DF | Analysis Date | Run ID | DataFile |
|---|---|---|---|---|---|---|---|---|---|---|
| cis-1,2-Dichloroethene | ug/L | 1.0 | U | 0.20 | 1.0 | 1.0 | 1 | 02/11/23 18:13 | VOA6_427850 | X021119 |
| Trichloroethene | ug/L | 1.0 | U | 0.20 | 1.0 | 1.0 | 1 | 02/11/23 18:13 | VOA6_427850 | X021119 |
| Vinyl chloride | ug/L | 1.0 | U | 0.20 | 1.0 | 1.0 | 1 | 02/11/23 18:13 | VOA6_427850 | X021119 |

# Form 1 - Organic Analysis Data Sheet

**Client** Aptim Environmental & Infrastucture, Inc.

**Project** LHAAP 46 Febuary 2023

Workorder
**HS23020330**

## Volatiles by EPA 8260

| HS23020330-03 | | | | Collected | Received | Matrix | Basis |
|---|---|---|---|---|---|---|---|
| **46WW09-230207-FD** | | | | 02/07/23 09:10 | 02/08/23 09:45 | Water | Wet |

| Analyte | Units | Result | Q | DL | LOD | LOQ | DF | Analysis Date | Run ID | DataFile |
|---|---|---|---|---|---|---|---|---|---|---|
| cis-1,2-Dichloroethene | ug/L | 1.0 | U | 0.20 | 1.0 | 1.0 | 1 | 02/11/23 18:34 | VOA6_427850 | X021120 |
| Trichloroethene | ug/L | 1.0 | U | 0.20 | 1.0 | 1.0 | 1 | 02/11/23 18:34 | VOA6_427850 | X021120 |
| Vinyl chloride | ug/L | 1.0 | U | 0.20 | 1.0 | 1.0 | 1 | 02/11/23 18:34 | VOA6_427850 | X021120 |

# Form 1 - Organic Analysis Data Sheet

**Client** Aptim Environmental & Infrastucture, Inc.

**Project** LHAAP 46 Febuary 2023

Workorder
**HS23020330**

## Volatiles by EPA 8260

| HS23020330-04 | Collected | Received | Matrix | Basis |
|---|---|---|---|---|
| **Trip Blank-2302207** | 02/07/23 00:00 | 02/08/23 09:45 | Water | Wet |

| Analyte | Units | Result | Q | DL | LOD | LOQ | DF | Analysis Date | Run ID | DataFile |
|---|---|---|---|---|---|---|---|---|---|---|
| cis-1,2-Dichloroethene | ug/L | 1.0 | U | 0.20 | 1.0 | 1.0 | 1 | 02/11/23 16:28 | VOA6_427850 | X021114 |
| Trichloroethene | ug/L | 1.0 | U | 0.20 | 1.0 | 1.0 | 1 | 02/11/23 16:28 | VOA6_427850 | X021114 |
| Vinyl chloride | ug/L | 1.0 | U | 0.20 | 1.0 | 1.0 | 1 | 02/11/23 16:28 | VOA6_427850 | X021114 |

# Form 1 - Organic Analysis Data Sheet

**Client** Aptim Environmental & Infrastucture, Inc.

**Project** LHAAP 46 Febuary 2023

Workorder
**HS23020330**

## Volatiles by EPA 8260

| VBLKW-230211 | Collected | Received | Matrix | Basis |
|---|---|---|---|---|
| **VBLKW-230211** | NA | NA | Aqueous | Wet |

| Analyte | Units | Result | Q | DL | LOD | LOQ | DF | Analysis Date | Run ID | DataFile |
|---|---|---|---|---|---|---|---|---|---|---|
| cis-1,2-Dichloroethene | ug/L | 1.0 | U | 0.20 | 1.0 | 1.0 | 1 | 02/11/23 14:00 | VOA6_427850 | X021107 |
| Trichloroethene | ug/L | 1.0 | U | 0.20 | 1.0 | 1.0 | 1 | 02/11/23 14:00 | VOA6_427850 | X021107 |
| Vinyl chloride | ug/L | 1.0 | U | 0.20 | 1.0 | 1.0 | 1 | 02/11/23 14:00 | VOA6_427850 | X021107 |

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Form 2

# System Monitoring Compound Recovery

## Volatiles by  by EPA 8260

Workorder

HS23020330

Client

Aptim Environmental & Infrastucture, Inc.

Project

LHAAP 46 Febuary 2023

02/28/2023

ALS Environmental–Houston Laboratory
10450 Stancliff Road, Suite 210, Houston, TX 77099
Phone (281) 530-5656 Fax (281) 530-5887
www.alsglobal.com

# Form 2 - System Monitoring Compound Recovery

**Client** Aptim Environmental & Infrastucture, Inc.

**Project** LHAAP 46 Febuary 2023

Workorder
**HS23020330**

RunID
VOA6_427850

## Volatiles by EPA 8260

| CCV | Analyzed 02/11/23 | | Conc Units µg/L | | DF 1 |
|---|---|---|---|---|---|
| Surrogate | Result Conc | Spike Conc | %Recovery | %Recovery Limits | Q |
| 1,2-Dichloroethane-d4 | 50.38 | 50 | 101 | 80-120 | |
| 4-Bromofluorobenzene | 53.78 | 50 | 108 | 80-120 | |
| Dibromofluoromethane | 47.17 | 50 | 94.3 | 80-120 | |
| Toluene-d8 | 50.78 | 50 | 102 | 80-120 | |

| CCB | Analyzed 02/11/23 | | Conc Units µg/L | | DF 1 |
|---|---|---|---|---|---|
| Surrogate | Result Conc | Spike Conc | %Recovery | %Recovery Limits | Q |
| 1,2-Dichloroethane-d4 | 49.48 | 50 | 99.0 | 80-120 | |
| 4-Bromofluorobenzene | 54.48 | 50 | 109 | 80-120 | |
| Dibromofluoromethane | 46.72 | 50 | 93.4 | 80-120 | |
| Toluene-d8 | 53.06 | 50 | 106 | 80-120 | |

| VLCSW-230211 | Analyzed 02/11/23 | | Conc Units µg/L | | DF 1 |
|---|---|---|---|---|---|
| Surrogate | Result Conc | Spike Conc | %Recovery | %Recovery Limits | Q |
| 1,2-Dichloroethane-d4 | 54.8 | 50 | 110 | 81-118 | |
| 4-Bromofluorobenzene | 54.39 | 50 | 109 | 85-114 | |
| Dibromofluoromethane | 49.85 | 50 | 99.7 | 80-119 | |
| Toluene-d8 | 50.95 | 50 | 102 | 89-112 | |

| VBLKW-230211 | Analyzed 02/11/23 | | Conc Units µg/L | | DF 1 |
|---|---|---|---|---|---|
| Surrogate | Result Conc | Spike Conc | %Recovery | %Recovery Limits | Q |
| 1,2-Dichloroethane-d4 | 50.07 | 50 | 100 | 81-118 | |
| 4-Bromofluorobenzene | 53.56 | 50 | 107 | 85-114 | |
| Dibromofluoromethane | 47.35 | 50 | 94.7 | 80-119 | |
| Toluene-d8 | 53.07 | 50 | 106 | 89-112 | |

Q - Surrogate %Recovery Flag  * - %Recovery / RPD Outside Limits

# Form 2 - System Monitoring Compound Recovery

**Client** Aptim Environmental & Infrastucture, Inc.

**Project** LHAAP 46 Febuary 2023

Workorder
**HS23020330**

RunID
VOA6_427850

## Volatiles by EPA 8260

| HS23020265-04MS | Analyzed 02/11/23 | | Conc Units µg/L | | DF 1 |
|---|---|---|---|---|---|
| Surrogate | Result Conc | Spike Conc | %Recovery | %Recovery Limits | Q |
| 1,2-Dichloroethane-d4 | 50.33 | 50 | 101 | 81-118 | |
| 4-Bromofluorobenzene | 54.23 | 50 | 108 | 85-114 | |
| Dibromofluoromethane | 46.11 | 50 | 92.2 | 80-119 | |
| Toluene-d8 | 53.66 | 50 | 107 | 89-112 | |

| HS23020265-04MSD | Analyzed 02/11/23 | | Conc Units µg/L | | DF 1 |
|---|---|---|---|---|---|
| Surrogate | Result Conc | Spike Conc | %Recovery | %Recovery Limits | Q |
| 1,2-Dichloroethane-d4 | 50.69 | 50 | 101 | 81-118 | |
| 4-Bromofluorobenzene | 53.66 | 50 | 107 | 85-114 | |
| Dibromofluoromethane | 45.8 | 50 | 91.6 | 80-119 | |
| Toluene-d8 | 53.17 | 50 | 106 | 89-112 | |

| HS23020330-04 | Analyzed 02/11/23 | | Conc Units µg/L | | DF 1 |
|---|---|---|---|---|---|
| Surrogate | Result Conc | Spike Conc | %Recovery | %Recovery Limits | Q |
| 1,2-Dichloroethane-d4 | 50 | 50 | 100 | 81-118 | |
| 4-Bromofluorobenzene | 53 | 50 | 107 | 85-114 | |
| Dibromofluoromethane | 47 | 50 | 93.9 | 80-119 | |
| Toluene-d8 | 53 | 50 | 107 | 89-112 | |

| HS23020330-02 | Analyzed 02/11/23 | | Conc Units µg/L | | DF 1 |
|---|---|---|---|---|---|
| Surrogate | Result Conc | Spike Conc | %Recovery | %Recovery Limits | Q |
| 1,2-Dichloroethane-d4 | 50 | 50 | 100 | 81-118 | |
| 4-Bromofluorobenzene | 53 | 50 | 106 | 85-114 | |
| Dibromofluoromethane | 47 | 50 | 94.2 | 80-119 | |
| Toluene-d8 | 53 | 50 | 107 | 89-112 | |

Q - Surrogate %Recovery Flag  * - %Recovery / RPD Outside Limits

# Form 2 - System Monitoring Compound Recovery

**Client** Aptim Environmental & Infrastucture, Inc.

**Project** LHAAP 46 Febuary 2023

Workorder
**HS23020330**

RunID
VOA6_427850

## Volatiles by EPA 8260

| HS23020330-03 | Analyzed 02/11/23 | | Conc Units µg/L | | DF 1 |
|---|---|---|---|---|---|
| Surrogate | Result Conc | Spike Conc | %Recovery | %Recovery Limits | Q |
| 1,2-Dichloroethane-d4 | 50 | 50 | 100 | 81-118 | |
| 4-Bromofluorobenzene | 53 | 50 | 106 | 85-114 | |
| Dibromofluoromethane | 47 | 50 | 93.1 | 80-119 | |
| Toluene-d8 | 53 | 50 | 106 | 89-112 | |

| HS23020330-01 | Analyzed 02/11/23 | | Conc Units µg/L | | DF 1 |
|---|---|---|---|---|---|
| Surrogate | Result Conc | Spike Conc | %Recovery | %Recovery Limits | Q |
| 1,2-Dichloroethane-d4 | 51 | 50 | 102 | 81-118 | |
| 4-Bromofluorobenzene | 54 | 50 | 108 | 85-114 | |
| Dibromofluoromethane | 47 | 50 | 93.8 | 80-119 | |
| Toluene-d8 | 54 | 50 | 109 | 89-112 | |

Q - Surrogate %Recovery Flag  * - %Recovery / RPD Outside Limits

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Form 3A

# Matrix Spike/Spike Duplicate Recovery

## Volatiles by  by EPA 8260

Workorder

HS23020330

Client

Aptim Environmental & Infrastucture, Inc.

Project

LHAAP 46 Febuary 2023

02/28/2023

ALS Environmental–Houston Laboratory
10450 Stancliff Road, Suite 210, Houston, TX 77099
Phone (281) 530-5656 Fax (281) 530-5887
www.alsglobal.com

# Form 3A - Matrix Spike/Spike Duplicate Recovery

**Client** Aptim Environmental & Infrastucture, Inc.

**Project** LHAAP 46 Febuary 2023

Workorder
**HS23020330**

| | | HS23020265-04 | | HS23020265-04MS | | | | HS23020265-04MSD | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Sample Matrix** | Aqueous | **Run Date** | 02/11/23 | 02/11/23 | | | | 02/11/23 | | | | | | |
| **Units** | µg/L | **Run Time** | 14:42 | 15:24 | | | | 15:45 | | | | | | |
| | | **Data File** | X021109.D | X021111.D | | | | X021112.D | | | | | | |
| Analyte | %R Limits | DF | Result | MS Result | Spike Added | %R | Q | MSD Result | Spike Added | %R | Q | RPD Limit | RPD | Q |
| cis-1,2-Dichloroethene | 78-123 | 1 | 1.768 | 17.38 | 20.00 | 78 | | 22.7 | 20.00 | 105 | | 20 | 26.6 | |
| Trichloroethene | 79-123 | 1 | 28.68 | 44.84 | 20.00 | 81 | | 48.93 | 20.00 | 101 | | 20 | 8.70 | |
| Vinyl chloride | 58-137 | 1 | 0.4346 | 11.53 | 20.00 | 56 | * | 14.19 | 20.00 | 69 | | 20 | 20.7 | |

# - %Recovery / RPD Flag  * - %Recovery / RPD Outside Limits  OL - Outside Limits

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Form 3B

# Laboratory Control Sample Recovery

## Volatiles by  by EPA 8260

Workorder

HS23020330

Client

Aptim Environmental & Infrastucture, Inc.

Project

LHAAP 46 Febuary 2023

02/28/2023

ALS Environmental–Houston Laboratory
10450 Stancliff Road, Suite 210, Houston, TX 77099
Phone (281) 530-5656 Fax (281) 530-5887
www.alsglobal.com

# Form 3B - Laboratory Control Sample Recovery

**Client** Aptim Environmental & Infrastucture, Inc.

**Project** LHAAP 46 Febuary 2023

Workorder
**HS23020330**

## Volatiles by EPA 8260

| VOA6_427850 | | QC ID | VLCSW-230211 | | | |
|---|---|---|---|---|---|---|
| QC Matrix Aqueous | Units | Run Date | 02/11/23 | | | |
| | %REC | Run Time | 13:18 | | | |
| Analyte | %R Limits | Spike Added | LCS Result | %R | Q | |
| 1,2-Dichloroethane-d4 | 81-118 | 50 | 54.8 | 110 | | |
| 4-Bromofluorobenzene | 85-114 | 50 | 54.39 | 109 | | |
| cis-1,2-Dichloroethene | 78-123 | 20 | 18.49 | 92 | | |
| Dibromofluoromethane | 80-119 | 50 | 49.85 | 100 | | |
| Toluene-d8 | 89-112 | 50 | 50.95 | 102 | | |
| Trichloroethene | 79-123 | 20 | 18.29 | 91 | | |
| Vinyl chloride | 58-137 | 20 | 18.95 | 95 | | |

# - %Recovery / RPD Flag  * - %Recovery / RPD Outside Limits

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Form 4

# Method Blank Summary

## Volatiles by  by EPA 8260

Workorder

HS23020330

Client

Aptim Environmental & Infrastucture, Inc.

Project

LHAAP 46 Febuary 2023

02/28/2023

ALS Environmental–Houston Laboratory
10450 Stancliff Road, Suite 210, Houston, TX 77099
Phone (281) 530-5656 Fax (281) 530-5887
www.alsglobal.com

# Form 4 - Method Blank Summary

**Client** Aptim Environmental & Infrastucture, Inc.

**Project** LHAAP 46 Febuary 2023

Workorder
**HS23020330**

## Volatiles by EPA 8260

| Client Sample ID | Type | Lab Sample ID | File ID | Date Analyzed | Run ID |
|---|---|---|---|---|---|
| METHOD BLANK | MBLK | VBLKW-230211 | X021107.D | 02/11/23 14:00 | VOA6_427850 |
| VLCSW-230211 | LCS | VLCSW-230211 | X021105.D | 02/11/23 13:18 | VOA6_427850 |
| BatchQC | MS | HS23020265-04MS | X021111.D | 02/11/23 15:24 | VOA6_427850 |
| BatchQC | MSD | HS23020265-04MSD | X021112.D | 02/11/23 15:45 | VOA6_427850 |
| Trip Blank-2302207 | SAMP | HS23020330-04 | X021114.D | 02/11/23 16:28 | VOA6_427850 |
| 46WW09-230207 | SAMP | HS23020330-02 | X021119.D | 02/11/23 18:13 | VOA6_427850 |
| 46WW09-230207-FD | SAMP | HS23020330-03 | X021120.D | 02/11/23 18:34 | VOA6_427850 |
| 46WW05-230207 | SAMP | HS23020330-01 | X021121.D | 02/11/23 18:55 | VOA6_427850 |

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Form 5

# Instrument Performance Check

## Volatiles by  by EPA 8260

Workorder

HS23020330

Client

Aptim Environmental & Infrastucture, Inc.

Project

LHAAP 46 Febuary 2023

02/28/2023

ALS Environmental–Houston Laboratory
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# Form 5 - Instrument Performance Check

**Client** Aptim Environmental & Infrastucture, Inc.

**Project** LHAAP 46 Febuary 2023

Workorder
**HS23020330**

RunID
VOA6_424237

Tune File X121601.D 12/16/22 11:17

| m / e | Ion Abundance Criterion | %RA |
|---|---|---|
| 50 | 15.0 - 40.0% of mass 95 | 18.3 (18.4) |
| 75 | 30.0 - 60.0% of mass 95 | 46.1 (46.1) |
| 95 | Base peak, 100% RA | 100 (100) |
| 96 | 5.0 - 9.0% of mass 95 | 7.2 (7.16) |
| 173 | Less than 2.0% of mass 174 | 0.8 (0.897) 1 |
| 174 | 50.0 - 120.0% of mass 95 | 89 (89) |
| 175 | 4.0 - 9.0% of mass 174 | 7 (7.82) 1 |
| 176 | 93.0 - 101.0% of mass 174 | 87.4 (98.2) 1 |
| 177 | 5.0 - 9.0% of mass 176 | 5.8 (6.59) 2 |

Value is % of mass 1) 174 2) 176 RA - Relative Abundance

This check applies to the following analyses

| | Type | Date Analyzed | Lab File ID | Sample ID |
|---|---|---|---|---|
| 1 | ICAL1 | 12/16/22 11:38 | X121602 | VSTD000.25 |
| 2 | ICAL2 | 12/16/22 12:20 | X121603 | VSTD000.5 |
| 3 | ICAL3 | 12/16/22 12:41 | X121604 | VSTD001 |
| 4 | ICAL4 | 12/16/22 13:02 | X121605 | VSTD002 |
| 5 | ICAL5 | 12/16/22 13:23 | X121606 | VSTD005 |
| 6 | ICAL6 | 12/16/22 13:43 | X121607 | VSTD020 |
| 7 | ICAL7 | 12/16/22 14:04 | X121608 | VSTD050 |
| 8 | ICAL8 | 12/16/22 14:25 | X121609 | VSTD100 |
| 9 | ICAL9 | 12/16/22 14:46 | X121610 | VSTD150 |
| 10 | ICAL | 12/16/22 15:07 | X121611 | VSTD200 |
| 11 | ICV | 12/16/22 15:49 | X121613 | CCV |

# Form 5 - Instrument Performance Check

**Client** Aptim Environmental & Infrastucture, Inc.

**Project** LHAAP 46 Febuary 2023

Workorder
**HS23020330**

RunID
VOA6_427850

**Tune File** X021101.D 02/11/23 11:54

| m / e | Ion Abundance Criterion | %RA |
|---|---|---|
| 50 | 15.0 - 40.0% of mass 95 | 15.4 (15.4) |
| 75 | 30.0 - 60.0% of mass 95 | 46.2 (46.2) |
| 95 | Base peak, 100% RA | 100 (100) |
| 96 | 5.0 - 9.0% of mass 95 | 6.7 (6.65) |
| 173 | Less than 2.0% of mass 174 | 0.6 (0.733) 1 |
| 174 | 50.0 - 120.0% of mass 95 | 78.2 (78.2) |
| 175 | 4.0 - 9.0% of mass 174 | 6 (7.73) 1 |
| 176 | 93.0 - 101.0% of mass 174 | 76.7 (98.2) 1 |
| 177 | 5.0 - 9.0% of mass 176 | 5.6 (7.3) 2 |

Value is % of mass 1) 174 2) 176 RA - Relative Abundance

This check applies to the following analyses

| | Type | Date Analyzed | Lab File ID | Sample ID |
|---|---|---|---|---|
| 1 | CCV | 02/11/23 12:36 | X021103 | CCV |
| 2 | CCB | 02/11/23 12:57 | X021104 | CCB |
| 3 | LCS | 02/11/23 13:18 | X021105 | VLCSW-230211 |
| 4 | MBLK | 02/11/23 14:00 | X021107 | VBLKW-230211 |
| 5 | MS | 02/11/23 15:24 | X021111 | ZZZZZZMS |
| 6 | MSD | 02/11/23 15:45 | X021112 | ZZZZZZMSD |
| 7 | SAMP | 02/11/23 16:28 | X021114 | Trip Blank-2302207 |
| 8 | SAMP | 02/11/23 18:13 | X021119 | 46WW09-230207 |
| 9 | SAMP | 02/11/23 18:34 | X021120 | 46WW09-230207-FD |
| 10 | SAMP | 02/11/23 18:55 | X021121 | 46WW05-230207 |
| 11 | CCV_EN | 02/11/23 22:25 | X021131 | CCV-END |

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Form 6

# Initial Calibration Data

# Volatiles by  by EPA 8260

Workorder

HS23020330

Client

Aptim Environmental & Infrastucture, Inc.

Project

LHAAP 46 Febuary 2023

02/28/2023

ALS Environmental–Houston Laboratory
10450 Stancliff Road, Suite 210, Houston, TX 77099
Phone (281) 530-5656 Fax (281) 530-5887
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# Initial Calibration Data

**Client** Aptim Environmental & Infrastucture, Inc.
**Project** LHAAP 46 Febuary 2023

**Workorder** HS23020330

**RunID** VOA6_424237

## Volatiles by by EPA 8260

**ICAL Start Date** 16-DEC-2022 1138
**ICAL End Date** 16-DEC-2022 1507

**Calibration Files**

**Level 1** ..voa6.i\X221216.b\X121602.D
**Level 2** ..voa6.i\X221216.b\X121603.D
**Level 3** ..voa6.i\X221216.b\X121604.D
**Level 4** ..voa6.i\X221216.b\X121605.D
**Level 5** ..voa6.i\X221216.b\X121606.D
**Level 6** ..voa6.i\X221216.b\X121607.D
**Level 7** ..voa6.i\X221216.b\X121608.D
**Level 8** ..voa6.i\X221216.b\X121609.D
**Level 9** ..voa6.i\X221216.b\X121610.D
**Level 10** ..voa6.i\X221216.b\X121611.D

| Compound | Level 1<br>0.250<br>Level 7<br>50.0 | Level 2<br>0.500<br>Level 8<br>100.0 | Level 3<br>1.00<br>Level 9<br>150.0 | Level 4<br>2.00<br>Level 10<br>200.0 | Level 5<br>5.00 | Level 6<br>20.00 | Curve | b | m1 | m2 | %RSD<br>or $R^2$ | Q |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Dichlorodifluoromethane | NE<br>160392 | 1990<br>309019 | 2911<br>476130 | 6239<br>635808 | 15008 | 63382 | LINR | 0.00786 | 0.35247 | | 0.99971 | |
| Chloromethane | NE<br>192710 | 2466<br>388163 | 3670<br>621048 | 8057<br>865151 | 19623 | 72324 | LINR | 0.04423 | 0.47332 | | 0.99747 | |
| Propionitrile | NE<br>0.04851 | 0.06018<br>0.04917 | 0.05265<br>0.05178 | 0.04739<br>0.05178 | 0.05114 | 0.04656 | AVRG | | 0.05102 | | 7.91502 | |
| Vinyl Chloride | NE<br>0.44103 | 0.52268<br>0.42953 | 0.40472<br>0.44923 | 0.39786<br>0.45909 | 0.42164 | 0.40520 | AVRG | | 0.43678 | | 8.81916 | |
| Bromomethane | NE<br>139689 | 1893<br>284165 | 3293<br>470318 | 5996<br>NE | 15112 | 52034 | LINR | 0.03529 | 0.34244 | | 0.99519 | |
| Chloroethane | NE<br>0.29447 | 0.35820<br>0.28714 | 0.27936<br>0.30494 | 0.31044<br>0.30410 | 0.31436 | 0.28309 | AVRG | | 0.30401 | | 7.80750 | |
| Trichlorofluoromethane | NE<br>0.60756 | 0.71207<br>0.59817 | 0.54474<br>0.64605 | 0.57316<br>0.65074 | 0.59068 | 0.57785 | AVRG | | 0.61122 | | 8.28859 | |
| Acrolein | NE<br>27445 | 440<br>60756 | 761<br>96139 | 1317<br>125874 | 2699 | 12279 | LINR | 0.05644 | 0.03519 | | 0.99833 | |
| Acetone | NE<br>124798 | 2669<br>243517 | 4787<br>373504 | 7041<br>514105 | 17632 | 50987 | LINR | -0.00069 | 0.14025 | | 0.99910 | |
| 1,1-Dichloroethene | NE<br>0.36912 | 0.44142<br>0.36226 | 0.35953<br>0.38517 | 0.37590<br>0.39076 | 0.37389 | 0.35725 | AVRG | | 0.37948 | | 6.80558 | |

NE - Not Evaluated, AVRG - Averaged, LINR - Linear Regression, WLIN - Weighted Linear, QUAD - Quadratic, * - Curve Fit Outside Limits

# Initial Calibration Data

**Client** Aptim Environmental & Infrastucture, Inc.
**Project** LHAAP 46 Febuary 2023

**Workorder** HS23020330

**RunID** VOA6_424237

## Volatiles by by EPA 8260

**ICAL Start Date** 16-DEC-2022 1138 **ICAL End Date** 16-DEC-2022 1507



| Compound | Level 1 0.250 Level 7 50.0 | Level 2 0.500 Level 8 100.0 | Level 3 1.00 Level 9 150.0 | Level 4 2.00 Level 10 200.0 | Level 5 5.00 | Level 6 20.00 | Curve | b | m1 | m2 | %RSD or $R^2$ | Q |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Isobutyl Alcohol | NE<br>0.05462 | 0.05610<br>0.05559 | 0.05239<br>0.05946 | 0.05650<br>0.05952 | 0.05728 | 0.05469 | AVRG | | 0.05624 | | 4.10209 | |
| Acetonitrile | NE<br>0.04430 | 0.04776<br>0.04552 | 0.04645<br>0.04791 | 0.04253<br>0.04736 | 0.04357 | 0.04417 | AVRG | | 0.04551 | | 4.32823 | |
| Allyl Chloride | NE<br>0.81324 | 0.99118<br>0.83169 | 0.95202<br>0.86799 | 0.81682<br>0.86396 | 0.84304 | 0.82034 | AVRG | | 0.86670 | | 7.30464 | |
| Iodomethane | NE<br>455792 | 2397<br>958603 | 3865<br>1554547 | 8702<br>2193685 | 26708 | 143457 | QUAD | 0.06641 | 2.01333 | -0.08031 | 0.99956 | |
| Acrylonitrile | NE<br>0.12970 | 0.12113<br>0.12956 | 0.12536<br>0.13857 | 0.12482<br>0.13997 | 0.12256 | 0.12666 | AVRG | | 0.12870 | | 5.15060 | |
| Methylene Chloride | NE<br>0.49311 | 0.63666<br>0.46611 | 0.59459<br>0.48892 | 0.50364<br>0.47907 | 0.50885 | 0.51372 | AVRG | | 0.52052 | | 10.92514 | |
| Methyl tert-butyl ether | NE<br>1.16844 | 1.26574<br>1.18584 | 1.39027<br>1.23813 | 1.27259<br>1.24075 | 1.24993 | 1.16729 | AVRG | | 1.24211 | | 5.52745 | |
| Carbon Disulfide | NE<br>0.97542 | 1.07494<br>0.97088 | 1.00609<br>1.02392 | 0.95722<br>1.06178 | 0.94769 | 0.91773 | AVRG | | 0.99285 | | 5.32584 | |
| trans-1,2-Dichloroethene | NE<br>0.41851 | 0.48064<br>0.41454 | 0.42427<br>0.43221 | 0.38965<br>0.43554 | 0.42173 | 0.40526 | AVRG | | 0.42470 | | 5.92187 | |
| Vinyl Acetate | NE<br>1.07506 | 1.09845<br>1.07519 | 0.99054<br>1.16529 | 1.06368<br>1.16741 | 1.12321 | 1.05445 | AVRG | | 1.09037 | | 5.13969 | |
| 1,1-Dichloroethane | NE<br>0.72125 | 0.83949<br>0.70504 | 0.80145<br>0.74074 | 0.69997<br>0.74459 | 0.75023 | 0.70550 | AVRG | | 0.74536 | | 6.34771 | |
| Chloroprene | NE<br>0.16145 | 0.19503<br>0.16116 | 0.18721<br>0.16823 | 0.17124<br>0.17481 | 0.15874 | 0.15219 | AVRG | | 0.17001 | | 8.17551 | |

NE - Not Evaluated, AVRG - Averaged, LINR - Linear Regression, WLIN - Weighted Linear, QUAD - Quadratic, * - Curve Fit Outside Limits

# Initial Calibration Data

**Client** Aptim Environmental & Infrastucture, Inc.
**Project** LHAAP 46 Febuary 2023

**Workorder** HS23020330

**RunID** VOA6_424237

## Volatiles by by EPA 8260

**ICAL Start Date** 16-DEC-2022 1138 **ICAL End Date** 16-DEC-2022 1507



| Compound | Level 1 0.250 Level 7 50.0 | Level 2 0.500 Level 8 100.0 | Level 3 1.00 Level 9 150.0 | Level 4 2.00 Level 10 200.0 | Level 5 5.00 | Level 6 20.00 | Curve | b | m1 | m2 | %RSD or $R^2$ | Q |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2-Butanone | NE<br>130179 | 1292<br>264221 | 2498<br>407629 | 5418<br>555896 | 11771 | 47830 | LINR | 0.06050 | 0.15346 | | 0.99924 | |
| Methacrylonitrile | NE<br>0.32328 | 0.44770<br>0.32565 | 0.36475<br>0.34081 | 0.34993<br>0.34351 | 0.34840 | 0.34235 | AVRG | | 0.35404 | | 10.52608 | |
| 2,2-Dichloropropane | NE<br>0.62063 | 0.70167<br>0.61027 | 0.65466<br>0.64008 | 0.60521<br>0.65162 | 0.61866 | 0.59289 | AVRG | | 0.63286 | | 5.25207 | |
| cis-1,2-Dichloroethene | NE<br>0.49985 | 0.61803<br>0.48778 | 0.49622<br>0.51710 | 0.52999<br>0.51455 | 0.50446 | 0.48374 | AVRG | | 0.51686 | | 7.86616 | |
| Chloroform | NE<br>0.81023 | 0.87547<br>0.78725 | 0.86252<br>0.84612 | 0.85352<br>0.84457 | 0.84666 | 0.79238 | AVRG | | 0.83541 | | 3.73708 | |
| Bromochloromethane | NE<br>0.26364 | 0.32093<br>0.26287 | 0.29857<br>0.28290 | 0.28124<br>0.28282 | 0.29319 | 0.26077 | AVRG | | 0.28299 | | 6.91423 | |
| 1,1,1-Trichloroethane | NE<br>0.65703 | 0.76105<br>0.64156 | 0.65666<br>0.67604 | 0.60049<br>0.69720 | 0.64387 | 0.63152 | AVRG | | 0.66283 | | 6.90392 | |
| 1,1-Dichloropropene | NE<br>0.37084 | 0.35889<br>0.35979 | 0.34245<br>0.36734 | 0.33027<br>0.37324 | 0.34789 | 0.34406 | AVRG | | 0.35497 | | 4.12237 | |
| 1,2-Dichloroethane | NE<br>0.39909 | 0.45501<br>0.40154 | 0.40587<br>0.41082 | 0.39492<br>0.41030 | 0.41104 | 0.39842 | AVRG | | 0.40967 | | 4.39762 | |
| Carbon Tetrachloride | NE<br>0.36348 | 0.40179<br>0.35355 | 0.45347<br>0.36349 | 0.40515<br>0.37429 | 0.35265 | 0.34370 | AVRG | | 0.37906 | | 9.25223 | |
| Benzene | NE<br>1.17241 | 1.34410<br>1.15323 | 1.19304<br>1.17461 | 1.18322<br>1.18197 | 1.19608 | 1.14722 | AVRG | | 1.19399 | | 4.90945 | |
| Trichloroethene | NE<br>0.33750 | 0.37562<br>0.33140 | 0.31723<br>0.33891 | 0.33885<br>0.34649 | 0.33109 | 0.33079 | AVRG | | 0.33865 | | 4.73809 | |

NE - Not Evaluated, AVRG - Averaged, LINR - Linear Regression, WLIN - Weighted Linear, QUAD - Quadratic, * - Curve Fit Outside Limits